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Title: The Influence of Government Enabling Environment on the Quality of Solid Waste Collection Delivered by the Private Sector: Case Studies of Madina and Adenta, Ghana.

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Summary

The need to tackle Solid Waste Management (SWM) problems has become crucial especially in an era where environmental issues have become an integral part of achieving sustainable development. In recent times, SWM has become an impossible task for local governments. The continuous increase in solid waste generation as a result of urbanization and high consumption rates inhibits local governments, especially those of cities in developing countries, of which Madina and Adenta are no exception, from providing solid waste services according to the desired quality. Most cities are characterized by uncollected waste in centres and corners of cities and streets, indiscriminate disposal of solid waste, gutters clogged with waste resulting in flooding, stagnant pools of water creating the platform for mosquitoes and the ensuing prevalence of malaria, polluted water and the environment causing series of cholera outbreaks.

To solve this menace, private sector involvement in SWM was introduced in Ghana considering the notion that the private sector is more effective than the public sector. Having been the agency solely responsible for the collection, transportation and disposal of solid waste in Madina and Adenta from 2008, private sector provision of solid waste collection has been very effective in Madina. However, with the operation of the private sector in Adenta for 8 years now, there has not been maximum efficiency and massive improvement in solid waste collection. Indiscriminate disposal of solid waste continuously persists and all forms of waste are found at unauthorized locations in the municipality including drains, uncompleted buildings and along the streets. This situation denotes failure on the part of the private sector to deliver solid waste collection services according to the desired level. Literature confirms that certain pre-conditions and an enabling environment such as existence and enforcement of policies, bye-laws and legal and regulatory frameworks and institutional capacities of the public sector must be created to enable the private sector deliver improved quality of services. The study therefore sought to determine which conditions in Madina makes the private sector more effective than that of Adenta. It is against this background that the study sought to determine the extent to which government enabling environment influences the quality of solid waste collection delivered by the private sector.

The study adopted a case study research strategy and interviewed professionals in the Madina and Adenta Municipalities as well as private sector companies to enquire what enabling environment was created to support the private sector to deliver an improved quality of service. Questionnaires were also administered at the household level to ascertain from users the quality of solid waste collection received. Data collected from the field was analyzed using Atlas ti and Ms Excel.

Findings of the study indeed revealed that the existence and enforcement of policies, bye-laws strong institutional capacities of the public sector, performance monitoring and environmental sanitation education contribute to an improved quality of service delivery of solid waste collection by the private sector. It was revealed that the private sector in Madina are able to collect 90% of solid waste generated unlike Adenta where only 25% of solid waste generated is collected. Service users in Madina were extremely satisfied with the services rendered whilst those in Adenta were extremely unsatisfied. The reason why the private sector in Madina was effective is because the Madina Municipality observes and enforces the guidelines in the Environmental Sanitation Policy of Ghana which spells out what role each stakeholder should play to ensure that the desired quality of solid waste delivery is attained. The Madina Municipality also has the La Nkwatanang Madina Municipality Bye-Laws that sanctions all defaulters be it private sector companies or individual residents who flout the bye-laws.

Sanctions are in the form of fines and jail terms. These fines are used to support the private sector and also given as incentives to the Waste Management Department. The Madina Municipality also has an effective staff coupled with the municipality's taskforce and the staff from the Environmental Protection Agency who carry out intense monitoring to monitor the activities of the private sector and individuals and households from defaulting against SWM laws. The effort of the Madina Municipality earned them the cleanest city in Accra in 2014 and because of the enabling environment created, the private companies are able to collect and dispose 90% of the solid waste generated. Adenta on the other hand collects a quarter of the solid waste that is generated. This has been attributed to lack of enforcement of bye laws and poor organizational capacity of the municipality. Whilst officials in Madina followed the ESP to the letter, officials in Adenta on the other hand did not follow the guidelines of the policy. Moreover, Adenta's WMD is bedeviled with inadequate staff and the lack of adequate resources to carry out the duty of monitoring the solid waste management behaviour of households. Households and individuals therefore engage in indiscriminate disposal of solid waste thereby putting much burden on the private sector and adding to their work.

The results of the study revealed that there is a strong correlation between enforcement of policies and bye-laws, monitoring of the activities of the private sector, environmental sanitation education and the quality of solid waste collection. This agrees with assertions made by some authors that the right environment must be created for the private sector to be able to deliver services according to the desired quality. The findings however contradict the views of other authors who opine that the private sector only needs to be technically and financially equipped as well as have the competent human resource in order to deliver services according to the desired quality.

Based on the above, it is recommended that, municipalities must see it as an obligation to enforce policies and bye-laws to assist the private companies in their service, conduct public education regularly and fulfil their part in contract arrangements. Capacities of municipalities should be developed and built and waste management seen as a priority by resourcing the Waste Management Departments. Performance monitoring (night monitoring surveillance) must be undertaken effectively and regularly to ensure that private operators meet obligations. All stakeholders must be involved in user fee fixing to ensure willingness to pay consequently leading to cost recovery hence, improved service quality. There should also be an enforcement of the polluter pays principle to ensure users pay for services received.

Keywords

Government Enabling Environment, Solid Waste Collection, Quality of Solid Waste Collection, Private Sector Involvement, Adenta Municipal Assembly, La Nkwantanang Madina Municipal Assembly

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Foreword

One of the many problems faced by most countries, especially the low income ones is solid waste collection. The continuous growth of urban areas is associated with challenges, of which solid waste management is paramount. As a result, it was not an easy task to land on undertaking a research on solid waste collection in two cities in Ghana who are growing rapidly and experiencing some of the negative challenges of urbanization including solid waste management, and particularly delving into policies and legal and regulatory frameworks and institutional capacities that support private companies in delivering services according to the desired quality. As a municipal worker myself, I have noticed how solid waste collection has become a daunting task for municipalities; I therefore decided to look into it and investigate exactly what the problem is.

The research started with several investigations into the state of the art of literature. The beginning of the research was overwhelming. In the beginning, completing this research seemed impossible. I could not imagine surmounting all these hills and getting to the finish line.

Despite all these challenges however, this thesis has come about as a result of hard work, relentless effort, self-motivation, determination and a persistent spirit and attitude as well as support and motivation from my supervisor, family and friends.

I do hope you find it an interesting read and gain some knowledge on the key pressing development issues raised in the hope that it will inspire you to take action on development concerns faced in your respective localities.

Abbreviations

AdMA	Adentan Municipal Assembly
DESSAP	District Environmental Sanitation Strategy and Action Plan
ESP	Environmental Sanitation Policy
IHS	Institute for Housing and Urban Development
ISWM	Integrated Sustainable Waste Management
LaNMMA	La Nkwantanang Madina Municipal Assembly
MLGRD	Ministry of Local Government and Rural Development
MMDAs	Metropolitan, Municipal and District Assemblies
MSW	Municipal Solid Waste
MSWM	Municipal Solid Waste Management
NESSAP	National Environmental Sanitation Strategy and Action Plan
PS	Private Sector
PSI	Private Sector Involvement
PSP	Private Sector Participation
SWC	Solid Waste Collection
SWM	Solid Waste Management
WMD	Waste Management Department

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Chapter 1: Introduction

1.1 Introduction

This study intends to examine the influence that an enabling environment (policies, institutional capacity and legal and regulatory framework) created by the local government has on the quality of Solid Waste Collection (SWC) delivered by the Private Sector (PS) in Madina, the capital of the La-Nkwantanang Madina Municipality, Ghana and Adenta, the Capital of the Adentan Municipality also in Ghana. This chapter provides an overall overview of the study, underlining the background, problem statement and research objective. It also outlines the research questions, significance of the study and concludes with the scope and limitations of the study.

1.2 Background

The need to tackle Solid Waste Management (SWM) problems is very crucial especially in an era where environmental issues have become an integral part of achieving sustainable development. Proper provision of solid waste services is not only a fundamental human right but also very crucial in sustaining human health and the environment. SWC is the most essential component of the SWM system and an integral element in achieving sustainable development because of its direct relationship with the environment, health and productivity of humans (Klundert and Anschütz, 2001). However, in recent times, SWC has become an impossible task for local governments. The continuous increase in solid waste generation as a result of urbanization and high consumption rates as well as changes in composition of solid waste mainly from organic to plastic waste inhibits local governments, mostly those of developing countries, Ghana inclusive, from providing solid waste services in an effective and sustainable manner and according to the desired level. It is believed that the changing composition and complexity of the current solid waste being generated is as a result of the changing way of life and consumption patterns of especially the urbanized and sophisticated population in developing countries (Mwesigye, Mbogoma, et al., 2009). The situation in Ghana is not different where there has been a shift from packaging foods with biodegradable substances like leaves, to packaging foods with plastics.

The situation and scenery in most cities of these developing world is appalling ranging from uncollected waste in centres and corners of cities and streets, indiscriminate disposal of solid waste, gutters clogged with waste resulting in flooding, stagnant pools of water creating the platform for mosquitoes and the ensuing prevalence of malaria, polluted water and the environment causing series of cholera outbreaks (MLGRD, 2010), (Oduro-Kwarteng, 2011). The results of the Environmental Sanitation Survey conducted in Ghana between 2007 and 2008 showed that only 5% benefit from primary SWC services whilst almost 76% of households have no access to appropriate Municipal SWC services (MLGRD, 2010). Additionally, the 2010 National Environmental Sanitation Plan of Ghana also specifies that almost 85% of all waste generated is not collected and are disposed of indiscriminately (MLGRD, 2010). A number of efforts have been made to solve the SWM menace in Ghana. One of these efforts is the involvement of the private sector in SWC in order to improve the effectiveness and efficiency in the delivery of SWM services.

Private sector participation (PSP) is defined as the allocation of part of SWM services from the public sector to the private sector (Ezebilo and Animasaun, 2012). SWM is a service which is usually the responsibility of municipalities or local governments. Privatization of municipal services mostly emerges as a result of several reasons especially in response to poor service

delivery by public sector entities. It is mentioned that as a result of inadequate capacity and funds in the public sector, several low income countries have involved the PS to bring on board their capacities and finances (Kassim, 2009). Others also asserted that as a result of low satisfaction of public sector services, many citizens in Sub-Sahara African cities have lost confidence in the public sector, hence leading to a largely service provision by the PS who are mostly associated with high performance (Fobil, Armah, et al., 2008). PSP, in this regard is seen as a solution to reduce government domination, promote effectiveness using competitiveness and offer people a wider scope of choices within a market environment (Warner and Bel, 2008). There is strong consensus among social thinkers that the PS has the answer to the problem of inefficiency bedeviling public sector organizations. Currently, in most developing countries, a substantial amount of the collection, transportation, and disposal of solid waste is being handled by the PS with the public sector however still in control (Fobil, Armah, et al., 2008).

The tradition in Ghana has been the same as most African countries, where local governments have originally been the ones in charge of delivering public services, SWM services inclusive. In the early 1990s, Private Sector Involvement (PSI) in SWM came into being due to most municipalities' incapacity to render satisfactory and effective SWM services. This was done to relieve local governments of heavy financial burdens, increase access to SWC and improve service delivery. The decision to involve the PS in SWM in Ghana was mainly controlled by the Urban Environmental Sanitation Project sponsored by the World Bank (World Bank, 1996) and has now been endorsed and incorporated into the 2010 Ghana National Environmental Sanitation Policy (MLGRD, 2010). At present, the main approach for rendering SWM services in the country is contracting out to the PS, with the PS entrusted with the responsibility to collect the solid waste generated in many cities whilst the municipality plays a regulatory and support role. Studies show that involving the PS in SWC has to some extent improved service coverage in most developing countries; there are however persistent issues such as generally improved quality of service, effectiveness, sustainability of private sector service delivery and enabling environment to complement the performance of the private sector that necessitate supplementary research to ascertain improvement in performance (Akaateba and Yakubu, 2013), (Kousadikar and Singh, 2013), (Oduro-Kwarteng, 2011) and (Kassim, 2009). With that in mind, it can be said that PSI in SWC alone cannot solve the environmental menace in the country. For PSI in SWM to be effective there should be an enabling environment created by the government to enable the PS to be able to meet service delivery requirements.

To ensure that SWM problems are dealt with and the private sector works efficiently, the 2010 Environmental Sanitation Policy (ESP) was put in place by the Ministry of Local Government and Rural Development (MLGRD) in partnership with important stakeholders in the SWM sector. Principles of the ESP includes inspection and enforcement of sanitary regulations, monitoring the observance of environmental standards and environmental sanitation education (The Environmental Sanitation Policy of Ghana, 2010). Policy focus of the ESP also comprises information, education and communication, legislation and regulation, levels of service, sustainable financing and cost recovery and monitoring and evaluation (The Environmental Sanitation Policy of Ghana, 2010). The ESP obligates Metropolitan, Municipal and District Assemblies (MMDAs) to pass bye-laws to regulate environmental issues as well as enable the prevention of all forms of pollution and insanitary conditions within their jurisdiction (The Environmental Sanitation Policy of Ghana, 2010) . According to the Local Government Act (462), although the MLGRD is accountable for SWM policy formulation, legislation, regulation, monitoring and enforcement, municipalities are solely responsible for the

implementation of these roles to ensure that SWC by the PS is done according to the desired quality.

1.3 Problem Statement

Madina, the capital of the La Nkwantanang Madina Municipality and Adenta, the capital of the Adentan Municipal Assembly since inception, have contracted the services of private SWM companies based on a policy in 2006 by the Government of Ghana that all MMDAs should employ the services of private companies to supplement their work in SWM. Presently the SWM in the two Municipalities is the responsibility of the Municipalities and eight private waste contractors. The contractors are obliged to collect and dispose of solid waste generated in the Municipalities whilst the municipality plays a monitory, regulatory and support role. The current partnership arrangements between the Municipalities and the private companies is a franchise and contract where the contractors are tasked to manage kerbsides and container bins positioned at sanitary sites in the two municipalities. SWM in Adenta has been challenging. With the increasing influx of people into the municipality because of its booming central business district and its proximity to Ghana's capital, Accra, huge amounts of solid waste are generated at alarming rates. With the operation of the private sector in Adenta for 8 years now, one would expect maximum efficiency and massive improvement in SWC considering the notion that the private sector is more effective. Unfortunately, there has not been any significant improvement in SWC. The private sector is able to collect only a quarter of the solid waste generated in the municipality (WMD of AdMA, 2015). Also, indiscriminate disposal of solid waste by residents continuously persists (WMD of AdMA, 2015). Worse of all, all forms of waste are dumped together at unauthorized and unapproved locations in the municipality including drains, uncompleted buildings and along the streets.

It is argued that the private sector in some circumstances does not ensure the efficiency that is desired. In literature, the inability of PS to deliver the desired quality of SWC has been attributed to several factors namely, low technical and managerial capacity and financial constraints on the part of the private sector, (Oteng-Ababio, 2010), (Okot-Okumu and Nyenje, 2011), (Saidou and Aminou, 2015), poor inter-organizational arrangements (Oduro-Kwarteng, 2011), low cost recovery arising from unwillingness to pay for services (Mwesigye, Mbogoma, et al., 2009), lack of enforcement of policies and legal and regulatory framework (Karanja 2005), unclear contracts and non-compliance to contracts on the part of both parties (local governments and private companies), political influence and negative perception of people towards SWM (Oduro-Kwarteng, 2011), (Mwesigye, Mbogoma, et al., 2009). It is stated that there are no rules and regulations on how the private sector should operate, no monitoring and supervision of their activities and no SWC standards are issued by municipalities (Karanja, 2005).

Although Adenta and Madina were established in the same year and have the same private companies working in the two cities, Madina on the other hand, has an effective SWM system and characterized by a clean and litter free environment. Madina has won the National Sanitation Challenge since 2014 as a result of the cleanliness of the city due to a well-functioning private sector delivery of solid waste (MLGRD, 2010). The striking difference however is that they have different institutional capacities and local policies and bye-laws. Could the difference in performance therefore be attributed to operational inefficiency due to weak capacity of the PS, use of inappropriate technology or the absence of an enabling environment to support the PS to deliver services according to the desired level? It is in this light that this study seeks to examine the influence of government enabling environment on the quality of SWC delivered by the private sector in two cities in Ghana, Madina and Adenta.

1.4 Research Objective

The argument above posits that the inability of the private sector has been attributed to weak operational capacity of private organisations (internal factors) as well the inadequate enabling environment (external factors) to support the private sector. To investigate the situation in Madina and Adenta, the researcher intended to enquire which of the problems mentioned above existed in Madina and Adenta by focusing on one aspect. The issue being investigated is what enabling environment (external factors) explain the variations in quality of solid waste collection delivered by the private service providers in the two municipalities. The research therefore intended **to examine the influence of government enabling environment on quality of solid waste collection services delivered by the private sector in Madina and Adenta, Ghana.**

1.5 Research Question

To what extent do government enabling environment influence the quality of solid waste collection services delivered by the private sector in Madina and Adenta, Ghana?

1.5.1 Sub-Research Questions

1. How is solid waste collection organized in Madina and Adenta?
2. What are the gaps between the existing contractual agreement and the quality of service provided by private contractors in Adenta?
3. What are the elements of government enabling environment existing in Madina and Adenta and how do they affect the quality of service delivery of solid waste collection?

1.6 Significance of Study

There have been several studies about SWM in developing countries that have suggested several solutions aimed at improving SWM (Akaateba and Yakubu, 2013), (Kousadikar and Singh, 2013) (Oduro-Kwarteng, 2011), (Oteng-Ababio, 2010), (Saidou and Aminou, 2015), (Alakinde, 2012) and (Katusiimeh, 2012). However, the main findings from these researches leave much to be desired. The findings from these studies indicate that involving the PS in SWC has to some extent improved service coverage in most developing countries; there are however persistent issues such as generally improved quality of service, effectiveness, sustainability of private sector service delivery and enabling environment to complement the performance of the private sector that necessitate supplementary research to ascertain improvement in performance.

Moreover, the relationship between PS performance and government enabling environment were not the emphasis of these studies. Studies relating to PS performance and government enabling environment in SWM in the developing world is mostly not the focus of research. The relationship between performance of the PS and the legal and regulatory framework, policies and institutional capacity of the public sector necessary for improved service delivery is quite a complex issue in Africa. While there is abundant increase in literature on technical, policy frameworks, implementation strategies, urban governance and institutional dimensions of waste management, it is imperative to critically analyze the external factors that impact the performance of the private sector in solid waste service provision in developing countries. In view of this, the study aims to research into the extent to which government enabling environment influence the quality of solid waste collection services delivered by the private sector in Madina and Adenta, Ghana. Undertaking this research will serve as inputs into policy

and planning interventions on how PSI in SWM can be improved in Madina, Adenta and Ghana as a whole, especially when it comes to planning environmental sanitation issues. Secondly, in spite of the abundant literature on how government enabling environment affect the performance of the PS in SWM, Ghana lags behind in these theoretical and empirical literature. This study will therefore contribute to building up academic and empirical literature on PSI in SWM in Madina and Adenta. Furthermore, the outcome of the research will be beneficial for formulating environmental sanitation policies, performance monitoring, and benchmarking to boost efficiency and effectiveness in provision of services.

1.7 Scope and Limitations of Study

This study was aimed at examining the extent to which government enabling environment spelt out as policies, legal and regulatory framework and institutional capacity of the public sector influence the quality of SWC services delivered by the PS in Madina and Adenta, Ghana. The study concluded with an analysis of the enabling environment to be created to enhance the performance of the PS whilst a consideration of alternatives for private sector involvement in SWM was also provided. The study was undertaken in Madina and Adenta which are rapidly urbanizing and experiencing some of the negative effects of urbanization in terms of SWM and its resultant effects. The study used a multiple case study research strategy to interview private solid waste companies and some officials of the Madina and Adenta Municipalities in order to ascertain the reasons for the disparities in the performances of the PS in the two cities. The research also sampled households to assess their views on the quality of service of SWC provided by the PS.

The **limitation** of the study is that achieving external validity with the type of research strategy chosen was challenging as it was difficult to generalize results of the study to the entire population because cases were deliberately chosen to acquire in-depth knowledge of a phenomenon at the expense of generalizing results. The study also faced the issue of limited resources especially that of time to interview as many people as possible. Another limitation of the research is that the research focused on only an aspect of the causes of the inability of the private sector to deliver services according to the desired quality although there could be other reasons associated with it.

Chapter 2: Literature Review / Theory

2.1 Introduction

The essence of this chapter is to provide a theoretical background to the research. It does so by reviewing academic literature on theories and concepts relating to the influence of government enabling environment on the quality of SWC delivered by the PS outlining the key gaps and insights. The chapter begins with a look at SWC modes and their characteristics and further discusses literature on PSI in SWC and government enabling environment that influences SWC by the PS. Quality of service is also defined using parameters. The chapter then concludes with a conceptual framework for this research.

2.2 Definition of Solid Waste

According to (Klundert and Anschütz, 2001), waste is regarded as any material or substance that is considered to be of no further use to the owner and is therefore discarded; however, for another person, it could be valuable and a source of income. Solid waste, which the study will focus on, can be defined as 'non-liquid material that no longer has any value to the person who is responsible for it' (Asnani and Zurbrugg, 2008). The term Municipal Solid Waste (MSW) therefore refers to 'solid waste from houses, streets and public places, shops, offices, and hospitals' (Asnani and Zurbrugg, 2008). MSW in developing countries are mostly organic composing of fruits and vegetables and large quantities of sand, ash, dust and stones whilst those of the developed world are mostly paper, plastic, glass, and metal (Asnani and Zurbrugg, 2008).

2.3 Municipal Solid Waste Management

Municipal Solid Waste Management (MSWM) refers to the whole procedure encompassing these phases, namely, 'waste segregation and storage at source, primary collection, street sweeping, secondary waste storage, transport of waste, treatment and recycling options for solid waste, and final disposal' (Asnani and Zurbrugg, 2008). All these phases are of equal importance and must be coordinated and integrated. These processes also require planning and proper management so as to ensure high quality of service. Solid waste collection (SWC), which the study is focused on, according to the UN Habitat includes the preliminary storage of solid waste in households and the collection and transfer of waste, including transportation of the waste till it is taken to a treatment plant or disposed of in an environmentally sound manner (UN Habitat, 2010). SWC is regarded as the most important component of the SWM system with the greatest impact on urban living and requires the greatest share of a municipality's budget.

SWM is mostly the obligation of municipal or local government authorities. Managing solid waste has been labelled by numerous authors as one of the main challenges facing existing and upcoming cities the world over. The challenges of SWM are numerous. With increased economic development and improved standards of living coupled with rapid urbanization, demand and consumption of goods is increasingly soaring, consequently ensuing in corresponding increase in solid waste generation, especially in low income countries (Minghua, Xiumin, et al., 2009). Little success has been achieved despite numerous efforts on the part of local governments to solve the problems associated with the voluminous generation of solid waste. This is mainly attributed to inability to provide adequate service, financial inadequacies and weak institutional and contractual arrangements (Klundert and Anschütz, 1999), (Oteng-

Ababio, 2010), (Oduro-Kwarteng, 2011). Also, low coverage of service, lack of reliability of SWC, difficulty in accessing newly developed areas and the constant engagement in indiscriminate disposal, illegal dumping and waste littering among people are causal factors to the solid waste pandemonium in low income countries (UN Habitat, 2011), (Oduro-Kwarteng, 2011), (Fei-Baffoe, Atta Nyankson, et al., 2014). Gathering from the above, it can clearly be understood that increasing SWM problems in low income countries is as a consequence of rapid urbanization, economic development and changing lifestyles. This implies that effective ways of dealing with MSW must be established to aid in curbing the problems associated with an ineffective system. The success of any SWC system is dependent on the acceptance of its quality of service delivery by households as well as their participation in planning and decision making. An integrated sustainable SWM system is therefore needed to restructure the process of SWC service in a way that will improve access to SWC services especially for people in low income areas.

2.4 The Integrated Sustainable Waste Management (ISWM) Model

The ISWM approach provides a framework for planning a SWM system in an organized and efficient manner. It incorporates the sustainability aspects namely the environmental, socio-cultural, institutional, political, legal and the involvement of stakeholders in the SWM system (Klundert and Anschütz, 1999). SWM is an imperative aspect of achieving sustainability and ensuring better quality of life of a particular populace. Sustainable SWM entails adopting a system that is suitable for the local context in relation to social, financial, and environmental perspectives as well as being able to maintain itself over a lengthy time period without diminishing the needs for the future generation as well (Klundert and Anschütz, 2001). For a SWM system to be sustainable, it should be capable of delivering a proper and reasonable quality of service that is also affordable through a continued interval without extending negative consequences to the environment (Klundert and Anschütz, 2001). The presence of such a system affords households the level of satisfaction required which in turn makes them willing to pay for services received hence making room for cost recovery to be achieved. SWC incorporates three important interconnected sustainability aspects namely, financial, social and environmental (Klundert and Anschütz, 1999). Environmental sustainability necessitates that SWC and disposal does not pollute the environment but is transformed into nutrients through reuse, recycling, waste reduction and minimization. This can be achieved in SWC by encouraging households and waste handlers to engage in separation at source and separate collection. Ensuring financial sustainability means that the SWC system is able to finance itself through the payment of fees by users. To be sustainable socially, the system should benefit all members of society irrespective of their income levels and ability to pay. An ISWM system should also provide the needed legal and regulatory framework, institutional support and policies to make it effective.

2.5 Modes of Solid Waste Collection

SWC has progressed from collecting unseparated waste together and disposing of the waste in open dumps to collection of waste that is segregated at source (Allen, C., 2012). Management of SWC has also moved from being in the public domain solely to being handled by the PS as well (Fobil, Armah, et al., 2008), (Katusiimeh, 2012). The mode of collection of solid waste is dependent on the culture and socio-economic characteristics of a specific context, their perceptions and the level of service required (Klundert and Anschütz, 1999). There are various modes of SWC practiced in developing countries. However, the UN Habitat classifies them

into four, namely, communal collection, block collection, kerbside collection and door to door collection (UN Habitat, 2010).

Communal Collection: In developing countries, this mode is mostly used in low income areas. Under this system, households discharge solid waste into communal storage containers which are positioned at pre-determined vantage points or sites which is subsequently picked up at regular intervals, although in practice containers are lifted as and when they are full. The frequency of communal storage distribution depends on the degree of community willingness to cooperate in its proper utilization. This method prefers the use of portable containers for realization of high labour and vehicle productivity. In addition, the distance between two containers should not exceed 200 metres. This method is less expensive as compared to other collection modes and allows for households to have constant 24-hourly access to a collection service or source. However, in most developing countries, it promotes indiscriminate dumping of refuse as people are inconvenienced in carrying solid waste to central containers; there is also spill and overflow of solid waste when containers are left unemptied at regular intervals (Asnani and Zurbrugg, 2008).

Block Collection: This method of SWC mostly serves areas with huge flats/residential buildings. Under this method, a SWC vehicle moves along a pre-determined path making stops in specified intervals to collect household waste, usually every two to three days. Once in a neighbourhood, bells are sounded and households bring the storage containers out upon hearing the bell. Containers are then handed to the collection crew, who after emptying returns them to the households. Under this method, no containers are left outside households' buildings or in public places. The timing of SWC should be such that householders are available to bring their waste outside.

Kerbside Collection: This mode of SWC is mostly common in areas with high and middle income. In this system, the collection crew collects storage bins which are placed in front of houses on arranged days usually twice in a week. This system requires regular and well organized collection service in order to enable householders leave their wastes at appropriate times. The cost of this mode is relatively higher.

Door-to Door-Collection: Under this method, waste collectors pick up bins from inside each dwelling, which is emptied into a truck and taken back to the dwelling. This method is only productive when collection is frequent, especially once a week. This mode is commonly practised in high income areas in developing countries. Among its advantages are convenience for households, prevention of littering, and possible segregated collection of waste.

Whilst the above modes represent the basic methods of collection, the most productive and economical method from different countries in urban areas will be a combination of them. In Ghana, the two most commonly practised modes are the door to door collection and the communal collection. There has however been a policy to eliminate communal dumping in recent times; it however still persists in some areas, especially in low income areas.

2.6 Private Sector Participation in Service Delivery

Privatization denotes the whole contracting out of public responsibility to private profit-oriented organisations through contracts, concessions or franchises (Anderson, 2011). Since the 1980s, many local governments worldwide have resorted to privatizing crucial public services. With the advent of the Structural Adjustment Programme (SAP) in the 1980s, the PS

notion was adopted as the preferred approach for service delivery (Batley, 1996, Fobil, Armah, et al., 2008) . With the World Bank being at the forefront, the SAP was part of a neo-liberal idea that was of the view that the PS is more competent (Onyanta, 2012). Since then, the notion of privatization has become the norm and the trademark for many countries as it is extensively embraced and especially encouraged by international organizations and benefactors as the most effectual mode for delivering services (Onyanta, 2012) even though this is yet to be confirmed.

The notion of the preference for privatization also has its roots in the New Public Management (NPM) which provides the basics for public private partnerships in public services. The NPM is an established number of restructurings intended to transfer management in the public sector from rigid and authoritative system to a more flexible and post-bureaucratic organizational arrangements (Hood, 1991). The search for efficiency and effectiveness in service delivery and governance necessitated the embracing of administrative procedures, skills and best practices used by the private sector. This was adopted to handle challenges associated with the administration by the public sector and to replace hierarchical bureaucracies with competition. The idea was that involving the private sector in service delivery will improve service quality (Batley and Larbi, 2004). The NPM was more concerned about improving management in the public sector using techniques and best practices from the private sector (Hood, 1991). Even though the NPM was imprecise, it arose different reactions from government officials. There was a divided opinion with one group viewing the NPM as a solution to the failure of the public sector whilst another group also saw it as a means of destroying the legacy built by the public sector.

2.6.1 Categories of Private Sector Arrangements

Private sector arrangements can be categorized into four as outlined by the UN Habitat (UN Habitat, 2010) and Asnani and Zurbrugg (Asnani and Zurbrugg, 2008). They are contracting, franchising, open competition and concession. These are briefly discussed below:

Contracting of services is where a private sector organization is selected by a local government to render an aspect of a service for a fixed number of years, preferably, five years, whilst the public organization still remains in control. Service contracts in SWC mostly span over a long period of time. In Franchising, the PS is given the sole responsibility for rendering a service for a longer term and it is expected that the PS raises its own finances through user fees. In open competition, two or more licensed PS firms compete in the provision of service to users. With regards to concession, the PS organization is required to finance and operate a particular project over a long period (usually 15 years) and eventually transfer ownership to the public sector. Concession awards/projects in SWM involves the management of engineered landfill sites. (UN Habitat, 2010).

PSI in Ghana began with two cities, Accra and Tema, before other cities got involved. The known modes were franchises or contracts without government subsidies.

2.6.2 Private Sector Participation (PSP) in SWC

SWC has traditionally been the responsibility of local governments in most low income countries. The trend of performance in service delivery by the public sector has been ridiculously below expectation in many developing countries, especially in Africa (Van Dijk and Oduro-Kwarteng, 2007). It was highly expected that the introduction of decentralization and PSP in delivery of services, SWC inclusive, would result in increased service delivery (Van Dijk and Oduro-Kwarteng, 2007). The history of PSP in urban governance is found in the 1990s when local governments across Europe adopted partnerships in services and infrastructure

provision, specifically, contracting out to the PS to free them from battling with downturns in finances (Srinivasan, 2006). PSP in SWC in the developing world became rooted in the 1990s. PSP was a recommendation by the World Bank which has been endorsed by many development partners who spend resources building capacities and providing access to and loans to purchase equipment. Privatization is viewed as one of the most effectual instruments for re-organizing and restructuring the public sector as the PS is seen as being primarily more dynamic, inventive and consistent for provision of services that are of superior quality (Kousadikar and Singh, 2013).

2.6.3 Case Studies of PSI in SWC in Developing Countries

Several studies by most authors concerning PSI in SWC in developing countries indicated increase in coverage of SWC services. Unfortunately however, problems with contractual inconsistencies, policies and PS performance were still found to be existent. Issues associated with inefficiencies, poor quality of service and contractual agreements are still faced by the PS. In a study about PSI in SWC in five cities in Ghana, findings indicated that there has not been a significant improvement in the quality of SWC service delivered and there has been gross non-adherance/non-compliance to contractual agreements by the PS (Oduro-Kwarteng, 2011). These authors also found out similar results in their research (Kassim, 2009) and (Mwesigye, Mbogoma, et al., 2009). The findings from these studies also indicate that the issue of coverage is still a matter that needs consideration. Their studies also reveal that the problem of unreliable and irregular collection, container overflows and indiscriminate disposal of solid waste still persists irrespective of PSI in SWC. Others also postulate that there is still much to be desired in PSI in SWC because even though services rendered by the PS is regarded as acceptable, issues of awareness and swift response to customer complaints were lacking (Akaateba and Yakubu, 2013).

In another case study, customers were more satisfied with service delivery by the PS although they are of the view that the problem of SWM is still persistent (Katusiimeh, 2012). The implication of these findings is proof that PSP in SWM does not always assure efficiency and cost recovery. Based on the findings from the case studies mentioned above, it can be said that there has been a mixed feeling about the involvement of the PS as some have proved successful in some places and unsuccessful in others. This implies that although it was largely expected that PSP in SWM would bring an improvement in the quality of service provided; this notion has however not been achieved to a satisfactory level. This study therefore seeks to explore the bottlenecks and constraints that prevent the private sector from being able to perform according to what is desirable and what enabling environment is created to support the PS in improving performance to ensure an improved quality of service delivery by the PS.

2.6.4 Rationale for PSI in SWM

The main argument for the involvement of the PS in service delivery is because local governments especially those in developing countries are unable to render services according to the desired level (Plummer, 2002). Plummer (2002), explained that the motive underscoring PSP in public service delivery is founded on the grounds that the PS is financially and economically efficient with a high managerial capacity and is therefore more capable of providing services that are needed and satisfies the population. Other authors opined that one rationale is that the PS is free of any political interferences and can operate freely without political interference and therefore can enhance its labour and focus its resources in delivery of services (Fobil, Armah, et al., 2008), (Alakinde, 2012). Another reason is that the PS is efficient in hiring qualified staff according to their performance and not square pegs in round holes as it

is the culture in the public sector (Kaseva and Mbuligwe, 2005). It is also argued that public agencies are characterized by unreliable service delivery and mismanagement coupled with lax supervisory processes and no spelt out measures for discipline (Coad, 2005). Coad (2005) further mentions that politics is a factor which often leads to employing unqualified personnel leading to underperformance of duties and inefficiencies. It was therefore a smart decision to involve the PS in service provision to improve efficiency.

2.6.5 Benefits of PSI in SWC

Several advantages of PSI in SWC has been outlined by some authors (UN Habitat, 2010, Plummer, 2002), (Batley, 1996) and (Batley and Larbi, 2004). These benefits are outlines below.

Firstly, the PS is regarded as having access to huge amounts of finances or loans required to carry out SWC activities hence saving the public sector of financial burden. Secondly, the PS has high expertise and skills to effectively manage the solid waste system. Thirdly, the PS is said to be devoid of any political interferences and can therefore operate freely without being suppressed by politics as it is the opposite in public service delivery. Also, the PS is regarded to be profit oriented and will therefore provide an effective service so as to generate the needed profit. Lastly, the PS is innovative and efficient in management of a facility, it has financial access and has expertise in technologies that can be useful to local governments who also apply their local knowledge and together improve solid waste delivery.

2.6.6 Weaknesses in PSI in SWC

Although many benefits of the PS have been outlined above, the PS is also faced with some weaknesses/challenges. These weaknesses have been outlined below.

Firstly, when the PS is in charge of service provision, poor people are often neglected and left with no access to any service. the community, especially poor people are neglected and only seen as beneficiaries of an intervention and their views are not incorporated into the activities of the PS (Anderson, 2011). Most of these poor people do not have access to services because of their inability to pay. And since the private sector is profit oriented rather than concerned about equity issues, the poor are mostly left without any services leading to outbreaks of diseases, reduced productivity and deepening of poverty.

Also, unstable finances is also a major weakness/challenge that faces PSI in SWC. As a result of the human face attached to service and the issue of public goods, most PS companies are unable to recover cost because most poor people are unable to pay for services rendered, hindering the PS from meeting its cost of production leading to financial deficits and unstable finances (Oduro-Kwarteng, 2011).

Moreover, the risk monopolizing services is also one of the disadvantages in PSP as opined by Coad (2005). Lastly, the PS is also noted for bribing authorities who monitor their work so they do not publish bad news or so they ignore their inefficiencies so as to aid them escape sanctions. (UN Habitat, 2010). These do not augur well for development especially in the provision of SWC services which is directly linked to the health of citizens and to the environment.

Inferring from the above, it is noticeable that although the PS has more benefits as compared to the public sector including innovation, efficient in management of a facility, financial access and expertise in technologies, it also has its weaknesses as outlined above.

2.6.7 Obstacles to PSP in SWC

The PS is faced with several problems that hinder their performance according to the desired level. Notable among these problems is sustainable sources of funds, lack of political and regulatory backing coupled with low cost recovery (Oduro-Kwarteng, 2011). The main challenges that confront PSP in SMW has been outlined to include lack of enforcement of policies and regulatory framework, inadequate finances, political interference, weak institutional capacity of the public sector to play a supervisory role and ineffective monitoring of the private sector companies (Karanja, 2005), (Mwesigye, Mbogoma, et al., 2009), (Kassim, 2009).

Inadequate Finances: The PS is unable to recover cost due to unwillingness of users to pay for services rendered and the delay in payment of subsidies for service provision in public container areas. This hinders the PS' ability to acquire loans and long term funding to operate according to expectation and to provide the required service in SWM.

Politics: Most of the time the tendering process involved in selecting a private firm to provide SWM services is largely influenced by political favouritism or by the government in power. This results in incompetence since companies are not contracted based on merit.

Absence and/or Lack of Enforcement of Regulatory Frameworks: A major obstacle to PSP in SWM is mostly the absence and/or non-enforcement of regulatory frameworks which mostly encompasses regulation, procedures and clear definition of roles of partners involved in the partnership arrangement.

Proper regulations should be in place to create an enabling environment for the operation of the PS. In Ghana, the Criminal Code of Ghana (1960), Act 29, has been the paramount legislation in SWM until the 1990s when other laws and regulations were brought to light. The Code stipulates that "any individual or group that disposes waste on the street, open space, yard, etc. other than locations set aside by municipal authorities for such purpose commits an offence and is subject to punishment.'' The Environmental Sanitation Policy of Ghana also spells out the roles of all stakeholders in the SWM sector to ensure a proper SWM. Other regulations that accompanied the Code at a later date include the National Building Regulations, 1996 (LI 1630) which instructs house owners in localities, commercial, residential and industries to provide user facilities in their premises for waste disposal. It stipulates further that, each unit of apartment acquires a standard waste bin acceptable by municipalities for temporary storage of waste. Later in 1999, various municipalities enacted their own bye-laws relating to SWM which are still applicable today. The major restraint however is the lack of enforcement of all these laws associated with SWM. Municipalities are however urged to ensure that these regulations are enforced to ensure improved quality of solid waste delivery.

Other obstacles points to the fact that some citizens do not agree with contracting the services of the PS in solid waste activities because they have the notion that SWC must be provided at no cost to citizens but rather be funded using taxes charged on people's wages. Furthermore, low fees charged and government subsidies that are not paid on time hinder the PS to break even (Alakinde, 2012). Mostly, local authorities fix fees or tariffs without informing the PS, hence cost recovery becomes a paradox. It should be realized that the potential of the PS to develop in terms of expanding capacity and providing better service quality is highly dependent on the ability to attain cost recovery through the payment of user fees and payment by local authorities on services rendered at public container sites.

Another challenge is the accessibility to service areas. Most cities in the developing world, especially low income areas do not have access routes making it difficult for garbage removal

and lifting which subsequently leads to piling up of solid waste in many urban areas (Oduro-Kwarteng, 2011). According to Coad (2005), unclear contracts and delay in payments of subsidies also hinder the PS in delivering services according to the desired level.

Other authors also argue that the lax attitudes of people towards indiscriminate disposal of solid waste, perceptions of citizens towards SWM as well as lack of awareness of their roles in SWM also hinder the private sector from delivering SWC services at the desired quality (Fei-Baffoe, Atta Nyankson, et al., 2014), (Kaseva and Mbuligwe, 2005), (Odonkor, E., 2015). Still other authors also opine that the low capacity of the equipment used by the PS as well as weak inter-organizational arrangements coupled with incompetent human resource of the PS also accounts for low performance of the PS (Karanja, 2005), (Oduro-Kwarteng, 2011).

Inferring from the arguments outlined above, it can be said that the major obstacles to PSP in SWM are mainly comprised of inadequate finances, low cost recovery, inaccessible areas, unclear contracts, delay in payments of subsidies, political meddling, absence and/or lack of enforcement of policies and legal and regulatory framework, lack of a clear defined set of rules, ineffective monitoring of the private sector companies and poor attitudes of people towards privatization in SWM. For SWC to be carried out according to the desired level, local governments should pay attention to fundamental issues relating to management structures, contracting procedures and cost recovery.

The obstacles faced by the PS outlined above require proper governance mechanisms and inter-organizational arrangements to overcome these obstacles and thus pave way for the PS to deliver services according to the desired quality. The concept of governance as well as principles of good governance and the enabling environment to be created by government to support the PS in achieving a desired quality is therefore discussed in this section.

2.7 The Concept of Governance

According to the Asian Development Bank, governance is referred to as the superiority of the institutions to make, implement and enforce sound policies in an efficient, effective, equitable and inclusive manner. Governance does not only involve the state, it also includes the private sector and civil society organizations. Governance refers to the development of governing styles in which boundaries between and within public and private sectors have become blurred. The essence of governance is its focus on mechanisms that do not rest on recourse to the authority and sanctions of government. Governance is about the potential for contracting, franchising and new forms of regulation (Debiel and Terlinden, 2005). In network governance, "governance refers to the horizontal interactions by which various public and private actors at various levels of government coordinate their interdependencies in order to realize public policies and deliver public services'' (Klijn and Koppenjan, 2012).

Governance in SWC and management involves the enactment of acts, laws, policies, and regulations. It also involves institutional arrangements such as how to enforce the policies and the administration of these laws including top governance structures which include how to empower staff to deal with defaulters of solid waste laws and regulations. SWM policies and laws makes solid waste planning possible and creates an enabling environment for the PS to thrive. Laws and acts on SWM makes it possible for management plans, licensing, monitoring of implementation and compliance combined with targets to be incorporated in the SWM system for an effective SWM. The greatest challenge in governance in SWM in developing countries is the lack of law enforcement which encourages people to engage in illegal dumping/indiscriminate disposal of solid waste.

2.7.1 The Principles of Good Governance for Successful PSP in Service Provision

There are four principles of good governance namely, competition, transparency, accountability and rule of law (Cointreau-Levine and Coad, 2000). These are needed to ensure that tendering processes are organized devoid of corruption whilst ensuring that the PS delivers services according to what exists in the contract (UN Habitat, 2010). The involvement of the PS in SWC denotes a transfer of some roles to the PS whilst public organizations play a regulatory role. To create the enabling environment for the PS to successfully carry out their duties, there should be in place competitive bidding, technical and organizational capacity, regulatory instruments and monitoring and control mechanisms. The principles are explained in detail below:

Competition: There should be competition among different PS organizations to provide an assessment criterion in measuring the performance of the PS. Competition also keeps PS organizations on their toes so they can perform up to the task for fear of losing their position to their counterparts. Competition in the tendering process also promotes a fair play and treatment for all the companies involved in the tendering process to ensure that the competent company is awarded the project.

Accountability holds PS companies responsible to provide services according to contract terms and according to the desired level. Accountability is required to improve service delivery. The issue of accountability in service delivery came about with the advent of the World Development Report, 2004 which outlined that unsuccessful accountability issues were responsible for failures in service delivery (Joshi and Ahmed, 2016). Accountability comprises developing standards and penalizing sub-standard performance which when well employed will result in improvement in delivering services (Joshi and Ahmed, 2016).

Transparency ensures that the process of tendering and service delivery is made open for onlookers to observe. It puts service providers on their toes since their reputation may be at stake for non-performance. Transparency curbs corruption and improves delivery of service (Joshi and Ahmed, 2016).

Rule of Law: All stakeholders including local governments, PS organisations and service users are all obligated to ensure that the SWC is delivered according to the desired quality. Each one should know their roles and carry them out as stipulated in the laws and policies of the country. Local governments must enact and enforce bye-laws in the proper way that should be done, making the process of law enactment and enforcement transparent for each person to be clear of what their roles are. The four principles of good governance are interconnected and imperative as pre-conditions for SWC by the private sector to be effective and to produce the desired quality. Being transparent when it comes to tender procedures makes room for increased stakeholder participation, ensures ownership, belongingness and legitimacy in decision making which consequently leads to effective management of solid waste activities and eventually leads to an improved quality of service delivery. The role of local governments in ensuring improved quality of SWC delivery is very imperative. Tender procedures must be transparent to ensure that contracts are given to competent contractors who can deliver according to the desired quality. Tender processes must be transparent, non-discriminatory and neutral.

2.8 The Role of Government in PSP in SWM

The role of local governments in SWM is very crucial to ensure a successful PSI in SWC. Local governments are to ensure that they monitor the activities of PS organizations so as to guarantee quality of service. Local governments are also to put in mechanisms to ensure that the PS recovers cost by enforcing payment of user fees by users and by paying the PS on time

for the management of public containers in order to ensure continuity of improved service delivery (Oduro-Kwarteng, 2011). During tendering and awards of contracts, local governments should guarantee transparency and competitiveness. Local governments are also responsible for protecting citizens' rights of receiving access to SWC services. They do so by monitoring the activities of the private sector to ensure that services are made accessible to citizens (Karanja, 2005). Local governments should ensure that the appropriate laws, regulations and policies are in place to provide a legal basis and support for PS activities in SWC.

2.8.1 Principal-Agent Theory

The principal-agent theory observes relationships in organizations as a strain between the 'principal', that is, the service authority or government and the 'agent', that is, service provider or the private sector (Batley, 1996), (Oduro-Kwarteng, 2011). The service authority and service provider both have a degree of independence as well as their individual interests. It is very likely for the principal to assume a controlling position over the agent depending on how the agent performs and the extent to which the principal provides incentives to the agent as well as how well their interests merge. In practice, during contracts between service authorities and service providers, the service authority spells out its demands clearly and provides the necessary enabling environment that will aid the service provider to provide services at the desired level. This will mean spelling out the various roles and responsibilities of each stakeholder within existing regulations. This assertion is reinforced by Oduro Kwarteng (2011) that the relationship between PS waste contractors and service authorities guided by existing regulations in SWC cannot be underestimated; emphasizing that regulation and its enforcement are important in an effort to attaining quality of service delivery in SWC. Although this is imperative for an effective SWC system, most municipalities in Africa, do not set out clear policies or regulations that roll out roles and responsibilities that exists resulting in using personal discretion, intuition and manipulation in SWM services which according to researchers negatively affects quality of service in SWC.

2.8.2 The Governance Model of SWM

The governance model suggests the use of polices, regulations and laws, institutional capacities and financial mechanisms to ensure improved performance in SWC by the PS. These mechanisms are needed to create the enabling environment for the PS to be able to deliver services according to the desired level. PSI in SWC in itself is not a guarantee of efficiency unless the government plays its crucial roles of management and regulation and creates the enabling environment (Batley, 1996), (Karanja, 2005). An effective SWC system is backed by policies, rules and regulations, institutional capacities and financial mechanisms which are meant to create the enabling environment for the private sector to be able to deliver services according to the desired level (UNEP, 2009). These are discussed in detail below.

Policies: Before being implemented, policies are mostly used as regulatory instruments beforehand. Policies are also referred to as commands which specify the standards set for the PS or any organization to follow; and control which also stipulates market-based instruments, which can be a source of incentives and disincentives to PS organizations. Local policies are mostly adapted to suit national policies whilst taking into consideration the differing local conditions (UNEP, 2009).

Institutions: Municipalities have traditionally been responsible for SWC in most developing countries. The increasing generation of solid waste however necessitated the involvement of the PS in SWM service provision. As a result of this shift in roles, local governments have assumed a regulatory position to see to it that the PS delivers services according to the desired

level (UNEP, 2009). Capacities of local government staff should therefore be built to assume this new responsibility of monitoring the activities of the private sector.

Legal and Regulatory Framework: Service provision by private sector requires adequate procedures and regulations guided by contract agreement and in the broader interest of users (Gerlach and Franceys, 2010). Private sector involvement in SWC requires institutions to prepare binding agreements to monitor and enforce related regulations. Performance monitoring is considered essential for efficiency in contracting SWC services; this ensures that private sector delivers on agreed level of service (Oduro Kwarteng, 2011). In Ghana, MLGRD regulation of (1999) and relevant laws such as the Local Government Act allows municipalities to award SWC contracts to private sector companies transparently through competitive bidding whereas the National Procurement Act (2003) makes it obligatory for municipal Tender Boards to use competitive bidding in the selection of companies, devoid of any political influence. It stipulates that selection processes should be fair and based on merit. Under the agreements, private partners are expected to invest resources such as financial, human and suitable technologies to attain efficiency. The Public Procurement Act (2003) could be interpreted to mean that, in tendering processes, municipal authorities should ensure that a well-organized and adequately resourced private company is awarded SWC contract competitively to bring to bear needed resources and competence. According to Oduro Kwarteng (2011) PSI in SWC services is to enhance quality of service delivery and protect public health; however, problems such as transparency in contracting, monitoring, policy regulation and implementation are encountered. He asserts further that, clear and transparent contract agreements, adherence to and transparency in contracts processes, service quality, performance and compliance of rules and regulations are essential for a successful PSI in SWC service delivery.

Financial Mechanisms: Having assumed the role of coordination, local governments are to ensure that the PS activities are financially sustainable and services are rendered according to the desired level by incorporating solid waste activities in their annual and quarterly budgets and by ensuring that subsidies are paid at the appropriate time (UNEP, 2009).

User Charges: The means through which the PS generates its revenue or get paid for the services rendered is through user charges. Local governments should therefore ensure that fees are fixed at the level where the private sector will able to recover cost. Fee fixing should be done by involving all stakeholders especially service users so as to guarantee willingness to pay for services.

Penalties, Fines and Levies: Local governments are to put measures in place to ensure that defaulters of waste bye-laws and payment of user fees as well as those who engage in indiscriminate dumping are prosecuted.

Environmental Fund: In Ghana, citizens are charged some levies called environmental levy to help in carrying out SWM activities. The Polluter-Pays Principle is also a form of policy used to recover cost from SWC. Some people however refuse to pay and therefore there should be measures to enforce payment.

International Cooperation: Local governments in developing countries create relationships and partnerships with international bodies to solicit for funds to support SWM activities (UNEP, 2009). Examples of such aids comes from the World Bank, DANIDA and UN Habitat.

In many cases, local governments are responsible for ensuring that appropriate equipment are used to carry out SWM activities. These equipment include vehicles, compactors, containers and bins for collection, treatment facilities, incinerators and engineered landfill sites. These technologies for SWM activities are outlined below.

Recycling and Recovery: Recycling and recovery are not practised extensively in Ghana. Only a few private organizations engage in it. Local governments should ensure that recycling and recovery means are put in place and households are encouraged to separate solid waste at source to reduce the amount of solid waste that goes to the landfill sites and to serve as incentives for the PS to effectively perform. Laws backing recycling and recovery should be enacted to give it a legal backing and to prosecute defaulters especially when it comes to sorting waste at source. Incineration could be considered as a means to derive extra energy to supplement electricity produced in the country and to help in solving the power crises faced by Ghana.

The implication of what has been argued so far concerning government models is that mechanisms such as polices, regulation, institutional capacity, financial instruments and required and appropriate infrastructure, should be put in place to ensure that the PS achieves performance and delivers services according to the desired level.

2.9 Theory of Enabling Environment in Service Delivery

Government enabling environment as defined by UNDP (2008) refers to elements at the national or local level that enables or hinders the advancement of capacities. This enabling environment come in the form of policies, rules and norms, priorities and modes of operation. They either create incentives for performance or create disincentives or constraints that mar performance. In SWM, government enabling environment include the availability of policies and legal and regulatory frameworks, political will and commitment to enhance the process of development. Central and local governments have an essential obligation to ensure effective delivery of solid waste services. They must create the enabling environment for policy and legal and regulatory frameworks to operate effectively in order to ensure that the required level of service quality and accessibility is created through service provision by the PS (Gidman, Blore, et al., 1999). In this thesis, government enabling environment is defined as policies, legal and regulatory framework and institutional capacities available to enable the performance of the private sector in SWC.

2.9.1 Government Enabling Environment to Stimulate PSI in SWC

To ensure an effective PSP in SWC, local governments have to create an enabling environment to enable the PS to operate. The possibility of the PS to thrive and meet its obligation is highly dependent on the extent to which an enabling environment is put in place and maintained by local authorities in order to deliver the necessary motivations for enhanced service delivery (OECD, 2000). After critical review of the concept of PSI in SWC, it is necessary to consider components of enabling environment (institutional capacity, policies, regulation) that impacts positively or negatively on the performance of the PS. Proper monitoring of contracts was identified by Oduro Kwarteng (2011), as one of the means through which local governments can enhance PS performance. Kassim (2009), mentioned that to ensure continuity in the operation of the PS, government must provide the platform that guarantees the continuous existence and improvement in performance of the PS. Governments must also create favourable working conditions between the service authority and service provider as well as the PS showing commitment in service provision. To argue further, the PS requires adequate financial, human and technological assets and knowhow to be able to perform. To complement this, unflinching backing such as legislation and regulatory framework, clear contractual agreements and enforcement of environmental regulation to curb indiscriminate disposal by citizens is required from the government to ensure performance (Kassim, 2009). Below are a number of tools to be used to create an enabling environment for PS performance.

Policy and Regulatory framework
There should be regulations in place to ensure that the PS is shielded from price fluctuations, inflation and political instabilities (Joseph et al., 2007). There often exists poor regulatory processes and non-compliance to contracts from both parties which mostly result in low cost recovery and poor service quality. These poor regulatory processes mostly result in prolonged periods in increasing fees (fee fixing resolution) and delays in payment of government subsidy which affect the capacity of the PS in investing in equipment and subsequently reduces the quality of service delivered (Oduro-Kwarteng, 2011).

Institutional Capacities and Legislation
The existence of legislation and the extent of enforcement make up institutions. Legislation should be supported by citizens and the PS for it to be effective. Officials responsible for law enforcements regarding solid waste should be motivated to carry out their duties well. Sanctions should also be put in place and enforced to provide the basis for defaulters to be punished (UN-HABITAT, 2010).

Proper Technologies
It is imperative that SWC technologies for collecting, transporting and treatment be designed according to the needs of the local context and the composition of the waste (Shekdar, 2009). Also, the use of appropriate engineered landfill technologies must be adopted to prevent causing harm to the environment.

Financial Mechanisms
The major sources of funds for SWM activities are user charges/fees (Joseph et al., 2007). Adequate resources must be available to enable the government undertake monitoring of the activities of the PS and impose fines on defaulters for flouting the rules of engagement. Ezebilo and Animasaun (2012), argue that to make PSI effective in SWC, certain incentives must be put in place to reduce the huge expenses faced by the PS. Local authorities can also educate citizens on the need to pay fees for services rendered in order to keep the PS in business and to enable them render services of best quality.

Capacity Building
Sound PS operation demands government and PS companies' capacities to be built in the area of administration and technical operations to ensure proper operation and maintenance and effective monitoring systems (USAID, 2009). Policies, regulatory frameworks, laws, financial instruments and appropriate technology and infrastructure as well as a clear definition of roles of all stakeholders are mechanisms that are mostly used in management models to ensure that the PS is equipped to perform.

From the literature reviewed so far, the basis for this research is that even when the PS is fully equipped to render services, they are only capable of achieving high performance when there is strong policy backing, regulation and strict adherence to formal rules and contractual requirements.

2.10 Quality of Service

Quality of Service measures the extent to which the level of a particular service delivered meets the expectations of customers, that is, comparing the anticipations of customers to the actual performance of the service (Parasuraman, Zeithaml, et al., 1985). In other words, it refers to the level of service that customers expect to receive. In general, the efficiency or success of a particular service is measured using the quality of service as a parameter/indicator. Measuring the efficiency of a service requires that services are rendered to the satisfaction of customers and devoid of every adverse effects. It measures how adequate the provision of a service is and

the perceptions of citizens. The current research will employ quality of service as a parameter to measure the performance of SWC delivery by the PS.

2.10.1 Quality of Service of SWC by the PS

SWM in low income countries is confronted with a lot of challenges that hinder its performance. For a SWM system to perform, it has to be sound and satisfactory in terms of its environmental, financial and social impacts (Oduro-Kwarteng, 2011). SWM should not result in pollution of the environment; it should not affect the health of the population and should benefit all citizens whether they are capable of paying for the service or not (Oduro-Kwarteng, 2011). The following are some criteria used to measure the performance of the private sector.

Cleanliness of Service Areas

Measuring cleanliness posits that areas around communal containers and kerbsides are kept clean, devoid of any littering and containers are lifted at the stipulated times. Oduro Kwarteng (2011), asserts that irregular emptying of containers stimulates citizens to engage in indiscriminate dumping of refuse which consequently has serious implications for the environment. The same argument is shared by Asnani and Zurbrugg (2008). Cleanliness also means that people's refuse is collected from their homes frequently to avoid piling up or spilling of solid waste which is usually the norm in developing countries, especially in Africa where collection of solid waste from homes by the PS is mostly erratic and of low quality (Oduro-Kwarteng, 2011).

Frequency of Collection

The frequency of SWC is an important parameter in SWM and is measured according to the number of times per week/day that solid waste is collected either from a container site or from a dwelling (UN Habitat, 2010). The ideal frequency for collection of containers from a site is once a week or as often as the container gets full whilst it is twice per week for household collection (UN Habitat, 2010). When collection is done at the postulated times, it prevents refuse from piling and spilling.

Types of Equipment Used in Solid Waste Collection

The availability and appropriateness of equipment is very essential to enable the private sector perform according to the desired level. Vehicles that are used to collect solid waste should be adequate and appropriate for the local condition to ensure effective service provision. The presence of these equipment will also enable the PS to extend service to places with little or no access to SWC services (Kassim, 2009). Equipment used in SWC and transportation in developing countries has improved overtime with a shift from wheel barrows and animals-drawn carts to advanced equipment such as skip loaders and compactors. These equipment should be used in such a way that they do not cause harm to human health or the environment in the process of SWC and transportation (Obiri-Opareh and Post, 2002). According to the International Labour Organization, most of these equipment that are shipped into developing countries are not designed properly and are unsuitable for the local contexts in terms of the composition of the waste that is generated and the level of knowledge to operate the equipment (ILO, 2002). Due to the lack of expertise to operate these equipment and the heavy costs associated with their maintenance, they mostly break down and this has serious consequences for the performance of the PS since they are not able to collect the waste without any equipment support. Also, most of the equipment used by the PS are either overaged or deteriorated and are not able to perform. Lastly, in the process of collecting and transporting waste, the compactors/vehicle are mostly left uncovered and hence contribute heavily to air pollution and littering.

Cost Recovery
Cost recovery is a very essential parameter used to measure the performance of the PS (Kassim, 2009). Kassim (2009), further argues that the continuous operation and existence of the PS is highly dependent on the recovery of operational costs which is accrued from payments made by service recipients. SWC financed by fees paid by households is recently being used in many low income countries; however, a study conducted in Tanzania indicates that user charges paid by households does not cover the cost incurred by the PS. The main explanation to that phenomenon was found to be low awareness of the citizens to pay fees and lack of enforcement of regulations and bye-laws by local authorities.

Human Resource Capacity of Private Sector
The capacity of the PS is very important in order to achieve performance. It is believed that the PS has the expertise and capacity to handle SWC. The availability of competent human resource and expertise is imperative for the PS to continuously operate (Oduro-Kwarteng, 2011). SWC activities are human intensive and therefore requires huge number of competent labour to carry out this herculean task.

Willingness to Pay for User Fees
Assessing PSI in SWC is also done by testing households' willingness and ability to pay for services rendered. Users are willing to pay for a service when they are satisfied with the services being rendered to them (USAID, 2009). One means of determining which categories of services to be provided to satisfy customers is through a survey of willingness to pay among service users (UN-HABITAT, 2010).

Solid Waste Awareness Creation
The SWC system can also be impacted by user's attitude towards waste. It is therefore essential that users are sensitized on how to view waste, handle waste and how to keep the environment clean. To encourage service users to separate solid waste at source, avoid indiscriminate dumping of refuse and to pay fees for services rendered, they have to be sensitized and educated. When citizens are sensitized they can offer land that can be used as an engineered landfill site. In sum, the success or failure of a SWC system is highly dependent on awareness and attitudes of citizens (Mwesigye, Mbogoma, et al., 2009), (Klundert and Anschütz, 1999).

The factors discovered include private sector capacity (human resources and technological equipment) and government enabling environment (policies, legal and regulatory framework, institutional capacity of the private sector, tender procedures, political will) and their implications for quality of solid waste collection. The next section comprises concepts derived from the above literature review, focus and conceptual framework for the current research.

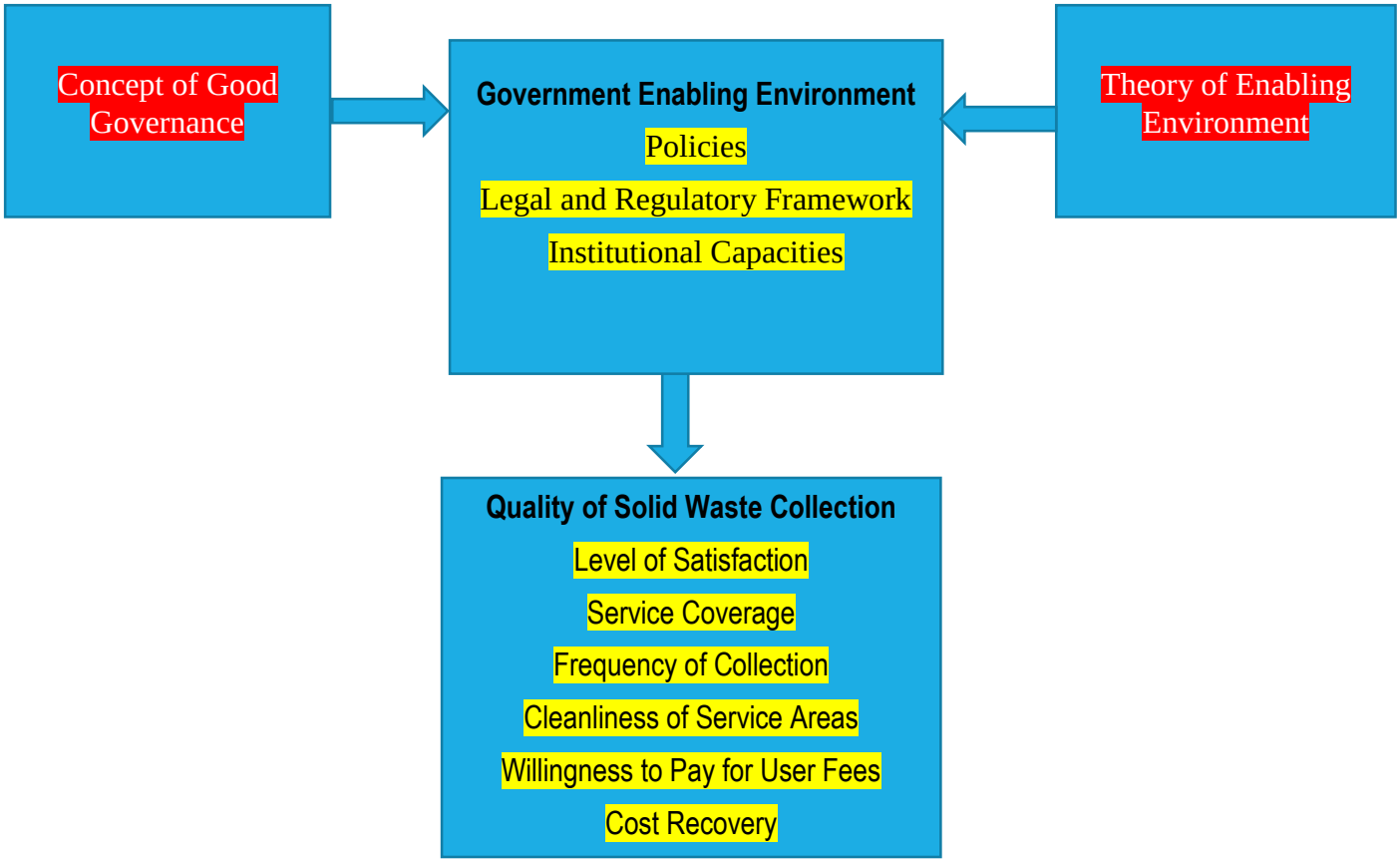
2.11 Conceptual Framework

As defined by Maxwell (2012, pg.14), "the conceptual framework is a system of concepts, assumptions, expectations, beliefs, and theories that supports and informs a research". Thus, the conceptual framework is a formulation of a tentative theory of what is occurring and why. The conceptual framework in Figure 1 below summarizes literature review of theories and concepts on the influence of government enabling environment on the quality of SWC services rendered by the PS. The concept of good governance and the theory of government enabling environment were elaborated. The independent variable 'government enabling environment' was derived from the concept of good governance and the theory of enabling environment. The dependent variable 'quality of solid waste collection was derived from the concept of quality of service as discussed above. It is believed that the practise of good governance encompassing transparency, accountability, rule of law as well as the adherence to the theory of enabling

environment (policies, legal and regulatory framework, institutional capacities) will enable the government to create the necessary conditions needed for the private sector to deliver proper quality of services which is spelt out as level of satisfaction of solid waste collection, service coverage, cleanliness of service areas, methods of disposal and cost recovery.

The theoretical framework shows the relationship between the independent variable, government enabling environment (policies, legal and regulatory framework as well as institutional capacity of the public sector) and performance of the service providers, the dependent variable. It is expected that the government enabling environment will create changes in the quality of service of SWC delivered by the private companies, in that both cities have the same private sector and are both delivering services to meet the requirements of the Environmental Sanitation Policy. The figure indicates that an enabling environment created by the government influences the quality of service provided by the PS. Literature was reviewed on the obstacles inhibiting the private sector in meeting service requirements. These obstacles have been attributed to many factors. It is believed that these obstacles are connected to the extent to which the private sector is governed and can be overcome when the necessary measures are put in place.

Figure 1: Conceptual Framework



Source: Author's Construct, 2016.

Chapter 3: Research Design and Methods

3.1 Introduction

This chapter outlines the methods used in this research. It begins with the operationalization of concepts in the conceptual framework into variables and indicators, indicates the sample size and sampling techniques used. The methods used in collecting and analyzing data are also outlined in this chapter.

3.2 Operationalization of Variables and Indicators

Operationalization is defined as the comprehensive narrative of the study processes needed to allot units of analysis to the categories of a variable so as to signify theoretical properties (Singleton and Straits, 2009). Operationalization is done to translate the complex concepts of the study into measureable indicators.

3.2.1 Definition of Concepts

Government Enabling Environment

Government enabling environment refers to elements at the national or local level that enables or hinders the advancement of capacities (UNDP, 2008). This enabling environment comes in the form of policies, rules and norms, priorities and modes of operation. They either create incentives for performance or create disincentives or constraints that mar performance. In solid waste management, government enabling environment include the availability of policies and legal and regulatory frameworks, institutional capacities and political will and commitment to enhance the process of development. Central and local governments have an essential obligation to ensure effective delivery of solid waste services. They must create the enabling environment for policy and legal and regulatory frameworks to operate effectively in order to ensure that the required level of service quality and accessibility is created. In this thesis, government enabling environment is defined as policies, legal and regulatory framework and institutional capacities of the public sector available to enable the performance of the private sector in SWC.

Quality of Service

Quality of Service measures the extent to which the level of a particular service delivered meets the expectations of customers, that is, comparing the anticipations of customers to the actual performance of the service (Parasuraman, Zeithaml, et al., 1985). It is a measure of effectiveness. In general, the efficiency or success of a particular service is measured using the quality of service as a parameter. Regarding solid waste collection, the basic quality of service is the removal of waste from a dwelling area at least once per week, in a safe and healthy manner. Quality of service for this thesis is operationalized as environmental cleanliness, methods of disposal, cost recovery, service coverage and accessibility.

Table 1: Operationalization of Variables and Indicators

Concepts	Variables	Indicators
Government Enabling Environment	Policies	Existence of SWM Policies Number of Policies Approved and Enforced
	Legal and Regulatory Framework	Existence of Environmental bye-laws Number of Sanctions/Penalties Extent of Law Enforcement Enforcement of Payment of User Fees
	Institutional Capacity	Transparency of tender procedures Number of monitoring conducted on private sector activities and individual solid waste disposal behaviour Number of Monitoring Reports Number of Environmental Sanitation Education Organized Number of training sessions conducted for both public and private sector Number of meetings held with private companies Stakeholder Participation in fixing of user charges Frequency of tariff review Extent of Fulfilment of part of contract
Quality of Solid Waste Delivery	Cleanliness of Service Area	Litter-free Environment around houses and public container areas Quantity of Solid waste collected as against uncollected
	Frequency of collection of waste	Number of times of solid waste collection in a week
	Service coverage	Percentage of population reached by service Quantity of Solid waste collected as against uncollected
	Methods of Disposal	Open dump/Sanitary landfill

	Cost Recovery	Frequency of payment of user fees Willingness to pay Affordability of Service

Source: Author's Construct, 2016

3.4 Research Strategy

The study employed a multiple case study research strategy comparing the performance of the SWM system in two municipalities, Madina and Adenta, established in the same year and having a similar SWM system and the same private sector companies but differences in performance levels to discover if the performance of the PS in both cases is due to the available government enabling environment. The two cases were selected because of the similarities in the year of establishment and the operation of the same private sector companies in the two cases. They were made comparable because they are both urbanizing and facing the challenges associated with urbanization. The proximity of these two cities to the country's capital, Accra was also taken into consideration before the choice was made.

Case study, according to Yin (2009), is defined as an empirical investigation into an existing situation in its actual setting, particularly in a case where the borders between the situation and its context are not explicitly manifest. Yin (2009), emphasizes the fact that case studies allow researchers to acquire the meaningful features of actual occurrences such as organizational and administrative procedures in its entirety. This investigation of the specific situation can be done using a variety of data sources and could include a variety of methods such as interviews, observation, questionnaires and document analysis (Darke, Shanks, et al., 1998). A case study "is an in-depth analysis of persons, events, decisions, periods, projects, policies, institutions, or other systems in a holistic way in order to understand or explain certain phenomena," (Gschwend and Schimmelfennig, 2011). A case study is mainly advantageous in situations where a detailed understanding to the explanation of a certain occurrence is needed and in the identification of situations that are rich in information (Noor, 2008). In order to study the cases of Adenta and Madina, an explanatory case study (De Vaus, 2001) was adopted to understand and explain the issue under investigation, providing the opportunity to ask penetrating questions and to capture the richness of the influence of government enabling environment on quality of SWC service delivery, but the inferences made were explicitly directed to the particular cases studied and may not be generalized (Gable, 1994).

A case study was chosen because the study focuses on answering the questions "how" and "why", to provide descriptions of a phenomena (Yin, 2009). As such, in-depth interviews with individuals of institutions to tap their experiences and the contexts of actions were crucial and justified the appropriateness for use of a case study research (Darke, Shanks, et al., 1998). The study is an explanatory one which intends to examine the influence of government enabling environment on quality of SWC by the private sector in Madina and Adenta. Cases of two areas, Adenta and Madina in two different municipalities was selected to represent part of a whole. Also, these cases were studied in-depth to explain SWC service quality by the private sector, highlighting the causal links between the study variables (Yin, 2009). It was impossible for the researcher to have a true picture of how government enabling environment influences SWC service quality without considering the context within which it occurs, that is, Adenta and Madina. The type of case study that was employed is a co-variational type (Blatter and Blume, 2008). This is because it shows the causal relationship that exists between the

independent variable (causal factors) which is government enabling environment and the dependent variable (causal effects) which is the quality of SWC.

The main limitation or challenge associated with the use of case study as a research strategy is the issue of external validity; that is, in case studies, it is particularly difficult to generalize results since the number of research units are small as well as the lack of statistical underpinning of the findings (Yin, 1994). Another challenge that is attributed to the choice of case studies is the issue of internal validity because of the use of the intuition of the researcher. This was however overcome by triangulation of sources, that is the use of different sources of data to measure the same thing. Acquiring the same results from different sources adds to the validity of the study (Van Thiel, 2007). Triangulation of methods was also applied to achieve internal validity, that is the use of different data collection methods (questionnaires, interviews, observations and secondary data sources). Lastly, the issue of reliability is also another challenge when it comes to employing case studies in a research. This is as a result of the open design and the different data collection methods (including informal ones) used in case studies. This was reduced by keeping a database of all data collected before data processing.

Sample Size and Selection

The research employed purposive sampling to interview government officials of the La-Nkwantanang Madina and Adenta Municipal Assemblies. These included the Municipal Co-ordinating Directors and four (4) staff from the Waste Management Department for both municipalities. In-depth interviews were used to acquire deeper knowledge into how enabling environment created influences the quality of service of solid waste collection. Two (2) top officials of two private companies were also interviewed to ascertain their view on how critical government enabling environment is in helping them to attain their objective of delivering services according to the desired level/quality. The choice of a purposive sampling was to gain insight into the research from a population that has relevant knowledge about the research. Simple random sampling was also used to sample households (users) from each of the cities to ascertain their views on the quality of SWC service received by the private sector. Structured questionnaires were used to solicit for the views of these users of the solid waste system.

Calculation of Sample Size for Households

The sample size was calculated using Sloven's Formula of determining sample size. The formula used is

$n = N / (1 + Ne^2)$ where n = Number of samples, N = Total population and e = Error of tolerance. The error of tolerance was 5% for this thesis. The population of Adenta and Madina according to projected figures based on the 2010 Population and Housing Census of Ghana are 97,054 and 91,711 respectively (PHC, 2010). Based on this formula therefore and the populations of the two cities, the sample size was:

For Adenta

$n = N / (1 + Ne^2)$

n = 97,054 / (1+97,054x0.05^2)

n = 244

For Madina

$n = N / (1 + Ne^2)$

n = 91,711 / (1+91,711x0.05^2)

n = 230

Based on the formula applied, 244 and 230 questionnaires were supposed to be administered for Adenta and Madina respectively. However, because of the limitation of time and other resources, the sample was reduced to 80 respondents for each of the two cities. The households were sampled randomly until the 80 respondents were achieved.

Table 2: Approach to Undertake Data Collection

Respondents	Sample Size	Sampling Technique	Source of Data	Research Instrument
Municipal Coordinating Directors (AdMa & LaNMMA)	2	Purposive	Primary/Secondary	Interview guide
Directors and Staff of Waste Management Departments (AdMa & LaNMMA)	4	Purposive	Primary/Secondary	Interview guide
Private Companies	4	Purposive	Primary/Secondary	Interview guide
Households	80 each	Random	Primary	Questionnaire/Observation

Source: Author's Construct, 2016

Validity and Reliability

Reliability is defined as the internal stability and consistency of a measurement instrument whilst validity is referred to as the extent to which the selected instruments measure the specific construct that is selected (McGoey, Cowan, et al., 2010). Other scholars on the other hand refer to validity as the extent to which a research measures what it truly strives to measure whilst reliability is the accuracy and consistency of a measurement process (Cooper and Schindler, 2014). Validity can be categorized into internal and external validity. External validity is the ability of the study to generalize its results to the larger population; internal validity on the other hand is the capability of a research instrument to measure what it intended to measure. In qualitative research, the possibility of interviewer bias can undermine the reliability of responses resulting in socially desirable responses. These biases result from the way in which questions are asked, or in the personal judgement of the interviewer. Achieving external validity in case studies is challenging as it is difficult to generalize results of studies to the entire population because cases are deliberately chosen to acquire in-depth knowledge of a phenomenon at the expense of generalizing results. In terms of reliability, methods used in selecting sample should be replicable at a different times using the same procedure, that is stability reliability. The research ensured validity by constructing interview guides and questionnaires based on operationalized concepts reviewed in literature. Triangulation of data (that is, obtaining data using both interview guides and questionnaires from different groups of respondents and secondary sources) was also done to ensure validity. Reliability was ensured

by employing multiple indicators in measuring same variables in the questionnaire. In addition, questionnaires were pretested to avoid ambiguity and to ensure that the content of the research was understood by respondents before the actual interview was conducted.

3.5 Data Collection Methods

This research used a mixed method of data collection, that is both qualitative and quantitative methods. Data was collected from both primary and secondary sources. The primary sources that were employed in this study were the use of interview guides, questionnaires and observation. Interview guides and questionnaires are outlined in Appendix 2 of this thesis. Questionnaires are instruments that contain closed-ended and/or open-ended questions used to solicit ideas from a sample. As already mentioned, questionnaires were used to collect data from households to ascertain their views on the quality of the SWC system. Interview guides were used to gather in-depth information from local government officials and the private sector who are the service providers. This gave a deeper understanding and insight into the extent to which government enabling environment affects quality of solid waste collection delivered by the private sector. The researcher also employed observation to validate responses generated from questionnaire administration by households. Observation happens when the researcher critically takes note of specific events in the study area during data collection. Secondary data review was also used as a source of information for this study. Finally, a review of secondary data was carried out for this research. Monitoring reports, articles, legal documents, minutes of meetings, published and unpublished literature were reviewed and adopted. Data obtained from these secondary sources incorporated SWM issues as well as the political, economic and institutional reasons for SWM and legal and policy documents backing these. Using different sources of data serves as a means of triangulation and the use of secondary data also complements primary data.

In-depth interviews were conducted with officials of the municipalities and private companies who were purposively selected. The interview guides purported for the municipalities included seeking information on tender procedures, type and description of service provided in the two municipalities, issues regarding monitoring as well as existing bye-laws and policies governing SWC. Concerns on payment of fees by the users, assessment of private sector delivery, support and initiatives by municipalities to support private sector and municipalities' obligations in SWM by private companies. Interview guide for the private sector sought to seek information on legislation, contract arrangements, awareness of current municipality bye-laws that guide SWC, tender processes and cost recovery. Data was also acquired on capacity of the private sector in terms of human resource and equipment, frequency of SWC and challenges faced.

Secondary sources that were used were contract documents, monitoring reports, bye-laws, minutes of meetings, journal articles from and books. Data from secondary sources such as contract documents, monitoring reports, bye-laws and minutes of meetings were collected from the local governments and private companies to complement the primary data and to ensure triangulation of data. Households, who are service users were also interviewed using structured questionnaires to solicit their views on the quality of the SWC system in both cities. Observations were also made to capture and record information which otherwise would not have been provided by households.

3.6 Data Analysis Methods

The critical scrutiny of data that is collected in order to appreciate its aspects and relationships and to ascertain its inclinations is referred to as data analysis. Both qualitative and quantitative methods were employed to analyze data collected for this study. In analyzing, qualitative data, proceeds from the interviews were transcribed. The post-interview analysis of transcripts included a detailed search for underlying themes in the evidence collected. The comprehensive areas that had been provided in the interview guide provided an initial framework from which the detailed transcript analysis proceeded (The interview guides were organized into themes based on the study's research questions and objectives). After transcribing data, further analysis was aided using Atlas Ti computer software. This involved coding all the interviews so that similar questions and responses could be grouped together (Code list attached in Appendix 2). This made triangulation easier.

With regards to quantitative analysis of the questionnaires administered, the researcher employed Ms Excel to analyze the data. Data analysis included first of all coding of variables, making entries of data in excel and analysis of data into graphs. Firstly, parameters used in questionnaire were coded by names and were labelled by description. Analysis was done to derive various percentages such as on issues of frequency of SWC and households' satisfaction of solid waste that is collected. Data were presented using graphs.

Chapter 4: Research Findings

4.1 Introduction

The current chapter outlines findings obtained from the field work conducted for this study. The chapter is introduced with a history of privatization of SWM in Ghana. It also gives an overview of how SWM is organized in the La Nkwantanang Madina and Adentan Municipalities. It further discusses privatization of solid waste in the two municipalities and the institutional arrangements involved. The chapter also presents findings on the enabling environment created by the municipalities as well as the quality of SWC delivered by the private sector. The chapter ends by showing the relationship between the presence of an enabling environment created by the government and the quality of solid waste delivered by the private sector.

4.2 History of Privatization of SWM in Ghana

Several strategies and approaches have been employed since time immemorial in Ghana in SWM especially in the collection and transportation, owing to different political administrations. In the early 1990s, the Government of Ghana entered into a partnership with the German Government to privatize SWM in the country by using the Accra Metropolitan Assembly as pilot. The pilot began with the experiment of collecting solid waste from households, industries and commercial areas using local private organisations. During the pilot, the door to door collection system was pioneered as the first ever to be carried out in the country.

Although the Metropolitan, Municipal and District Assemblies (MMDAs) were responsible for collecting solid waste of citizens, it was mostly done through the communal container system until the early 1990s when the door to door collection system was introduced through the pilot using privatized organizations. In Ghana, the Ministry of Local Government and Rural Development (MLGRD) has always been the organization wholly responsible for overseeing SWM in Ghana. The MLGRD oversees the MMDAs in carrying out SWM activities. Another national body, the Environmental Protection Agency (EPA) also undertakes a major part in SWM being the utmost authority in environmental protection and having been granted that power by the Ministry of Environment, Science and Technology. At the local level, the various MMDAs have the obligation to collect and dispose solid waste in an environmentally safe manner using the Waste Management Departments (WMDs) and employing the services of the private sector with guidance and oversight from the MLGRD.

This means that the MMDAs are obliged to supervise the PS in carrying out SWM duties to ensure a clean and healthy environment and populace. They are supposed to adhere to and enforce national regulations concerning SWM as well as set up new regulations for their various local municipalities. In Ghana, there are several Laws, Acts and Policy Frameworks that govern SWM activities. These are the Local Government Act (1994), Act 462, the Environmental Protection Agency Act (1994), Act 490, the Environmental Assessment Regulations (1999), LI 1652, the Environmental Sanitation Policy of Ghana (2010), the Guidelines for the Development and Management of Landfills in Ghana, the Criminal Code of Ghana (1960), Act 29 which tries and convicts people who willfully dispose of solid waste in an unlawful way and the Guidelines for Bio-medical Waste (2000). These regulations are incorporated in the National Environmental Sanitation Strategy and Action Plan (NESSAP) which is translated at the local level as District Environmental Sanitation Strategy and Action Plan (DESSAP) for MMDAs.

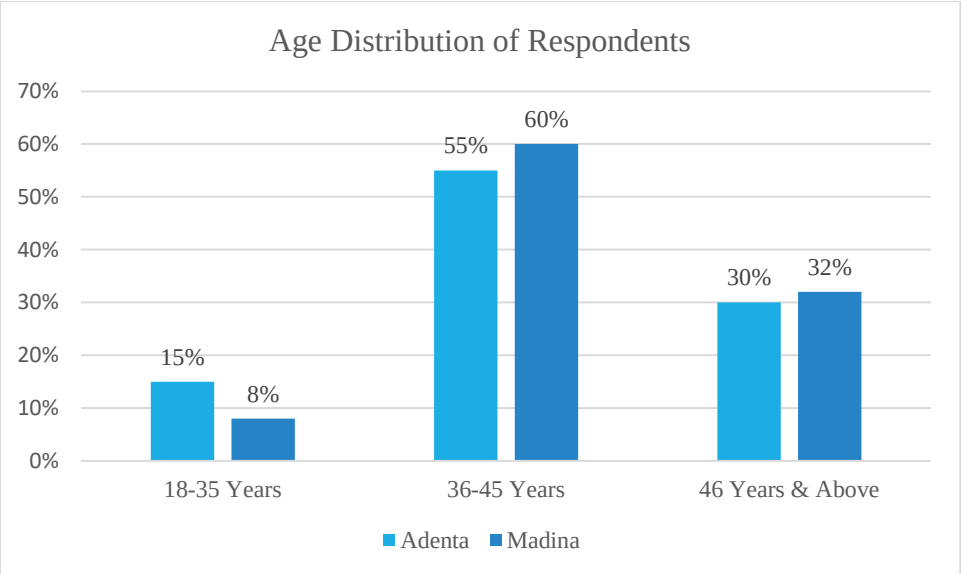
To ensure that SWM problems are dealt with and the PS performs efficiently, the 2010 Environmental Sanitation Policy (ESP) was put in place by the MLGRD in partnership with important stakeholders in the SWM sector. Principles of the ESP includes inspection and enforcement of sanitary regulations, monitoring the observance of environmental standards and environmental sanitation education (The Environmental Sanitation Policy of Ghana, 2010). The ESP also has 6 policy focus areas comprising information, education and communication, legislation and regulation, levels of service, sustainable financing and cost recovery and monitoring and evaluation (The Environmental Sanitation Policy of Ghana, 2010). The ESP obligates MMDAs, including Adenta and Madina to pass bye laws to regulate environmental issues as well as enable the prevention of all forms of pollution and unsanitary conditions within their authority (The Environmental Sanitation Policy of Ghana, 2010). Often times, there exists a gap between policy formulation and its implementation. Moreover, it is reported that the gap between SWM policy and actual practices are widening as a result of capacity constraints or lack of political will (Mwesigye, Mbogoma, et al., 2009).

In the ESP, the roles of the various actors have been spelt out to ensure that an improved quality of SWC is delivered. The major issue however is whether or not the actors can fulfil their roles as outlined in the policy.

4.3 Characteristics of Respondents

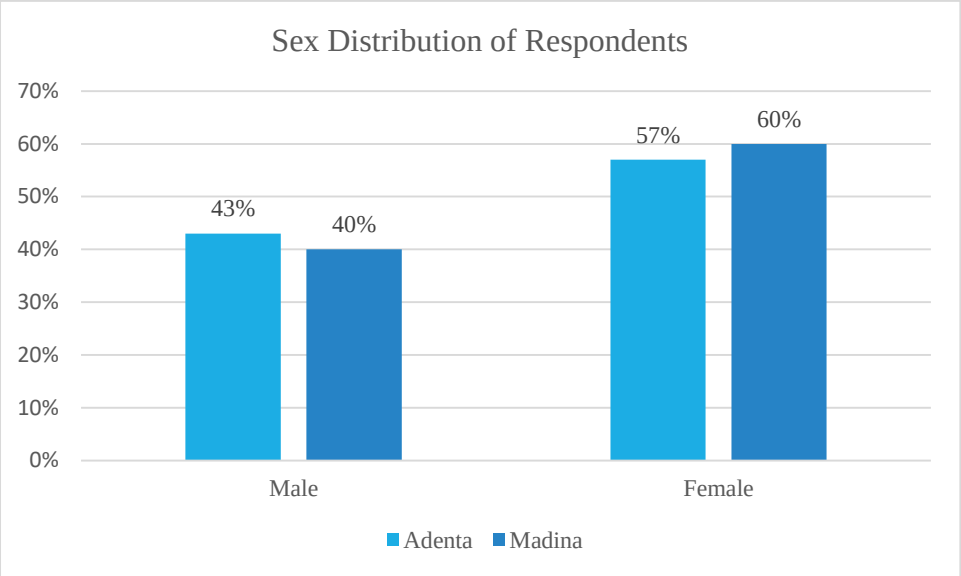
Ten respondents to semi-structured interviews were professionals in the area of study with in-depth knowledge about the topic that is being researched. There were officials of the two municipalities and the private sector companies selected who had in-depth knowledge of the subject matter. Respondents to the 80 questionnaires that were administered were classified according to age and sex. Charts 1 and 2 below present details on the respondents to the questionnaire.

Chart 1: Age Distribution of Respondents in Adenta and Madina



The figure above indicates that most of the respondents in both municipalities were between the ages of 36-45 years in both municipalities. This is an indication that the most of the e active/youthful population within the sample are involved in and concerned about SWM issues.

Chart 2: Sex Distribution of Respondents



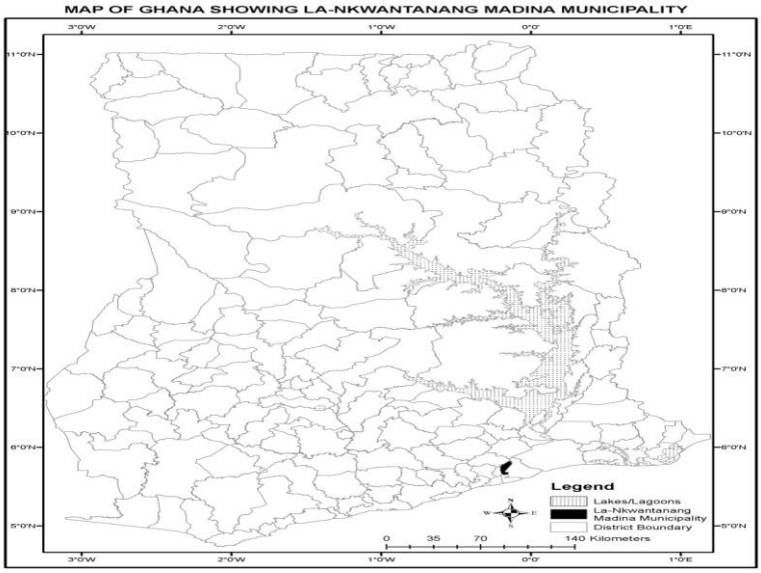
The results of this backs the notion that females are more interested in solid waste than males. Solid waste in developing countries is said to be of major concern to women than men (Asnani and Zurbrugg, 2008) and (Klundert and Anschütz, 1999)

4.4 Profile of the La Nkwantanang Madina and Adenta Municipalities

4.4.1 Profile of the La Nkwantanang Madina Municipality

The La Nkwantanang Madina Municipality is situated in the northern part of the Greater Accra Region in a predominantly commercial setting. It is one of the Municipalities in the Greater Accra Region and covers a land area of 74sq km. It is boarded on the west by the Ga East Municipal Assembly (GEMA), on the east by the Adentan Municipal Assembly (AdMA), the south by Accra Metropolitan Assembly (AMA) and the north by the Akwapim South District Assembly. The population of the Municipality is 111,926 according to the 2010 Population and Housing Census. The increase in population is primarily associated with increasing immigration into the municipality because of its central business district. The population is projected to be about 123,547 people in 2016.

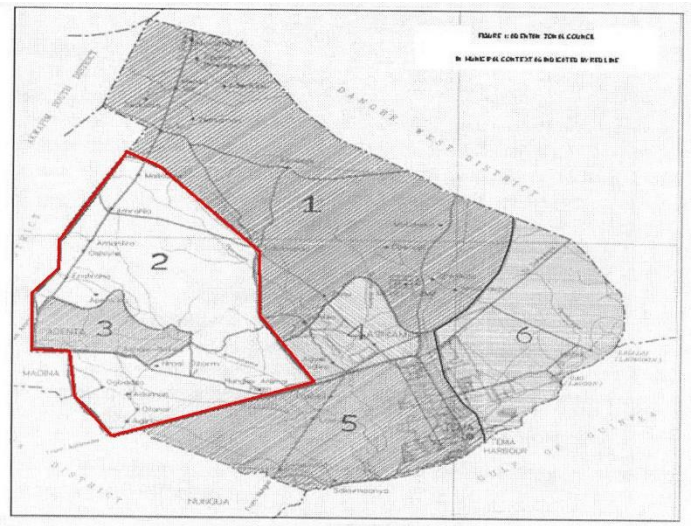
Map 1: Map of Ghana Showing Location of Madina



4.4.2 Profile of the Adentan Municipality

The Adentan Municipal Assembly (with Adentan as its Administrative capital and CBD) is located 10 kilometres Northeast of Accra, precisely on latitude 5" 43' North and latitude 0" 09' West. It is bounded by Tema Metropolitan Assembly (TMA) in the east, Ga East Municipal Assembly in the west, Oyibi Township (part of the TMA) in the north, and Madina a suburb of Ga East Municipality in the south. Adentan Municipal Area also serves as a nodal point, where the main Accra/Aburi/Koforidua and Accra/Dodowa truck roads pass. The current population of the Adentan Municipal Area is estimated to be 97,050. Adenta lies at the bottom, windward side and south of the Akuapim Range. It is a lowland area with an undulating terrain, which barely rises above 50 meters above sea level. Temperatures are generally high throughout the year with rains around April to July and September to November.

Map 2: Map of Adenta



4.5 The Waste Management Departments of the La Nkwantanang Madina and Adentan Municipalities

The department solely responsible for sanitation matters at the local level is the Waste Management Department (WMD). Just like other departments under the Local Government System created by the Local Government Act (1993), Act 462, the WMD is expected or mandated to provide, oversee and manage environmental sanitation in the various MMDAs. Both the Adentan and Madina Municipalities are obliged to ensure that their municipalities are clean and healthy by providing and delivering SWM services in line with the expected quality through the involvement of all important stakeholders. They also strive to be effective and work in collaboration with committed stakeholders and the society at large to ensure effective SWM in order to promote good health and protect the environment. They are also responsible for ensuring that solid waste is collected, transported and disposed of in an environmentally sound manner by the private sector. They are also obliged to monitor the activities of the private sector to ensure that they are working according to contract arrangements as well as monitor and enforce laws on the disposal behaviour of individuals.

Table 3: Distribution of Waste Management Staff in the Madina Municipality

Chief Environmental Technologist	1
Public Health Engineer	1
Environmental Health Officers	6
Environmental Health Assistants	30
Executive Officers	1

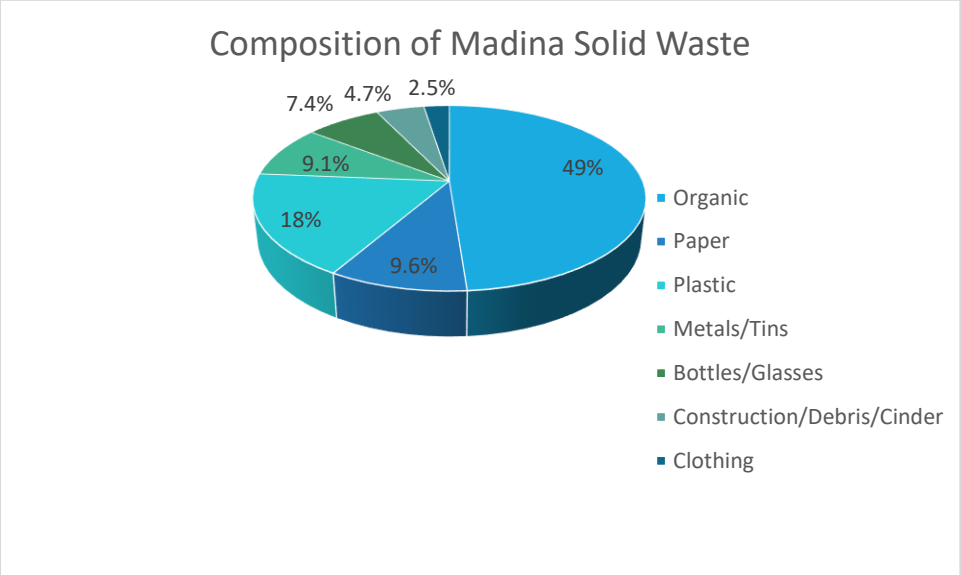
Source: Waste Management Department, 2015

The Environmental Health Assistants are those on the ground who actually undertake the education of citizens on SWM. They also undertake critical monitoring of the activities of the private sector to ensure they work according to the contract arrangement. They also together with the task force of the Assembly track the activities of criminals and environmental cleanliness defaulters to prosecute them in court. The Adentan Municipality on the other hand has only two Waste Management Officers and 3 Environmental Health Assistants.

4.6 Quantity and Composition of Municipal Solid Waste Generated Daily

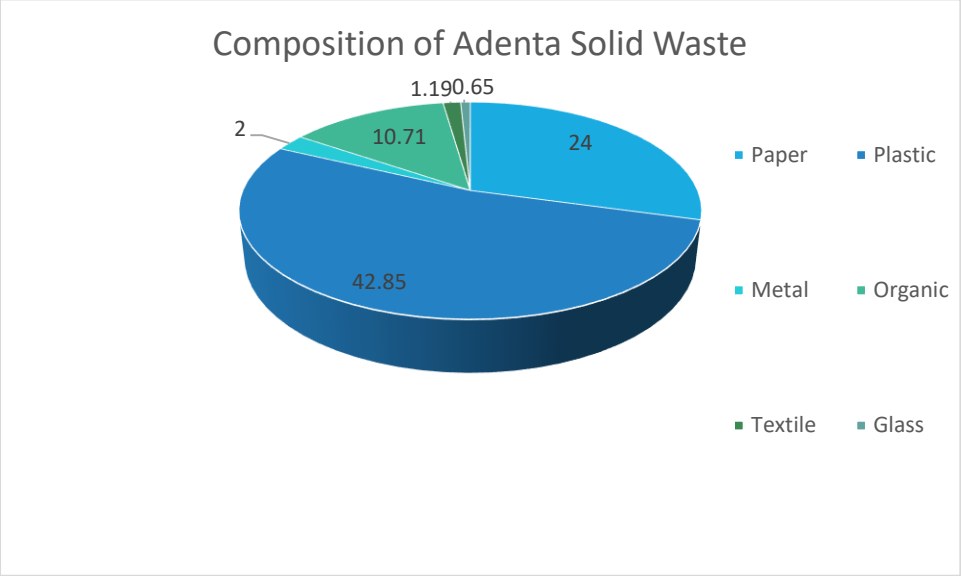
The Adentan Municipality generates 101 metric tonnes of solid waste per day. Out of the total solid waste generated, 26 metric tonnes is collected and disposed. The residual 75 metric tonnes is disposed of indiscriminately, burned or buried (AdMA DESSAP, 2015). Solid waste in the Adenta Municipality constitutes mainly of plastic and paper whilst that of Madina composes of organic and plastic. All these waste types collected at Adenta are put together and disposed at a dump near Pantang. Madina also generates 119 tonnes of solid waste per day out of which 105 tonnes is collected. The collected waste is also all together deposited at either Nsumia or Kpone Landfills. The figure below is a pictorial representation of waste composition in both municipalities.

Chart 3: Composition of Madina Solid Waste



Source: DESSAP, 2015

Chart 4: Composition of Adenta Solid Waste



Source: DESSAP, 2015

According to Chart 3, 49% of waste in Madina is composed of organic waste. The high organic content is as a result of the fact that majority of waste generated from Madina comes from the market which is mainly made up of foodstuffs. The high organic content also indicates a high rate of degradation; hence, the probable presence of foul smell in the area. As a result of this high organic content in the waste composition of Madina which is likely to cause environmental nuisance, the municipality uses its own compaction truck to service the central business area where most of this organic waste is generated and collects and deposits organic waste daily. Adenta on the other hand, according to Chart 4 records a high rate of plastic waste (43%). This is as a result of the presence of several water purification companies in the municipality. The water companies produce three products, namely, bottled water, sachet water and refills water dispensers. The types of waste generated are polythene, plastics and some

organic waste. The company generates about three $12m^3$ of polythene and plastic waste weekly which forms about 75% of the total waste generated in the municipality.

The composition of solid waste in Madina is typical of the waste types in the developing world as stated by Asnani and Zurbrugg (2008) who mentioned that the waste in most developing countries is composed of organic contents. The waste composition in Adenta which consists mainly of plastics, contradicts the above statement made by Asnani and Zurbrugg (2008).

4.7 Organization of SWM in Madina and Adenta

The ESP as well as the Local Government Act mandates all MMDAs to provide SWM services to their populace either directly or through a private organization. Both Adenta and Madina have had private sector provision since inception. Both municipalities practise two main SWC systems, namely, door to door and public container services to render SWM services to the citizens of Adenta and Madina. This concurs with the findings made by Oduro Kwarteng in a study conducted in 5 cities in Ghana (Oduro-Kwarteng, 2011). The door to door collection system encompasses the collection of solid waste from houses directly whilst the public container system involves collecting solid waste from containers placed at vantage points in public places such as markets, public toilets, hospitals, etc. in the municipalities.

The municipalities carry out the function of SWC by using the services of the private sector on both contract and franchise basis. Collection of solid waste from the public container is on contract basis where the municipalities pay the private sector directly from their District Assembly Common Fund for the service rendered. However, the collection of solid waste from households (door to door service) is on franchise basis where the private sector collects fees (fixed at a stakeholder meeting) directly from the households/individuals. These service providers use equipment such as compaction trucks, tipper trucks and tricycles for the collection and transportation of solid waste. Door to door collection service is rendered to all households twice a week for Madina whilst it is once a week for Adenta. For some households, dustbins are provided by some service contractors as part of the fees charged whilst in some cases households improvise and produce their own refuse containers ranging between sacks, plastic containers and metal buckets. Low income areas pay 6 Euros for the waste to be collected whilst middle and high income areas pay 8 Euros and 12 Euros respectively in both municipalities. Both municipalities do not undertake recycling of solid waste. Some private companies and individuals in the municipalities however undertake small scale recycling on their own. Households are also encouraged to reuse waste that is reusable to reduce the solid waste that has to be collected and sent to the landfill sites.

4.7.1 Private Sector Involvement in SWM in Madina and Adenta Municipalities

Madina and Adenta municipalities have had the operation of the private sector since inception. When privatization was instituted in Adenta and Madina, only one private company was carrying out SWM activities. Currently, there are eight private sector organizations each operating in the Adenta and Madina Municipalities. The private sector in both Municipalities deliver services on both contract and franchise basis. The companies in Madina collect solid waste from households twice a week and daily from public containers according to contract arrangements whilst the private sector in the Adenta Municipality on the other hand collect solid waste from households once a week instead of twice a week which is in the contract arrangements. Public containers in Adenta are also left to their fate and only picked up upon several complaints from residents. The types of trucks used by these service providers include Compaction Trucks, Multi lift, Tipper trucks, Pickups and Power tiller, Bola Taxis, among

others. The types of containers and bins used include Central Containers, 240 litre bins and 120 litre bins. The Madina Municipality seriously engages its Waste Management Department, the EPA Division, the Police and the Municipality's taskforce in undertaking monitoring and evaluation of the private sector's activities to ensure they are working according to contract arrangements. The same can however not be said about Adenta where no such arrangements and taskforce exist to undertake monitoring of the activities of the private sector. Below is a list of private sector companies working in both municipalities and the stock of equipment used to operate.

Table 4: Private Waste Operators in the Municipalities

List of Operators	Type & Number of Vehicles
Jamoky B. Ventures	3 Compaction Trucks, 3 Bola Taxis, 1 Tipper Truck
Alliance Waste	3 Compaction Trucks
Rhalex Royal Enterprise	1 Compaction Truck, 1 Bola Taxi
Premko Limited	2 Compaction Trucks
5. Zoomlion (Domestic) Limited	2 Compaction Trucks
Xdorf Venture	2 Compaction Trucks
Amanee General Waste Limited	2 Compaction Trucks
LaNMMA/Zoomlion Limited	2 Compaction Trucks 2 Skip Loaders

Source: DESSAPS of Madina and Adenta Municipalities

The study intended to investigate the influence of government enabling environment on the quality of solid waste collection delivered by the private sector in Madina and Adenta. The independent variable is government enabling environment which was operationalized as policies, legal and regulatory framework and institutional capacity of the public sector. The dependent variable, which is quality of solid waste collection delivered by the private sector was also operationalized as service coverage, frequency of collection of solid waste, level of satisfaction, cleanliness of service areas, methods of disposal, affordability of user charges and willingness to pay for services rendered. The current section present findings on the independent variable followed by findings of the dependent variable after which analysis of the causal relationships will be established.

4.8 Government Enabling Environment to Support Private Sector Service Delivery

In this study, government enabling environment was spelt out as policies and legal and regulatory frameworks governing SWC in the various municipalities as well as the institutional capacity in managing and supervising the private sector in carrying out their duties. These are further measured by existence of policies and bye laws and their enforcement, institutional capacity and capacity building, environmental sanitation education, performance monitoring and tender procedures in contracting the services of the private sector.

4.8.1 Existence and Enforcement of Policies

The policy that is in place in Ghana to ensure that SWM is effectively done is the Environmental Sanitation Policy (ESP) passed by the Parliament of Ghana in 2010. In the ESP, the role of each stakeholder in the SWM sector is clearly spelt out to ensure that an effective SWM is achieved. According to the ESP, "The Waste Management Departments (WMDs) within the Municipalities shall carry out the collection and sanitary disposal of solid, industrial, healthcare and other hazardous wastes; and cleaning of public places. Private companies can be contracted to deliver these services" (The Environmental Sanitation Policy of Ghana, 2010). The ESP further instructs all Municipalities to join forces with the Environmental Protection Agency (EPA) to create an Environmental Protection and Standards Enforcement Division within the WMDs. The Division, according to the policy, shall "be responsible for the monitoring and enforcement of environmental standards and regulations set by the EPA and other national regulatory agencies; they shall also together with the WMD be responsible for environmental sanitation education of the public".

Findings from the study indicated that in line with this directive, the Madina Municipality has created the division within the WMD and staffed with a task force with a daily routine of ensuring environmental cleanliness. The WMD staff accompanied by the EPA taskforce monitor the activities of the private sector to ensure that they perform their duties to the letter. They ensure that failure on the part of the private company to fulfil their part of the contract leads to immediate termination of contract. It was also reported that the WMD staff and the EPA taskforce stay on the highway at dawn to arrest culprits/criminals who throw waste from their cars unto the streets. These culprits are tried in court and fined. The proceeds from the fines are used to carry out sanitation activities and part of it used to motivate these workers, serving as incentive. Adenta on the other hand has not created the division as spelt out in the policy. The reason given is because of a shortage of office space and task force to fill that position. Hence, no proper monitoring of the private sector is made, giving rise to flouting of contract arrangements by the private sector.

The ESP further outlines the role each stakeholder must play in order to ensure the delivery of quality solid waste services. It entrusts municipalities with the responsibility of enforcing the achievement of these roles. The ESP instructs private companies to collect solid waste, provide the bulk of environmental services under the supervision of the public sector and operate within policies, regulations, supervisory and licensing arrangements, which are set by the public sector. The policy also requires that households and communities store solid waste properly to be collected by a municipality recognized service provider. Households are also expected to hygienically dispose of solid waste generated in public areas, by use of an authorized solid waste container, and serving as watch dogs to prevent indiscriminate disposal of solid waste by others.

Regarding the role of the private sector, the Madina Municipality ensures that the private sector goes according to their duties as spelt out in the policy. It was found out that the Madina Municipality conducts regular monitoring of the activities of the private sector using the Environmental Health Assistants and the taskforce in the created EPA division. During this monitoring, the private sector is assessed using standards set in the contract arrangements. Companies who fail to reach contractual requirements are laid off. In Adenta however, it was reported that the WMD is bedeviled with inadequate staff and relevant resources to undertake

effective monitoring and terminate contract of non-performing companies or prosecute in the event that the private sector fails to collect solid waste or withdraw services at short notice.

Regarding households, in Madina, the Environmental Health Assistants of the WMD along with the task force of the EPA division undertake household inspection every Tuesdays and Fridays to ensure that households and communities keep their homes and surroundings clean. They are mostly nicknamed "Tankas". Findings indicated that failure on the part of households or communities to keep their surroundings clean resulted in being tried at the court, fined and shamed. Individuals for fear of going through this humiliation go by the rules set out in the policy and thus aid in keeping Madina clean and lessening the burden of the private sector and giving them to opportunity to carry out their work with ease. In Adenta however, it was reported that the WMD is confronted with inadequate staff and resources that hinder them from carrying out the duty of monitoring the SWM behaviour of households. As a result, households engage in indiscriminate disposal of refuse without being sanctioned, affecting the cleanliness of the city. The lack of resources was attributed to neglect of the department by the management of the municipality according to the Director of the WMD, implying lack of priority for SWM issues.

The Polluter-Pays Principle (PPP)

The Polluter-pays principle is embedded in the ESP. In order to ensure that waste generators pay user fees to enable the private sector recover cost, the MLGRD introduced the Polluter-Pays Principle in 2010. The polluter-pays principle is a concept, that ensures that those who generate waste pay for the waste to be collected. The polluter-pays principle explains that all households, institutions, hospitals, commercial establishment, clinics, etc. must register with an MMDA accredited waste contractor for SWC from their respective premises at a fee.

Findings indicated that in Madina, services are paid for by users devoid of any subsidy by the municipality. Areas in the community with respect to SWC are categorized into three zones namely 1st class residential areas, 2nd class residential areas and 3rd class residential areas. Households within the first class zone pay 12 Euros (GH₵50) per 240 litre bin per month, those within the 2nd class zone pay 8 Euros (GH₵40) and areas within the 3rd class zone pay 6 Euros (GH₵30) and 3 Euros (GH₵10) per household in compound houses. Findings further indicate that the polluter-pays method of refuse management in Madina are effective and efficient. This is because the municipality, households and private companies mentioned that there is strict enforcement of the polluter pays principle by the municipality which compels households to pay for services rendered subsequently enabling the private sector to recover cost.

In Adenta however, the study indicated that it is difficult to get users to pay for services. Apart from the lack of enforcement of the PPP, it was also reported that households refuse to pay for services because they do not perceive value for money for the services rendered. According to the WMD of Adenta, presently, about 50% of the cost of SWC and disposal is covered by door to door collection services. "This cannot recover the cost of operation and maintenance", they said. The Municipality however supports the private sector by engaging casual workers under the Ghana Youth Employment Programme to sweep the few road line drains, streets, lorry station and other public places in the municipality.

4.8.2 Legal and Regulatory Framework (Existence and Enforcement of Bye-laws on Privatized SWC in Madina and Adenta)

Apart from the Criminal Code, Act 29 (1960), the Environmental Sanitation Policy of Ghana (2010) and the Public Health Act, the Madina Municipality has enacted bye-laws to ensure appropriate hygienic practices in the municipality. The Madina Municipal Assembly Bye-laws make provisions to regulate SWM. Some of the provisions in the bye laws include "Provision of Waste bin" which states that "A household, an owner or occupier of a premises shall provide a waste bin for which the owner shall pay to the Municipality's approved contractor for the collection of waste.'' Offences spelt out in the bye-laws include indiscriminate refuse disposal and dumping at unauthorized sites. A person who contravenes any of the provisions of the bye-laws commits an offence and is liable to punishment, penalties and prosecution. Punishment and penalties for any of the above-mentioned offenses include prosecutions, fines and jail terms.

According to the Director of the WMD and the Municipal Co-ordinating Director of the Madina Municipality, the efficiency of prosecution is quite good because it serves as deterrent to other offenders. It was found out that the Madina Sanitation bye laws are strongly enforced by the WMD, the task force at the division of the EPA and the Police. Through the enforcement of these laws, the municipality is able to raise 1,000 Euros (fines from defaulters) weekly out of court cases which is used to support the private sector and also used as incentives and motivation for the staff of the WMD and the task force. Findings spelt out that about 10 cases are prosecuted weekly within the municipality and the offenders are fined sums of money based on their offences. The WMD Director however mentioned that court cases are expected to reduce since people are refraining from engaging in SWM malpractices because of the strong enforcement of laws.

Regarding the private sector, the Madina Sanitation bye-laws state that:
"The Municipality will have the right to impose sanctions for default or inadequacy in performance. The Municipality shall be entitled to invoke any sanction (s) available to it to address any default or inadequacy in performance, despite any forbearance or indulgence on previous occasions of default or inadequacy in performance" (Waste Management Department of LaNMMA, 2015). In Madina, these laws outlined above are held in high esteem and strongly enforced making it difficult for any contractor to default. The WMD Director mentioned that the contract of one private sector company had to be terminated because of non-performance.

In Adenta also, there are bye-laws on SWM and persons who default are prosecuted. The major one states that "Dumping of refuse at unauthorized areas shall be an offence liable to a fine of 6 penalty units or in default, 3 months' imprisonment or both." In 2015, the commonest nuisances that prevailed in the Adentan Municipality was accumulation of refuse on premises which accounted for 65% of all sanitation nuisances. Notices served to abate nuisances on premises were 600 and only 9 summons were served with 6 successful prosecutions resulting in an amount of 500 Euros. The Director of the WMD mentioned that the Court fines that are imposed on offenders are very low and therefore not deterrent enough; hence, does not discourage the flouting of solid waste regulations. Regarding the private sector, the Head of the WMD intimated that the municipality is not able to sanction them in the event of a default because of political interferences that shield these private companies who mostly happen to be "party favourites". It was also observed that service providers in Adenta continuously contravene terms of contracts with no sanctions from the municipality. For example, it was observed that public containers were left unemptied for about two weeks and no action was taken by the municipality.

4.8.3 Institutional Capacity of the Public Sector

Institutional capacity of the public sector was operationalized into institutional capacity and capacity building, performance monitoring, tender procedures and environmental sanitation education.

Institutional Capacity and Capacity Building

In Madina, the institution charged with the responsibility for SWM is the WMD. The WMD is accountable for ensuring the collection, storage, transportation, treatment and disposal of all forms of waste in the municipality as well as providing the regulatory framework for the efficient management of all categories of waste. It was found out that the WMD of Madina is made of 38 competent professionals who bring their knowledge on board to promote the work of the private sector (Waste Management Department of LaNMMA, 2015). They have a stock of staff who are knowledgeable and well-resourced in the area of SWM, for example the Chief Environmental Technologist who brings up strategies to improve SWM and the Environmental Health Assistants who undertake community education, monitor the work of the private sector and communities to sanction defaulters of the law (Waste Management Department of LaNMMA, 2015). The presence of the Municipal Taskforce and the staff of the Division from EPA together with the Police also complement the activities of the WMD who unceasingly enforce laws by regularly monitoring the activities of the private sector and regular checks of households and individuals even at dawn; whilst sanctioning when necessary.

To ensure the effective utilization of staff and the enforcement of sanitation bye-laws in Madina, the Environmental Health Assistants have been assigned to the various electoral areas in the municipality. In Madina, it was also reported that there are other institutions whose activities or performance impinges on or complement those of Environmental Sanitation. These institutions are the Environmental Protection Agency, Town and Country Planning Department, Department of Urban Roads, Ministry of Health/Ghana Health Services and Ministry of Agriculture. The Madina Municipality collaborates with these institutions to ensure that solid waste is efficiently managed in the municipality (MLGRD, 2010).

In terms of capacity building, the staff of the WMD and the division of the EPA as well as the taskforce in Madina are given training on new ways of SWM and how to improve solid waste delivery. According to the Director of the WMD and training reports, on monthly basis, their capacities are built on how to be more effective on monitoring of the activities of the private sector and how to enforce laws. These trainings boost their capacity to be able to perform their role of ensuring that there is improved service delivery in SWC. It was reported that the WMD is also resourced with all the necessary resources needed to perform and highly motivated to boost their performance.

In Adenta also, the Waste Management Department is responsible for environmental sanitation activities in the municipality. It was however reported that the WMD is bedeviled with lack of adequate resources and competent staff (5 Staff only) to monitor the activities of the private sector and also to intervene in the event that a service provider fails to collect waste. The WMD Director lamented that the WMD is completely ignored and therefore not well resourced. The capacities of staff are not built and no motivation is given them. As a result, they do not engage in adequate supervision and monitoring of the private sector and individuals causing a high rate of default by service providers and indiscriminate disposal of solid waste by households resulting in low service quality.

Performance Monitoring

It is stated in the contract arrangement for all municipalities in Ghana that private service providers are obliged to report their activities to the service authorities monthly and annually through written reports to enable the authorities monitor their progress in order to apply the necessary measures for improved performance and service quality. The municipalities are also required to invite private companies to the monthly environmental management meetings to discuss issues pertaining to environmental management and the extent of provision of SWC.

In Madina, the WMD undertakes monitoring of the quality of service delivered by inspecting service areas daily, following up on complaints of non-service by residents and inspecting households twice a week on Tuesdays and Fridays. Non-performing companies are allocated default notices for non-performance along with warnings and sometimes terminating of contracts for inability to deliver according to the required quality of service. The WMD, municipality's task force and the EPA's division are well-resourced and competent to carry out this duty. As a result, almost 90% of solid waste generated is collected and the environment is litter free.

Adenta on the other hand, had problems monitoring the progress of the private sector. Firstly, unlike Madina, Adenta did not have service standards and indicators to conduct monitoring. Also, the Adenta Municipality was bedeviled with competent staff and resources to carry out monitoring and supervision of the activities of the private sector as well as check the SWM behaviours of service users. Unlike Madina, Adenta did not have a task force in place to undertake monitoring on scheduled days, leading to the collection of only 25% of solid waste generated in Adenta.

Tender Procedures

Proper means of tendering is clearly spelt out in the Public Procurement Law of Ghana which strictly states that an advertisement of the search for a contractor should be made in the dailies, followed by a purchase of bids, opening of bids before the naked eyes of all present and finally evaluation and selection of the competent contractor (MLGRD, 2010).

In Madina, contract documents indicated that the selection of the private sector is done according to the Public Procurement Law, right from advertisement to opening of bids and evaluation and award of contract. This way, competent contractors are contracted and they perform based on the contract agreement and in line with the obligations of the private sector as stated in the ESP, leading to an improved quality of service. Even though there is always the tendency to flout regulations and obligations, it was reported that the private sector works within the contract agreement because of the checks and balances and monitoring from the WMD and the task force of the EPA division. It was however mentioned that sometimes political interference comes into play during contracting but is ruled out by strict implementation of the public procurement law.

Findings however revealed that most of the contractors within Adenta were awarded the contracts without due process and contrary to the Public Procurement Law. One example in Adenta is that there was no contract signed between the Adenta Municipal Assembly and the Amane Company for SWC. A Memorandum of Understanding (MOU), which mandates a private company to provide services to a municipality, by registering the people and collecting the waste, had neither been signed. The operations manager at the private company indicated that there was a verbal agreement between the Adenta Municipality and the company, with the

understanding that after three months, the agreement will be reviewed and a proper contract will be done but that had not been done.

Although no contract had been signed, work was still in progress. The effect of this kind of arrangement was that, it made access to loan difficult, since there should be a proof of contract when going for loans from the banks. Hence no funds were available to carry out the SWC activities, affecting the quality of SWC in Adenta.

Political interference also affected the implementation of proper tender procedures in Adenta. An interview with one of the private waste management companies revealed that, the distribution of designated areas was influenced by one's political affiliation. One of the managers of the private companies indicated:
"The size of an area that is given to a waste company is very much dependent on the kind of political party in power. If as a company, your party is not in power, you are assigned a small area to operate."
Some contractors who are affiliated with the political party in power are favoured and selected to provide services whether they are capable or not.

Environmental Sanitation Education and Awareness Creation

Environmental Sanitation Education is one of the strategies adopted by local governments to manage effectively the environment and waste in their various localities. In Madina, the current SWM education programmes are targeted at every household within the municipality. The subject areas of education include general sanitation, SWM and community cleaning. Citizens are authorized to refrain from indiscriminate disposal of refuse and develop the habit of temporarily storing solid waste properly in their homes until it is picked up by a service provider. They are also given training and demonstrated to on what should be done. They are asked to be their neighbours' keeper and be watch dogs to report any inappropriate attitude towards solid waste handling.

Also, the municipality has a radio station, called LANNMA Radio Station that talks about environmental sanitation an hour every day. On Tuesdays and Fridays, an Environmental Health Officer is invited over to educate the public on sanitation issues. The municipality also has a public address system on a vehicle that does public education in communities during the day and at dawn. They also organize drama nights using school children to educate the communities on how dangerous an unclean environment is and how each individual can play a role to end the environmental menace. The director of the WMD of the LaNMMA however mentioned that:

"The problem is not about education but about law enforcement. My department together with the task force and the police mount barriers to arrest people who dump refuse along the highway at dawn. It is a criminal act they engage in, not a matter of education. People dressed nicely in their posh cars drive at dawn to dump refuse at the shoulders or median of the highway. They hide to dump waste; they don't need education. They need to be sanctioned, strict enforcement of laws is what is needed."

In Adenta, it was reported that most citizens within the jurisdiction of the municipality have access to environmental sanitation education. According to the WMD in Adenta, public education is done, enforcement of laws is also done and perpetrators sanctioned. However, the absence of logistics and other necessary inputs limits the access and coverage of environmental sanitation education by all citizens in the municipality.

Table 5: Summary of the Differences of Government Enabling Environment in Both Municipalities

Government Enabling Environment	Madina	Adenta
Existence and Enforcement of Policies	Strict adherence to and enforcement of Environment Sanitation Policy	Policy exists but there is low adherence to and enforcement of the policy
Polluter Pays Principle	Polluter Pays Principle established and enforced	No enforcement of Polluter Pays Principle
Legal and Regulatory Framework	There exists bye-laws that are strongly enforced. Offenders are tried and fined to deter others	No specific bye-laws but some offences of solid waste malpractices are present but are not enforced
Institutional capacity of the public sector -Institutional capacity and capacity building	Availability of qualified staff and availability of capacity building programmes. Well-resourced office.	Inadequate office accommodation and supporting staff coupled with weak institutional capacity and lack of in-service training for staff
-Performance Monitoring	Monitoring of the activities of private sector as well as households are done on regular basis (twice a week)	Little or no monitoring is done due to lack of adequate staff to fill the position and lack of resources to carry out monitoring (Inadequate vehicles for monitoring and supervision)
-Tender Procedures	Selection of the private sector is done according to the Public Procurement Law. Memorandum of Understanding are signed between the two parties.	Tender procedures are not done according to the procurement law in many cases. Proper contract arrangements are not made. Selection of private sector is mostly by political influence
-Environmental Sanitation Education	In Madina, the current SWM education programmes are targeted at every household within the municipality. On Tuesdays and Fridays, an Environmental Health Officer is invited over to educate the public on sanitation issues. The municipality also has a public address system on a	The absence of logistics and other necessary inputs limits the access and coverage of environmental sanitation education by all citizens in the municipality.

	vehicle that does public education in communities during the day and at dawn. They also organize drama nights using school children to educate the communities.	

The dependent variable, which is expected to react to changes in the independent variable is discussed below.

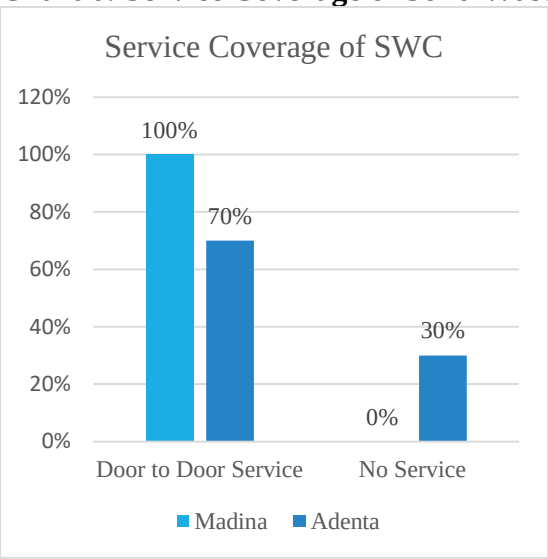
4.8 Quality of Solid Waste Collection Delivered by the Private Sector

To ascertain whether the private sector is delivering services according to the desired quality, there is the need to assess the quality of service delivered. In this study, the indicators used to assess the quality of solid waste collection delivered by the private sector are frequency of collection, level of satisfaction, service coverage, cleanliness of service areas, affordability of user charges and willingness to pay.

Service Coverage

All households in Madina are reached by the door to door collection system unlike Adenta where about 30 percent of households do not have access to any collection service and therefore dispose of solid waste indiscriminately. It was reported that residents in a community in Adenta called Commandos have created a dumpsite on their own due to the lack of service rendered. Several complains have been made but the municipality has not taken any action regarding the self-created dumpsite. Below are the responses of people according to the type of services received and a photograph of the self-created dumpsite at Adenta Commandos.

Chart 6: Service Coverage of Solid Waste Collection



Source: Fieldwork, 2016

Frequency of Collection

In Madina, the private companies collect solid waste from households twice a week whilst it is only once a week for Adenta. 80 percent of residents at Adenta expressed their displeasure at

the irregularity in solid waste collection by the private sector. They were highly unsatisfied and have had several demonstrations to draw the municipality's attention to the waste nuisance in the city. Containers placed at vantage points in public areas are lifted every three days at Madina whilst containers at Adenta, especially the Commandos area are left to overflow and left at the mercy of flies and rats. Out of desperation from solid waste not collected, some residents dispose of the waste indiscriminately and others burn them at their backyards.

Chart 7: Level of Satisfaction of SWC

The chart above indicates that residents in Madina are very satisfied in general with services rendered unlike residents of Adenta who were mostly unsatisfied. They attributed satisfaction to frequency of collection and cleanliness of the area. Residents of Adenta expressed displeasure in the service being delivered. However, in Madina, the residents commended the private sector and the municipality for putting all hands on deck to give them a better service.

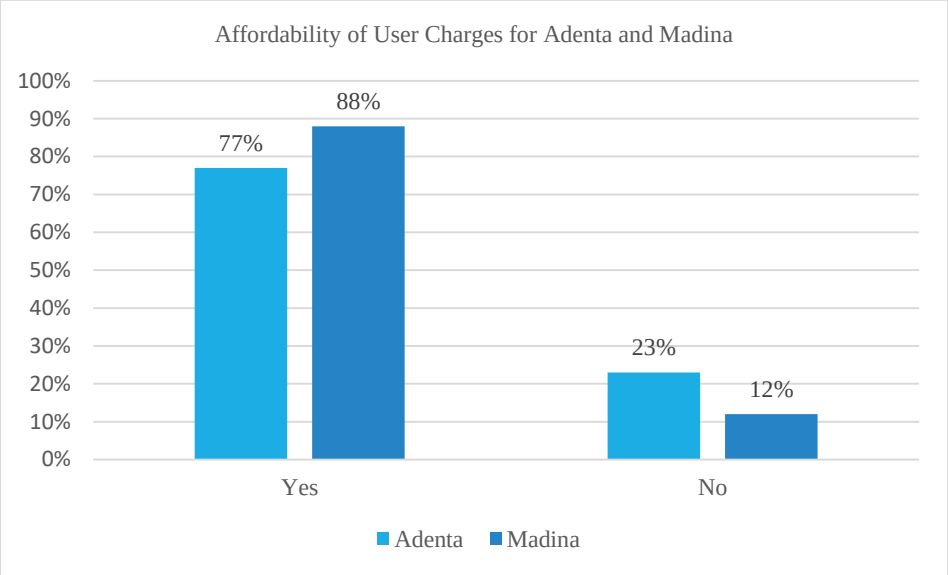
Cleanliness of Service Areas

By observation, the environs in the Madina Municipality were clean and devoid of any littering unlike Adenta where refuse was found in every corner and open spaces of the municipality as well as in households. The photograph below indicates a public container that had been full for over a month without being lifted by the private company in charge. Residents also complained that the municipality had not done anything concerning the issue. There have not been any sanctions applied to the private sector for failure to perform. The scene is an eyesore as indicated in the figure below.

Photograph 3: Cleanliness of Service Areas

Source: Fieldwork, 2016

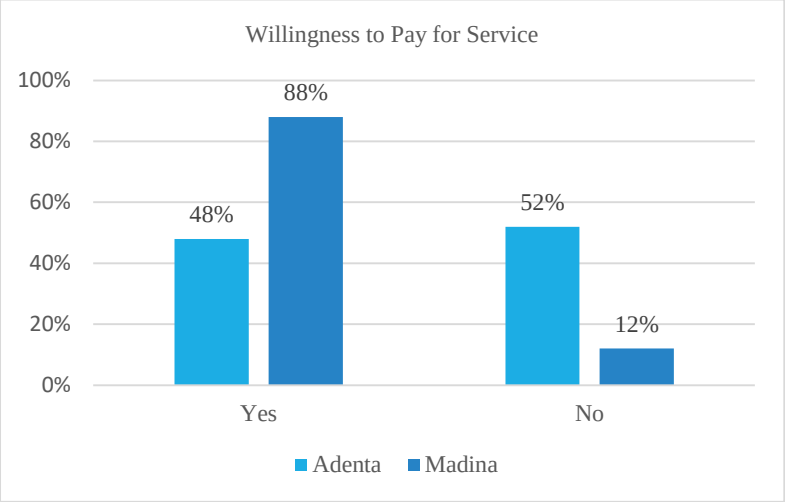
Chart 8: Affordability of User Charges



The chart above indicates the affordability of service user charges by residents in Adenta and Madina. Among 80 households of Madina interviewed, 88% percent of respondents perceived the user charges as affordable whilst 12 percent perceived that the charges are not affordable. On the average, this implies that among the residents of Madina, the user charges can be said to be affordable. The respondents acknowledged that the municipality involves them in fixing the fees and therefore they are aware of how much they are paying and it is a fair charge considering the swift services rendered. Residents in Adenta on the other hand had 77 percent perceiving the service as affordable whilst 23% viewed the fees charged as not affordable. Residents complained about the municipality and the private sector imposing the fees on them. One respondent aggrieved:

"They do not involve us in anything. You will just be there and they will bring you a bill to pay for the unsatisfactory service rendered."

Chart 9: User's Willingness to Pay for Services



Residents were asked if they were willing to pay for the services. In Madina 88 percent out of 80 respondents indicated that they were willing to pay for the service whilst 12 percent indicated otherwise with their reason being that the private sector still had room for

improvement. In Adenta residents complained that they do not perceive value for money and therefore are not willing to pay for services rendered unless the service is improved. They also complained about not being involved in fixing tariffs which prevents them from being willing to pay user fees. All respondents in both municipalities were willing to pay more for improved services.

Table 6: Causal Relationship Between the Independent and Independent Variable in Both Municipalities

Madina		**Adenta**	
Government Enabling Environment	Quality of Solid Waste Collection	Government Enabling Environment	Quality of Solid Waste Collection
Policies-The ESP - Madina Municipality has created the division within the WMD according to the ESP and staffed with a task force with a daily routine of ensuring environmental cleanliness. -The Municipality ensures the role of each stakeholder is achieved through enforcement of the policy	Monitoring on the activities of the private sector is done to prevent flouting of contract arrangements. The private sector is therefore able to collect 90% of solid waste generated; daily monitoring of the private sector also improves frequency of collection, hence improving the quality. Monitoring of households' waste management activities is also done to prevent indiscriminate disposal of solid waste, ensuring cleanliness of the city.	No Division has been created as There is no enforcement of the ESP	The private sector and individuals flout the rules governing SWM. Since there is no taskforce to organize regular checks on the private sector, service coverage is low. It was reported that about 30% of people do not have access to solid waste collection service. individuals and households were also reported of engaging in indiscriminate disposal of solid waste since there was no checks, affecting cleanliness of the area.
- There is strict enforcement of the polluter pays principle by the municipality which compels households to pay for services rendered	Strict enforcement of the PPP ensures attainment of cost recovery making it possible for the private sector to deliver services according to the desired quality	Polluter-Pays Principle is Not Enforced	Low cost recovery since the polluter pays principle is not enforced to compel waste generators to pay for services received. Indiscriminate disposal of solid waste is massive
Legal and Regulatory Framework -Existence and strong enforcement of the Madina Municipality Bye Laws	Deters individuals from flouting SWC rules, for fear of being sanctioned. The private sector also delivers SWC according to the desired quality to avoid	There is weak institutional capacity, lack of competent staff and resources to ensure that bye-laws are enforced	Affects frequency of collection of solid waste, results in low service coverage, affects cleanliness of service areas due to indiscriminate solid waste disposal

	contract from being terminated.		
Institutional Capacity - Availability of competent staff and availability of capacity building programmes. Well-resourced office.	Competent staff who receive training as well as resourced with the requisite tools to carry out their duties of monitoring the frequency of solid waste collection, coverage and cleanliness of service areas as well as households' payment of user fees and their role in keeping the environment clean thus helping the private sector achieve the desired quality	Inadequate staff and resources to operate. The WMD has only 5 staff which is woefully inadequate for the entire Municipality. The capacity of these few staff are not built.	This affects monitoring of solid waste collection activities resulting in default in contract agreement and indiscriminate disposal of solid waste by citizens affecting frequency of collection, cleanliness of service areas, service coverage and willingness to pay.
Performance Monitoring - Daily Monitoring of the activities of the private sector, monthly meetings with the private sector, twice weekly monitoring of households to ensure they deposit solid waste in the right way	This ensures frequency of collection, service coverage, cleanliness of service areas and willingness to pay which together sums up to ensure the quality of solid waste collection is achieved.	The Municipality lacks the resources (staff, vehicles) to conduct regular monitoring in order to enforce laws	This affects frequency of collection, cleanliness of service areas, service coverage and willingness to pay (cost recovery). This is because the municipality is unable to educate households on the need to pay user fees; neither do they have the resources to enforce the polluter-pays principle.
Tender Procedures - Contract documents indicated that the selection of the private sector is done according to the Public Procurement Law, Memorandum of Understanding (MoU) is signed and term and conditions are spelt out.	-There is a formal contract arrangement in place that must be strictly followed. Each party therefore plays their part well to achieve quality. The MoU guarantees security of the private sector as well as binds them to deliver services according to contract arrangements, subsequently achieving the desired quality.	There are unclear contract arrangements Tender procedures are not done according to the procurement law in many cases. Proper contract arrangements are not made. Contracts re no duly signed.	Inhibits the private sector for acquiring financial resources from the banks to deliver services. This affects the quality of service in totality since it brings service delivery to a total halt.

Environmental Sanitation Education - The current SWM education programmes are targeted at every household within the municipality. On Tuesdays and Fridays, an Environmental Health Officer is invited over to the Municipality's Radio Station to educate the public on sanitation issues. Drama nights about environmental awareness and cleanliness are organized to educate the communities on how dangerous an unclean environment is and how each individual can play a role to end the environmental menace.	Citizens are asked to refrain from indiscriminate disposal of refuse and develop the habit of temporarily storing solid waste properly in their homes until it is picked up by a service provider. Environmental cleanliness from the source of generation is a major help in achieving quality of solid waste collection. Helped in willingness to pay for services (cost recovery) since households were educated on their obligations to pay user fees for the services rendered	The absence of logistics and other necessary inputs limits the access and coverage of environmental sanitation education by all citizens in the municipality.	Lack of education fuels indiscriminate disposal of solid waste in Adenta. Majority of areas in the Municipality are mostly littered. This affects environmental cleanliness, an indicator of quality of solid waste collection.

Table 7: Analysis of Influence of Government Enabling Environment on Quality of Solid Waste Collection in Madina

The table below explains the causal relationship between the sub-variables of government enabling environment and that of quality of solid waste collection in Madina. Further analysis has been explained below.

Government Enabling Environment (Independent Variable)						
Sub-Variables	Policies	Legal and Regulatory Framework	Institutional Capacity and Capacity Building	Performance Monitoring	Tender Procedures	Environmental Sanitation Education
Ranking	Excellent	Excellent	Excellent	Excellent	Very Good	Excellent
Quality of Solid Waste Collection (Dependent Variable)						
Sub-Variables	Service Coverage	Frequency of Collection	Environmental Cleanliness	Level of Satisfaction	Willingness to Pay	

Ranking	Excellent	Excellent	Excellent	Excellent	Very Good

Source: Ranking by Author Based on Responses

Based on responses from interviews as well as questionnaire, the ranking above shows the relationship between the independent and dependent variables was made. In Madina, existence and enforcement of policies, existence and enforcement of bye-laws, strong institutional capacity, performance monitoring and environmental sanitation education were ranked as excellent based on responses received. With excellent policies, legal and regulatory framework, strong institutional capacity and performance monitoring, service coverage, frequency of collection, environmental cleanliness and level of satisfaction of services were also excellent.

Therefore, it can be said that there is a strong impact of enforcement of policies, enforcement of legal and regulatory framework, strong institutional capacity and performance monitoring on service coverage, frequency of collection, environmental cleanliness and level of satisfaction of services leading to quality of service provision. With an excellent environmental sanitation education, households do not engage in indiscriminate disposal of solid waste thus ensuring cleanliness of the environs, subsequently leading to an improved quality of SWC. With environmental sanitation education conducted, households were made aware of the obligation to pay user fees for the services rendered thus enhancing willingness to pay for services which goes a long way to ensure cost recovery thereby improving the quality of service delivered. Willingness to pay was also enhanced with the enforcement of the polluter-pays principle which is embedded in the ESP. With the enabling environment in place, the private sector in Madina is able to collect 105 metric tonnes of solid waste out of the 118.8 metric tonnes generated.

Table 8: Analysis of Influence of Government Enabling Environment on Quality of Solid Waste Collection in Adenta

Government Enabling Environment (Independent Variable)						
Sub-Variables	Policies	Legal and Regulatory Framework	Institutional Capacity and Capacity Building	Performance Monitoring	Tender Procedures	Environmental Sanitation Education
Ranking	Very Poor	Very Poor	Very Poor	Poor	Poor	Poor
Quality of Solid Waste Collection (Dependent Variable)						
Sub-Variables	Service Coverage	Frequency of Collection	Environmental Cleanliness	Level of Satisfaction	Willingness to Pay	
Ranking	Very Poor	Very Poor	Very Poor	Very Poor	Poor	

Source: Ranking by Author Based on Responses

Unlike Madina, the table above indicates that the Adenta Municipality was ranked very poor in enforcement of policies, enforcement of legislation and regulations and institutional capacity of the municipality. Performance monitoring, tender procedures and environmental sanitation

education were also ranked poor. Under these conditions the quality of solid waste collection in Adenta was very poor as only 25.62 metric tonnes out of the 100.92 metric tonnes of solid waste generated was collected. Moreover, 30% of households in Adenta do not have access to any service at all. Due to poor environmental sanitation education and awareness creation, households and individuals engage in indiscriminate disposal of solid waste, affecting the cleanliness of the environment. Willingness of users to pay for fees is also very poor, leading to low cost recovery by the private sector and subsequently jeopardizing coverage and quality of service.

Summary of Findings

The study was intended to determine the extent to which government enabling environment in the form of policies, legal and regulatory frameworks and institutional capacities of the public sector influence the quality of solid waste collection by the private sector in Adenta and Madina both in Ghana. Both cities have had private sector provision of solid waste collection, transportation and disposal since inception in 2008. There are eight private companies operating in both municipalities and they provide these services both on contract and franchise basis through door to door collection and public container systems. The study revealed that the SWC by the private sector in Madina was more effective than that of Adenta. The Madina Municipality generates **118.8** metric tonnes of solid waste and **105** metric tonnes is collected and disposed. Adenta on the other hand generates **100.92** metric tonnes of solid waste and is only able to collect and dispose **25.62** metric tonnes. Whilst all households in Madina have access to SWC service, 30% of households in Adenta do not have access to any service at all. It was reported that residents in Adenta Commandos, an area in Adenta, have created a dumpsite to enable them dump solid waste because they do not have access to any service. Findings indicated that both municipalities do not engage in recycling but the Madina Municipality encourages households to reuse their products. Solid waste collected in Adenta is disposed of in an unsuitable and environmentally unsafe dumpsite at Pantang whilst solid waste collected at Madina is disposed of at Kpone and Nsumia Landfill sites.

SWM in both municipalities was supervised by the Waste Management Departments with support from the management of the municipalities. Madina had extra support from the municipality's taskforce and the taskforce from the EPA Division. It was reported that the Madina Municipality followed the **Environmental Sanitation Policy** which is the guideline for an effective SWM system in Ghana to the letter. They ensured that the role of each stakeholder in the policy was adhered to and enforced. The Adenta Municipality however did not adhere to and enforce the guidelines and requirements of the policy. Failure to adhere to the guidelines in the ESP was a major hindrance to their achieving an improved quality of SWC in the municipality.

Apart from the Criminal Code in Ghana that punished defaulters of SWM laws, the Madina Municipality had the **Madina Municipality Bye-laws** that spelt out punishments for both the private sector and individuals who went contrary to the contents of the bye-laws. These bye-laws were strongly enforced by the WMD and the taskforce which ensured that households managed and handled solid waste in an appropriate manner before being collected. The enforcement of laws also deterred individuals to engage in indiscriminate disposal of refuse for fear of being arrested, sanctioned, fined or jailed. The private sector also performed their duties to the letter for fear of sanctions or termination of contracts. On the contrary, there was no enforcement of bye-laws in the Adenta Municipality because the WMD Director complained of inadequate staff, logistics, resources and the needed support from management to enforce

laws and to undertake regular monitoring of the activities of the private sector as well as monitor the SWM behaviour of individuals.

As a means of **performance monitoring**, the private sector in Madina were obliged to submit monthly reports to the municipality to serve as inputs for their activities to be tracked. The WMD together with the two taskforces undertook twice weekly monitoring and supervision to service areas and households to ensure services were being delivered at the desired quality. The WMD and taskforce at Madina were supported with the needed logistics and motivation unlike Adenta. Whilst the private sector companies in Madina were on their toes to perform for fear of termination of contract, it was quite the opposite at Adenta. Lastly, the inability of the private sector to recover cost as a result of **non-enforcement of the polluter-pays principle** in Adenta also accounted for the poor quality of service delivery. The non-involvement of stakeholders, especially users, in fixing user fees, coupled with poor service delivery in Adenta also accounted for the unwillingness of users to pay for fees, hence leading to low cost recovery by the private sector.

In sum, the findings from the study articulates that enforcement of bye-laws and policies, strong institutional capacity and availability of resources, performance monitoring and environmental sanitation education is imperative for an improved quality of service delivery by the private sector. (Oduro-Kwarteng, 2011), (Karanja, 2005), (Anderson, 2011), (Mwesigye, Mbogoma, et al., 2009), (Alakinde, 2012) .

Chapter 5: Conclusions and Recommendations

5.1 Introduction

This chapter of the study spells out the main findings and conclusions obtained from the fieldwork using it as basis to answer research questions. Implications of the findings together with recommendations are also outlined for policy decisions.

The study aimed at determining the influence of government enabling environment (policies, legal and regulatory framework and institutional capacity of the public sector) on the quality of solid waste collection delivered by the private sector in Adenta and Madina, Ghana. The study therefore sought to answer the extent to which government enabling environment influences the quality of solid waste collection by the private sector. To answer this question, the study specifically intended to answer questions on how solid waste is organized in Adenta and Madina, the gap between contractual arrangements and what service is actually delivered in Adenta and the elements of government enabling environment that exists in Adenta and Madina and how they affect the quality of solid waste collection in both cities.

5.2 Answering Research Questions

The ensuing conclusions were drawn from the findings obtained from the results of the fieldwork undertaken for this study.

How is solid waste collection organized in Madina and Adenta?

Both cities, Adenta and Madina have had private sector provision since inception in 2008. Both municipalities practise two main solid waste collection systems, namely, door to door and public container services to render SWM services to the citizens of Adenta and Madina. The door to door collection system encompasses the collection of solid waste from houses directly whilst the public container system involves collecting solid waste from containers placed at vantage points in public places such as markets, public toilets, hospitals, etc. in the municipalities. Both cities carry out the function of SWC by using the services of the private sector on contract and franchise basis. Collection of solid waste from public containers is on contract basis where the municipalities pay the private sector directly from their District Assembly Common Fund for the services rendered. However, the collection of solid waste from households (door to door service) is on franchise basis where the private sector collects fees (fixed at a stakeholder meeting at Madina) directly from the households/individuals.

These service providers use equipment such as compaction trucks, tipper trucks and tricycles for the collection and transportation of solid waste. Door to door collection service is rendered to all households twice a week for Madina whilst it is once a week for Adenta. For some households, dustbins are provided by some service contractors as part of the fees charged whilst in some cases households improvise and produce their own refuse containers ranging between sacks, plastic containers and metal buckets. Low income areas pay 6 Euros for the waste to be collected whilst middle and high income areas pay 8 Euros and 12 Euros respectively in both cities. The Polluter-pays principle was to ensure that users pay for the services rendered. Due to lack of enforcement of the principle in Adenta, users refrained from paying user fees. The Adenta Municipality were also often not able to pay the private sector for managing the public container areas, affecting the cost recovery of the private sector. The distance to final disposal

sites puts a lot of strain on the private sector since they spend a lot on fuel and maintenance of equipment.

Both the Adenta and Madina municipalities do not undertake recycling. Households do not separate solid waste at source. Some private companies and individuals in the municipalities however undertake small scale recycling on their own. The Director of the WMD at Adenta intimated that the absence of recycling in the municipality increases the cost of waste collection, transport and disposal without the opportunity of recovering part of the cost from recoverable waste.

Even though the ESP clearly spells out that each MMDA should have its own final disposal site that is environmentally sound, findings indicated that none of the municipalities has a final disposal site. They attributed this to the lack of land and financial resources. The private sector in Madina however disposes solid waste at the Nsumia and Kpone Landfill sites in Tema and Nsawam respectively. Solid waste collected from the Adentan Municipality is on the other hand disposed at a dump near the Pantang Hospital in the Ga East Municipality. This area is not only unsuitable but is also poorly managed.

What are the gaps between the existing contractual arrangements and the quality of service provided by private contractors in Adenta?

The obligations of the private sector companies are clearly spelt out in the contract arrangements as well the ESP of Ghana. These duties comprise realizing/attaining targets that are supposed to be collected daily, using competent and qualified personnel to deliver services and making sure that the area of operation is litter free. The private sector in Adenta are however not able to fulfil these obligations or achieve these targets. Adenta generates 100.92 metric tonnes of solid waste but the private sector is only able to collect and dispose 25.62 metric tonnes. Also, 30 percent of households in Adenta do not have access to any collection service. Moreover, the study revealed that refuse was found in every corner and open spaces of the city as well as in households

The study revealed that the reasons associated with the inability of the private sector to achieve contract obligations is because of **lack of enforcement of bye-laws** and **no sanctioning of the private companies for non-performance**, **weak institutional capacity** on the part of the WMD of the Adentan Municipality to carry out monitoring of the activities of the private sector. The companies expressed their grievances at the appalling manner in which residents engage in indiscriminate disposal without facing any punishment from the authorities in Adenta. The companies intimated that the major obstacle that prevents them from delivering the desired quality of service is the lack of enforcement of bye-laws at Adenta. **Improper tender procedures** and **low cost recovery** caused by residents' **unwillingness to pay** for services and **lack of enforcement of the polluter-pays principle**, according to the Director of the WMD of Adenta are also responsible for the failure on the part of the private sector to meet contractual obligations consequently leading to low service quality.

Although outside of the scope of the study, the private sector companies mentioned that one of the major set-backs to the work of the private sector was the **non-availability of a landfill site**. The private sector views the lack of landfill site as a major hindrance to their service delivery. Apart from the distance to the dumpsite that consumes several gallons of fuel and causes equipment breakdown, the private sector is always harassed whenever they go to the Pantang dumpsite to dispose of solid waste. Sometimes they dispose the solid waste in unauthorized

places such as in streams of a nearby town; a habit that had led to the arrest of one of their colleagues.

The private sector also complained about **inaccessible roads** in certain areas of Adenta making it challenging to reach these areas in order to extend solid waste collection. This was attributed to **improper planning by the Town and Country Planning Department** of the Adenta Municipality. The **delay in payment of finances by the municipality** for the collection of solid waste from the public containers also prevented the PS from purchasing and maintaining equipment needed to carry out the service of SWC.

What are the elements of government enabling environment existing in Madina and Adenta and how do they affect the quality of service delivery of solid waste collection?

The elements of the government enabling environment that were considered in the study are policies, legal and regulatory frameworks and institutional capacity of the public sector.

Policies

Regarding policies, the study found out that the policy that is in place in Ghana to ensure that SWM is effectively carried out is the Environmental Sanitation Policy (ESP) passed by the Parliament of Ghana in 2010. It was reported that the Madina Municipality implements the guidelines in the policy to the letter. In the ESP, the role of each stakeholder in the SWM sector is clearly spelt out to ensure that an effective SWM is achieved. In line with the ESP, the Madina Municipality has created a division within the WMD and staffed with a task force with a daily routine of ensuring environmental cleanliness by monitoring the activities of the private sector to ensure that they perform their duties to the letter. Failure on the part of the private company to fulfil their part of the contract leads to immediate termination of contract. Adhering to the policy also involved staying on the highway at dawn to arrest culprits/criminals who throw waste from their cars unto the streets.

Adenta on the other hand does not ensure that each stakeholder goes according to the guidelines of the ESP. The private sector and households therefore handled and managed waste in any manner they pleased. Also, the municipality had not created the division responsible for ensuring enforcement of policies and bye-laws, reason being a shortage of office space and lack of capacity to fill that position. Hence, no proper monitoring of the private sector is made, giving rise to flouting of contract arrangements by the private sector. Individuals, households and companies also engaged in indiscriminate disposal of refuse since there are no checks. This led to poor service quality in Adenta as less than a quarter of the solid waste generated is collected. The polluter-pays principle which is an aspect of the ESP to ensure that the private sector recovers cost through the payment of user fees was not enforced in Adenta. Hence, the private sector was also confronted with the challenge of low cost recovery.

Legal and Regulatory Framework

Findings revealed that the Madina Municipality had enacted bye-laws to ensure appropriate hygienic practices in the municipality. The Madina Municipal Assembly Bye-laws make provisions to regulate SWM by strongly enforcing bye-laws using the WMD, the task force at the division of the EPA and the Police; making it difficult for any individual or contractor to default environmental regulations; hence leading to an improved quality of solid waste delivery.

In Adenta also, there were bye-laws on SWM. The problem however was enforcement of these bye-laws. The commonest nuisances that prevailed in the Adentan Municipality was accumulation of refuse on premises which accounted for 65% of all sanitation nuisances. These defaulters of SWM laws were however not prosecuted due to low enforcement of bye-laws. The Head of the WMD mentioned that the Court fines that were imposed on offenders who were prosecuted were very low and therefore not deterrent enough. Regarding the private sector, the municipality is not able to sanction them in the event of a default because of political interferences. Therefore, contractors continuously contravened terms of contracts with no sanctions from the municipality. Based on the findings from the fieldwork it can be concluded that enforcement of bye-laws are necessary factors/pre-conditions for private sector proficient improvements and enhanced service delivery.

Institutional Capacity of the Public Sector

In Madina, the institution charged with the responsibility for SWM is the WMD. It was also reported that there are other institutions whose activities or performance impinges on or complement those of Environmental Sanitation. The Madina Municipality collaborates with these institutions to ensure that solid waste is efficiently managed in the municipality. The WMD of Madina is made of 38 competent professionals who bring their knowledge on board to promote the work of the private sector. They have a stock of staff who are knowledgeable and well-resourced in the area of SWM, for example the Chief Environmental Technologist is very experienced and brings up strategies to improve SWM and the Environmental Health Assistants who have been assigned various electoral areas in the municipality to undertake community education, monitor the work of the private sector and communities to sanction defaulters of the law.

The WMD is constantly supported by the Municipal Taskforce and the staff of the Division from EPA together with the Police. They incessantly enforce laws by regularly monitoring the activities of the private sector and regular checks of households and individuals even at dawn; whilst sanctioning when necessary. The capacities of these staff of the WMD and the division of the EPA as well as the taskforce are built by training them on new ways of SWM and how to improve solid waste delivery. Monitoring reports showed that, on monthly basis, their capacities are built on how to be more effective on monitoring of the activities of the private sector and how to enforce laws. These trainings boost their capacity to be able to perform their role of ensuring improved service delivery in SWC. It was reported that the WMD is also resourced with all the necessary resources needed to perform and highly motivated to boost their performance.

In Adenta also, the Waste Management Department is responsible for environmental sanitation activities in the municipality. However, the WMD is bedeviled with the lack of adequate resources and competent staff to intervene in the event that a service provider fails to collect waste or withdraw services at short notice. The WMD is completely ignored and therefore not well resourced. The capacities of staff are not built and no motivation is given them. As a result, they do not engage in adequate supervision and monitoring of the private sector causing a high rate of default by service providers. This does not encourage residents to pay for the service thereby causing a lot of loss to the private sector and consequently leading to low service quality.

Environmental Sanitation Education

Environmental Sanitation Education is one of the strategies adopted by the Municipalities to manage effectively the environment and waste in the various localities. In Madina, the current SWM education programmes are targeted at every household within the municipality. Citizens are asked to refrain from indiscriminate disposal of refuse and develop the habit of temporarily storing solid waste properly in their homes until it is picked up by a service provider. They are asked to be their neighbours' keeper and be watch dogs to report any inappropriate attitude towards solid waste handling. The municipality has a radio station, called LANNMA Radio Station that talks about environmental sanitation an hour every day. On Tuesdays and Fridays, an Environmental Health Officer is invited over to educate the public on sanitation issues. The municipality also has a public address system on a vehicle that does public education in communities during the day and at dawn. They also organize drama nights using school children to educate the communities on how dangerous an unclean environment is and how each individual can play a role to end the environmental menace.

In Adenta, it was reported that most citizens within the jurisdiction of the municipality have access to environmental sanitation education. According to the WMD, the issue of apathy and behavioural change are however some of the critical challenges that need to be addressed. Public education is done, enforcement of laws is also done and perpetrators sanctioned. However, the absence of logistics and other necessary inputs limits the access and coverage of environmental sanitation education by all citizens in the municipality. Environmental sanitation education is an essential component of the SWM system which needs to be carried out to prevent indiscriminate disposal of solid waste, thus enhancing improved service delivery.

Tender Procedures

In Madina, the selection of the private sector is done according to the Public Procurement Law, right from advertisement to opening of bids, evaluation and award of contract. By so doing, competent contractors are contracted and they perform based on the contract agreement and in line with the obligations of the private sector as stated in the ESP, leading to an improved quality of service. Even though there is always the tendency to flout regulations and obligations, the private sector works within the contract agreement because of the checks and balances and monitoring from the WMD and the task force of the EPA division.

The study however revealed that most of the contractors within Adenta were awarded the contracts without due process as stated in the Public Procurement Law. There was no contract signed between the Adenta Municipal Assembly and some of the companies for SWC. A Memorandum of Understanding (MOU), which mandates a private company to provide services to a municipality, by registering the people and collecting the waste, had neither been signed. One company complained that there was only a verbal agreement between the Adenta Municipality and the company, with the understanding that after three months, the agreement will be reviewed and a proper contract will be done but that had not been done. Although no contract had been signed, work was still in progress. The effect of this kind of arrangement was that, it made access to loan difficult, since there should be a proof of contract when going for loans from the banks. Hence no funds were available to carry out the SWC activities, leading to poor quality of SWC in Adenta. Moreover, politics play a very vital role in the SWM of the country. Political interference also comes to play in the selection of contractors to carry out services. An interview with one of the private waste management companies revealed that, the distribution of designated areas was influenced by one's political affiliation.

Performance Monitoring

It is stated in the contract arrangement for all municipalities in Ghana that private service providers are obliged to report their activities to the service authorities monthly and annually through written reports to enable the authorities monitor their progress in order to apply the necessary measures for improved performance and service quality. The municipalities are also required to invite private companies to the monthly environmental management meetings to discuss issues pertaining to environmental management and the extent of provision of SWC and disposal.

In Madina, the WMD undertakes monitoring of the quality of service delivered by inspecting service areas daily, following up on complaints of non-service by residents and inspecting households twice a week on Tuesdays and Fridays. Non-performing companies are allocated default notices for non-performance along with warnings and sometimes terminating of contracts for inability to deliver according to the required quality of service. The WMD, municipality's task force and the EPA's division are well-resourced and competent to carry out this duty. This accounts for the improved service quality in Madina where almost 90% of solid waste generated is collected and the environment is litter free.

Adenta on the other hand, had problems monitoring the progress of the private sector. Firstly, unlike Madina, Adenta did not have clear service standards and indicators to conduct monitoring. Also, the Adenta Municipality was bedeviled with competent staff and resources to carry out monitoring and supervision of the activities of the private sector as well as check the SWM behaviours of service users. Unlike Madina, Adenta did not have a task force in place to undertake monitoring on scheduled days, hence explaining the reason for the poor nature of service quality in Adenta.

5.3 Comparison of Findings with Empirical Evidence

A reflection on literature reviewed in chapter two as well as the conceptual framework with a comparison with findings of the study is considered here. It is also to establish whether or not the literature reviewed is comparable or significant to the local context within which the study was conducted.

Several authors have opined that the capacity of the private sector is very important in order to achieve performance. It is believed that the PS has the expertise and capacity to handle SWC. The availability of competent human resource and expertise is imperative for the PS to continuously operate (Oduro-Kwarteng, 2011). SWC activities are human intensive and therefore requires huge number of competent labour to carry out this herculean task. However, it is argued that the PS does not, at times, ensure higher proficiency (Karanja, 2005), (Fei-Baffoe, Atta Nyankson, et al., 2014). A few studies propose that the productivity of the PS is dependent on the ability of municipalities to direct and monitor service delivery quality by the PS and the ability of the PS to recoup cost (Appiah Boamah, 2013, Karanja, 2005), (Karanja, 2005), (Katusiimeh, 2012), (Mwesigye, Mbogoma, et al., 2009).

According to the OECD (2000), municipalities should create an enabling environment to facilitate the delivery of an improved quality of service by the private sector. Findings from the study are also echoed by Oduro Kwarteng (2011), where he mentions that performance monitoring is considered essential for efficiency in contracting SWC services; thus ensuring that private sector delivers on agreed level of service (Oduro Kwarteng, 2011). Oduro Kwarteng (2011), again, found out in a study conducted in five cities in Ghana on SWC that the relationship between PS waste contractors and service authorities guided by existing

regulations in SWC cannot be underestimated; emphasizing that regulation and its enforcement are important in an effort to attaining quality of service delivery in SWC. PSI in SWC in itself is not a guarantee of efficiency unless the government plays its crucial roles of management and regulation and creates the enabling environment (Coad, 2005), (Cointreau-Levine and Coad, 2000). Again, Oduro Kwarteng (2011) attributed the failure of the private sector to inability to attain cost recovery, lack of policies and legal and regulatory backing, unclear contracts and non-compliance to contracts on the part of both parties (local governments and private companies which was exactly the same situation in Adenta. (Triche, 1990, p. 19) cited in (Batley, 1996).

In concurrence with findings, Agyepong (2011) also reiterates that a major obstacle to PSP in SWM is mostly the absence and/or non-enforcement of regulatory frameworks which mostly encompass regulation, procedures and clear definition of roles of partners involved in the partnership arrangement (Karanja, 2005). The study is also a confirmation of the argument by Zurbrugg (1999) which states that inefficiencies in the operations of the private sector in low income countries are as a consequence of lack of enforcement and weaknesses in policies, legal frameworks and regulations. It is an agreed fact that the PS requires adequate financial, human and technological assets and knowhow to be able to perform. However, to complement this, unflinching backing such as legislation and regulatory framework and enforcement of environmental regulation to curb indiscriminate disposal by citizens is required from the government to ensure performance (Kassim, 2009), (Obiri-Opareh and Post, 2002).

On the contrary, Kassim also mentions that the PS is unable to deliver according to the required quality due to inadequate financial, human and technological assets and knowhow to be able to perform. (Kassim, 2009). Also, contrary to study findings however, Anne Karanja (2005), found out from a study of Nairobi that the structure of the management of private companies, operations and maintenance arrangements, inadequate and inappropriate equipment, inadequate financial and inefficient and unskilled human resource of private companies are major hindrances to quality of service delivery in SWM. This is also reiterated by (Klundert and Anschütz, 1999) in the ISWM model book and Kassim (2009).

Although it is possible that the inability of the private sector at Adenta to deliver SWC according to the desired quality could be attributed to inefficient human resources of the private sector, inadequate financial resources, inadequate and inappropriate equipment and improper operations and management arrangements of private companies, as some writers suggest, most scholars however posit that the major hindrance to quality of service delivery by the private sector is a consequence of lack of policies, legal and regulatory framework and weak institutional capacities of the public sector, which concurs with the findings of this study.

From the literature reviewed so far, the basis for this research is that even when the PS is fully equipped to render services, they are only capable of achieving high performance when there is strong policy backing and enforcement, regulation and strict adherence to formal rules and contractual requirements. To answer the **main research question "to what extent do government enabling environment influence the quality of solid waste collection services delivered by the private sector in Madina and Adenta**" therefore, it can be said that based on responses from interviews and questionnaires administered as well as from observation and secondary data reviewed, enforcement of policies and bye-laws, institutional capacity of the public sector and performance monitoring influences the quality of solid waste collected in the two cities to a large extent. The irregular collection of solid waste in Adenta was due to lack of enforcement of bye laws which was also a consequence of weak institutional capacity of the municipality. The Adenta Municipality was bedeviled by inadequate staff, logistics, resources

and the needed support from management to undertake regular monitoring of the activities of the private sector as well as monitor the SWM behaviour of individuals. This accounted for only a quarter of the solid waste generated being collected as well as 30% of the households not having access to solid waste collection service. Madina on the other hand had a solid waste collection rate of 90% and users were generally satisfied with service delivery. Responses indicated that this achievement was as a result of strong enforcement of regulations and policies, strong institutional capacity of the municipality, regular performance monitoring and constant environmental sanitation education.

5.4 Implications of Research Findings

The findings of the study give rise for certain implications which should be considered in policy formulation and implementation in solid waste management.

Firstly, the implications of these findings indicates that PSI in SWC in itself is not a guarantee of efficiency unless the government plays its crucial roles of management and regulation and creates the enabling environment to support the private sector (Batley, 1996). This also means that the **enforcement of bye-laws** and sanctioning of defaulters of solid waste management laws is an essential ingredient to ensure improved quality of service provision by private companies. Oduro Kwarteng (2011) found out in a study conducted in five cities in Ghana on SWC that the relationship between PS waste contractors and service authorities guided by existing regulations in SWC cannot be underestimated; emphasizing that regulation and its enforcement are important in an effort to attaining quality of service delivery in SWC. Karanja (2005) also reiterates that a major obstacle to PSP in SWM is mostly the absence and/or non-enforcement of regulatory frameworks which mostly encompass regulation, procedures and clear definition of roles of partners involved in the partnership arrangement; hence the need for enforcement of regulation to ensure improved quality.

Secondly, the findings also imply that the importance of **adhering to and enforcing policies** related to SWC are imperative in achieving the desired quality of SWC. Some authors deem it an essential ingredient for achieving an improved quality of SWC (Appiah Boamah, 2013), (Oduro-Kwarteng, 2011).

Thirdly, findings of the research also suggest that **performance monitoring** of the private sector is imperative for compliance with contract arrangements and to ensure an improved quality of service. Several studies posit that, private sector effectiveness is highly dependent on the capability of municipalities to monitor their performance (Oduro-Kwarteng, 2011, Obiri-Opareh and Post, 2002). It is obligatory for municipalities to monitor regularly the manner of services delivered by the private sector to ensure quality as well as to spell out sanctions in the event of non-performance or non-compliance to bye-laws and contractual arrangements. It is also mentioned that performance monitoring is considered essential for efficiency in contracting SWC services; this ensures that private sector delivers on agreed level of service (Oduro Kwarteng, 2011). Monitoring the quality of service of SWC collection is essential to ensure the private sector delivers services accordingly to improve environmental conditions. The monitoring of service quality is an issue of concern in a contractual arrangement as well as ensures value for money for users. This also implies that service standards and indicators must be spelt out in contract arrangements to serve as basis for monitoring. Most municipalities in Ghana fail to outline these standards in contract arrangements and that mostly leads to malfunctioning of the private companies (Oduro-Kwarteng, 2011) and (The Environmental Sanitation Policy of Ghana, 2010).

It can be inferred from findings that **tender procedures** when done properly and according to Public Procurement Laws, ensures transparency, fair competition and selection of the competent company to deliver services so as to achieve improved service quality. This is in line with a study conducted in the Accra Metropolitan Assembly where the author found out that most of the contracts within the Metropolitan Assembly were awarded without due process (Oteng-Ababio, 2010) leading to non-performance of the private sector.

Moreover, study findings also imply that **environmental sanitation education** is one way of helping the public to engage in good SWM practices. Environmental sanitation education is an essential component of the SWM system which needs to be carried out to prevent indiscriminate disposal of solid waste, thus enhancing improved service delivery. The SWC system can be impacted by user's attitude towards waste. It is therefore essential that users are sensitized on how to view waste, handle waste and how to keep the environment clean. To encourage service users to separate solid waste at source, avoid indiscriminate dumping of refuse and to pay fees for services rendered, they have to be sensitized and educated. In sum, the success or failure of a SWC system is highly dependent on awareness and attitudes of citizens towards solid waste (Mwesigye, Mbogoma, et al., 2009), (Klundert and Anschütz, 1999), (Asnani and Zurbrugg, 2008). Cointreau-Levine and Coad (2010) reported that in communities where residents have not been sensitized on the need for public cleanliness, there is the resistance in the willingness of people to pay for waste services. Similar observations were made by Mwesigye et al (2009), when they state that, waste management problems in Africa are exacerbated by the open impression of waste disposal as a welfare administration and consequently the hesitance of people to pay for waste disposal.

Findings also imply that **willingness to pay** is very imperative for the private sector to attain cost recovery which is a very essential aspect of the performance of the PS (Kassim, 2009). Kassim (2009), further argues that the continuous operation and existence of the PS is highly dependent on the recovery of operational costs which is accrued from payments made by service recipients. SWC financed by fees paid by households is recently being used in many low income countries; although studies indicate that user charges paid by households do not cover the cost incurred by the PS. The main explanation to that phenomenon was found to be low awareness of the citizens to pay fees and lack of enforcement of regulations and bye-laws by local authorities. Study findings also imply that users are willing to pay for services when they are satisfied with the services being rendered to them (USAID, 2009). This implies that when the private sector is able to improve service provision, users will also be willing to pay more for corresponding services for an improved waste management system. Again, findings imply that involvement of users in fee fixing augurs well for willingness to pay for services (Appiah Boamah, 2013).

Findings imply that strong, efficient and effective institutional structures are needed to deal with the weak enforcement of solid waste regulations (UN Habitat, 2010). Institutions are the back bone of every economy. For private sector participation in solid waste collection to yield expected results, it is imperative for strong institutions to be built with the capacity to manage public private partnerships in order to perform supervisory and monitory role. Institutions will have to be empowered and restructured to enforce bye-laws governing solid waste management as well as give private companies the necessary guidelines to operate.

Findings also mean that sold waste management as a whole has been ignored by the Adenta Municipality. The sanitation sector has been donor driven with little results. Municipalities are marginalizing the sector by not prioritizing and actually releasing funds for sanitation activities,

solid waste management inclusive. Thus, without donor projects like WASH by the Netherlands and DANIDA projects, sanitation comes to a standstill.

Findings of the study also reflect findings of several research done in developing countries. Some studies have shown increase in performance to some extent with private sector involvement. Others have also indicated that private sector involvement in solid waste management have not resulted in any significant improvements. Several of the studies attribute the inability of the private sector to deliver services to inefficient human resources of the private sector, inadequate financial resources, inadequate and inappropriate equipment and improper operations and management arrangements of private companies (Akaateba and Yakubu, 2013), (Fei-Baffoe, Atta Nyankson, et al., 2014), (Ezebilo and Animasaun, 2012), (Joshi and Ahmed, 2016), (Oduro-Kwarteng, 2011). However, these authors (who view the poor performance of the private sector as a result of internal factors), as well as other authors share a common belief that the major hindrance to solid waste collection by the private sector is as a result of weak enforcement of laws and regulations, inadequate environmental sanitation awareness, weak institutional capacities, poor performance monitoring and unclear contract arrangements (Alakinde, 2012), (Oduro-Kwarteng, 2011), (Appiah Boamah, 2013), (Fobil, Armah, et al., 2008), (Karanja, 2005), (Kaseva and Mbuligwe, 2005).

5.5 Research Conclusion

The study was intended to examine the extent to which government enabling environment influence the quality of solid waste collection services delivered by the private sector in Madina and Adenta. Based on responses from interviews and questionnaires administered as well as from observation and secondary data reviewed, enforcement of policies and bye-laws, institutional capacity of the public sector and performance monitoring influences the quality of solid waste collected in the two cities to a large extent. It is therefore essential that attention is given to the issues mentioned and improved.

In conclusion, with Africa urbanizing and demand for services, especially sanitation services increasing, it is about time cities invent innovative and sustainable ways to solve the solid waste management menace. Several recommendations and insights have been made from the studies mentioned above. It is up to the government and individuals to formulate and implement policies and solutions to these problems bedazzling developing countries especially Africa.

5.6 Recommendations

The major issues that were identified in the findings included weak enforcement of policies and bye-laws, irregularities in contract arrangements, weak institutional capacities, poor performance monitoring and inadequate environmental sanitation education which altogether results in non-performance of the private sector, low cost recovery, indiscriminate disposal of solid waste by citizens and unwillingness of households to pay for user fees. The following recommendations are therefore made:

Firstly, Municipalities must see it as an obligation to enforce bye-laws. It is imperative to fortify the approach and legitimate structure of municipalities so as to make citizens more aware of the penalties involved in engaging in illicit dumping as well as make individuals mindful that paying for solid waste should be borne by the generator as specified in the law. The ESP must be strictly enforced along with the polluter pays principle to ensure that households pay for user fees which will in turn ensure cost recovery by the private sector. It is also recommended that households are involved in fixing user fees to make willingness to pay for services easier

and convenient. The willingness of households to pay user fees is highly dependent on public awareness/environmental sanitation education and enforcement of bye-laws on illegal/indiscriminate dumping.

Secondly, capacities of municipalities should be developed and built and waste management seen as a priority by resourcing the Waste Management Departments. This will equip the staff to be able to organise environmental sanitation education for households to prevent them from engaging in indiscriminate disposal of solid waste. The capacity of municipalities needs improvement so as to be better ready to encourage, screen, and control the private sector. It is recommended that the Waste Management Department undergoes institutional restructuring to make it more responsive to the challenges of SWM and to handle the issue of weak enforcement of laws as well.

Performance monitoring must be undertaken effectively and regularly to ensure that private operators meet obligations. Performance monitoring of the private sector is imperative for an improved quality of service and compliance with contract arrangements. It is recommended that municipalities monitor regularly the manner of services delivered by the private sector to ensure quality as well as to spell out sanctions in the event of non-performance or non-compliance to bye-laws and contractual arrangements. The need for monitoring the activities of the private sector is essential to ensure that an improved quality of SWC is achieved.

It is strongly recommended that there must be an exhaustive arrangement of agreements and clear rules that shape the structure whereupon general society and private accomplices recognize and join their separate strengths. Municipalities must guarantee straightforward and focused offering methodology and also successfully screen and administer private contractors.

5.7 Areas for Further Research

The current research was aimed at shedding light on the influence of government enabling environment on the quality of solid waste collection delivered by the private sector in Madina and Adenta in Ghana. However, in the quest of doing so, the researcher stresses and acknowledges that this study was not exhaustive, hence the need for further studies to further improve solid waste collection in Ghana as a whole. These may include:

The theory of contracting the private sector requires performance monitoring to ensure improved quality of delivery. To facilitate monitoring of the service provider, it is imperative to set service standards and indicators and/or benchmarks. Study findings indicated that performance and service standards in Adenta were not clearly spelt out in contract documents to monitor PS performance. The issue of unclear service standards and benchmarks exist in most municipalities and other sectors of the economy especially the water sector (The Environmental Sanitation Policy of Ghana, 2010). This weakens performance monitoring effort and reporting. Additional studies to institute explicitly well-defined standards and indicators of service quality is required.

In the study findings, the issue of the lack of landfill site surfaced as a major hindrance to the performance of the private sector. Even though the issue of disposal/landfills is outside of the scope of the study, it is something that is worth noting in policy formulation. I recommend this issue to be a subject of further studies to ascertain how municipalities or cities can have a joint project of building a landfill site for two or more municipalities. This will be a surety of the disposal of all solid waste that is generated.

It is also imperative to conduct further research to ascertain the challenges that prevent the enforcement of regulation on indiscriminate dumping and compliance to bye-laws and payment for SWC services rendered in order to provide additional insight.

Further research on recycling, recovery and separation at source can also be considered. It was found out that Adenta generates a lot of plastic waste. These waste can be a resource to the municipality especially in an era where sustainable solid waste management concepts such as closing the loop and cradle to cradle are abundant. Further research into how recycling and reuse can be explored in Ghana and most developing countries can be considered. Recycling and reuse reduces the amount of solid waste that goes to the landfill sites and leaves little for the private sector to collect. Studies into how incineration could be considered as a means to derive extra energy to supplement electricity produced in the country and to help in solving the power crises faced by Ghana can also be considered.

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Annex 1: Research Instruments

I am Jacqueline Buadee, a Master student at the Institute of Housing and Urban Development Studies, Erasmus University in Rotterdam, the Netherlands. I am conducting this interview to understand "The Influence of Government Enabling Environment on the Quality of Solid Waste Collection Delivered by the Private Sector in Ghana'': Comparing the situation at Adenta to that of Madina. This study would help me to fulfil the requirements for the award of a Master's degree in Urban Management and Development. I therefore kindly request you to spare me some time to get an in-depth understanding of the situation by granting me this interview. I can assure you that this interview will be used for academic purposes only.

Interview Guide for Adenta/Madina Municipal Assembly Officials.
A. General information
Title.....
Department.....

Organization of Solid Waste Collection in the Municipality

1. Can you briefly explain how solid waste collection is organized in the Municipality?
2. What is your waste generation rate and how much of what is generated is collected?
3. What is the coverage of solid waste collection?
4. What is the composition of the waste generated?
5. Do you promote waste recovery, reuse and recycling? If yes, in what ways?
6. If no do you have plans of recovering, reusing and recycling waste in the future?
7. What method of solid waste disposal do you use?
8. Is the final disposal site far from the city centre?
9. Does the landfill meet sanitary standards?

Contract Arrangement

10. What type of contract exists between the Municipality and the Private Sector in service delivery and why?
11. What is the duration of the contract for the Private sector in service delivery?
12. What are the contract arrangements/terms of reference of contract?
13. How is the selection procedure carried out for private sector participation?
14. Do you set standards for working conditions for private sector involvement?
15. What major problems do you face with the private sector?
16. What type of equipment are specified in the contract agreement for solid waste collection activities in the Municipality?
17. Is the equipment property of the private contractor or the Municipality?
18. Does the municipality have its own equipment to support the private sector in the event of equipment breakdown on their part?
19. Is the contract arrangement providing full collection of all waste?

Cost Recovery

20. Which body/organization fixes user fees?
21. Who is obliged to collect user fees from users in the Municipality?
22. What does the Municipality do if users refuse to pay fees?
23. What happens when private companies end contract as a result of inability to recover cost from user fees?
24. What does the Municipality do to support the Private Sector?
25. How do you ensure that the objective of the PS is achieved?

26. Is the privatized system financially viable?
27. Is it difficult to recover cost of service? If yes why?

Institutional Capacity

28. How is the tendering process for contracting solid waste management companies organized in the Municipality?
29. Does the Municipality have feedback mechanisms for citizens (eg. complaint desks, etc.)
30. If yes, how quickly do you respond to complaints?
31. If no, how do you deal with complaints from the public?
32. Do you have a mechanism which allows service users to assess the performance of the private contractors in solid waste collection?
33. What is done to build capacities for staff who monitor and supervise the activities of the private sector?
34. What inspection, supervision, and/or performance monitoring do you provide in the areas served by private sector?
35. Does the Municipality provide community education, general public education, and public participation workshops to educate the society on solid waste management issues?
36. Does the Municipality provide any incentives to motivate/encourage performance in service delivery?
37. If yes can you mention it. If no why?

Legal and Regulatory Framework

38. Are there any policies backing solid waste collection in the Municipality?
39. Are there any bye-laws governing private sector involvement in solid waste management?
40. Are there any challenges faced in enforcing these regulations?
41. Is there a specific Department in your Municipality that ensures that laws guiding private sector service delivery are strictly followed?
42. Are there any penalties or sanctions for the private sector when they default?
43. Has the PS faulted before? If yes what went wrong and what sanctions were applied?
44. What course of action do you take if a private firm does not perform satisfactorily?
45. Is the Polluter-Pays Principle well established in the municipality to enable the private sector recover cost of service delivery?
46. If yes, is it operating successfully?
47. Does the Municipality provide any form of support in the event of inability of the private sector to provide services in a particular area?
48. If yes, what kind of support do you provide?
49. What challenges do you face in supporting the private sector in providing solid waste collection services in the municipality?
50. Based on the current conditions, do you think it is adequate for the private sector to provide solid waste according to the desired quality?
51. If no, what do you think can be done to enhance quality of service delivery of solid waste collection by the private sector in the Municipality?
52. What factors do you think hamper the private sector the most from achieving the desired quality of service?

I am Jacqueline Buadee, a Master student at the Institute of Housing and Urban Development Studies, Erasmus University in Rotterdam, the Netherlands. I am conducting a survey to understand "The Influence of Government Enabling Environment on the Quality of Solid Waste Collection Delivered by the Private Sector in Ghana'': Comparing the situation at Adenta to that of Madina. This study would help me to fulfil the requirements for the award of a Master's degree in Urban Management and Development. I therefore kindly request you to spare a few minutes to answer this questionnaire. I can assure you that this will be used for academic purposes only.

Interview Guide for the Private Service Provider

A. General information

Age..... Sex.....

Current Solid Waste Collection System

1. Can you please describe the solid waste collection services you provide in Adenta/Madina?
2. What type of equipment do you use to carry out activities?
3. Do you promote waste recovery, reuse and recycling? If yes, in what ways?
4. Are you involved in fee fixing in Adenta/Madina?
5. If no, who determines user charges in Adenta/Madina and why?
6. Does Adenta/Madina pay you promptly? If yes, how often? If no, why?
7. Are you paid according to number of trips? If no, what is the arrangement?
8. Who collects user the fees?
9. Are the fees collected regularly?
10. Do service users pay fees regularly?
11. Are the current fees adequate to recover cost of service delivery?
12. Does Adenta/Madina provide you with incentives in your operations?
13. If yes, what kind of support/incentives do they provide?
14. What course of action do you apply if users default in payment?

Quality of Service

15. How many households do you serve per day?
16. Are you able to cover all the area under your jurisdiction in a day? If No, why?
17. Do you provide street sweeping services in your area?
18. How frequent are the service areas served in a week for door-to-door collection?
19. How frequent are public containers lifted in a week?
20. How many trips of loads do you make in a day per vehicle?
21. Do you cover the waste en route to the final disposal site?
22. What type of final disposal site do you dispose of waste
23. Is the distance from service areas to final disposal sites considerate?
24. Is the road to the final disposal site in good shape?
25. Under the current conditions is it possible to deliver quality service delivery in Adenta/Madina?
26. What major challenges do you face in carrying out your duties?

27. What factors do you think hinder you the most from achieving the desired quality of service?

28. In your opinion what do think the Municipality should do to help you deliver services according to the desired quality?

Questionnaire for Households (Service Users)

Dear Respondent,

I am Jacqueline Buadee, a Master student at the Institute of Housing and Urban Development Studies, Erasmus University in Rotterdam, the Netherlands. I am conducting a survey to understand "The Influence of Government Enabling Environment on the Quality of Solid Waste Collection Delivered by the Private Sector in Ghana'': Comparing the situation at Adenta to that of Madina. This study would help me to fulfil the requirements for the award of a Master's degree in Urban Management and Development. I therefore kindly request you to spare me some time to get an in-depth understanding of the situation by granting me this interview. I can assure you that this will be used for academic purposes only.

Background Information

Street……..

Sex

a. Male b. Female

Age

(1)18–35years (3) 36 –45years (4) 46-64years (5) 65+years

Highest level of education attained

(1) Primary (2) Secondary (3) Tertiary (4) University

Current Solid Waste Collection System

1. What system of waste collection is being used in your household?
(1) Communal container service (2) Door-to Door services

2. Which private company collects the waste from your house?
…….

3. Do you separate your waste before storing it for collection?
(1) Yes (2) No

4. What type of container do you use for storing your waste?
(1) Plastic container (2) Metal container (3) Plastic bags

5. Who provided you with the container?
(1) The Municipality (2) Private service provider (3) Self-acquired

6. How many times is your waste collected by the private contractor?
(1) Once a week (2) Twice a week (3) One to three times a week

7. How reliable is the waste collection services in your household?
(1) Extremely reliable (2) Reliable (3) Not reliable (4) Extremely not reliable

8. If not reliable, what happens if waste is not collected at specified time?
(1) Indiscriminate disposal of refuse (2) Burning/Burying of refuse (3) Spill-over at most dust bins/Public containers (4) Presence of rodents/flies all over the place (5) Presence of Offensive odour (6) Others (specify)

9. Do you patronize the service delivered by the Private sector?
(1) Yes (2) No (3) others(specify)

10. If No, how do you dump your waste?
(1) By burning (2) By burying (3) Open dumping (4) Others (specify)

11. What is your opinion of the service that you are receiving for collection of solid waste from your household?
(1) Very satisfied (2) Reasonably satisfied (3) Not satisfied at all

12. If you are not satisfied with service, would you state your reason?
…….
13. How much do you pay for service provision?
(1) 50 GHC (2) 30 GHC (3) 10 GHC

14. How often do you pay?
1.Daily 2. Weekly 3. Monthly 3. Yearly

15. Is the fee affordable?
(1) Yes (2) No

16. If No how much do you suggest?
(1) 30 GHC (2) 20 GHC (3) 6 Cedis (4) Others (specify)……

17. Are you willing to pay more for improved services?
(1) Yes (2) No

18. How do you pay for your waste collection?
(1) Through Municipal revenue collectors (2) To private waste revenue collector

19. Do you pay promptly and regularly?
(1) Yes (2) No

20. Is your consent sought before user fees are fixed?
(1) Yes (2) No

21. Are you aware of the existence of Municipal Bye-laws on privatized solid waste collection?
(1) Yes (2) No

22. If yes, how did you get to know about the bye laws?
(1) Through the Municipality (2) Through the Private Service Provider (4) Through local radio station

23. Is there any public education on importance of solid waste management in your area?
(1) Yes (2) No

(2) No

24. Do you have a complaint service where you offer your dissatisfactions over service provided?
(1) Yes (2) No

25. Is action taken promptly when you complain of uncollected waste?
(1) Yes (2)No (3)Sometimes

26. Have you been given the chance to rate the performance of the service provider before?
(1)Yes (2)No

27. In your opinion, what needs to be done to enhance quality of solid waste service delivery by the private sector in Adenta?

28. Do you participate in monitoring the performance of the private contractor's activities?
(1) Yes (2) No

29. If yes, in what ways?
……

30.What factors do you think hamper the private sector the most from achieving the desired quality of service?
……
…….....

31. Any recommendations/changes you would want implemented to contribute to the quality of solid waste delivered in Adenta/Madina?
……..
……..

32. In what ways can the community contribute towards an improved quality of privatized solid waste Collection in Adenta/Madina?

Annex 2: Code List

Code-Filter: All

HU: Thesis
File: [C:\Users\Amoasiwaa\Desktop\Interviews\Project one.hpr7]
Edited by: Super
Date/Time: 2016-08-08 23:41:58

Organization of Solid Waste
Recycling and Reuse
Availability of Landfill Sites
Contract Arrangements
Potential of Cost Recovery
Legal and Regulatory Framework
Existence of Policies and Bye-Laws
Enforcement of Policies and Bye-Laws
Institutional Capacity
Environmental Sanitation Education
Quality of Service
Constraints of Private Sector and Solutions

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