

**UNIVERSITY OF GHANA, SCHOOL OF BUSINESS
DEPARTMENT OF PUBLIC ADMINISTRATION AND HEALTH SERVICES
MANAGEMENT**

**PUBLIC-PRIVATE PARTNERSHIPS IN SOLID WASTE MANAGEMENT IN
GHANA, THE CASE OF ACCRA METROPOLITAN ASSEMBLY**

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**THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON, IN
PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF A
PHD PUBLIC ADMINISTRATION DEGREE**

JULY, 2018

DECLARATION

I, Emmanuel Owiredu Akonnor, hereby declare that this is my original work presented to the Graduate School, University of Ghana, Legon, for the award of a Doctor of Philosophy Degree in Public Administration and Policy Management. I affirm that this Thesis, written by me, has never been presented to any institution for the award of any degree. All the references cited in the study have been duly acknowledged. I reaffirm that I bear sole responsibility for any shortcoming(s) identified in the Thesis.

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CERTIFICATION

We hereby certify that this work was duly supervised by us the under listed supervisors in accordance with procedures laid down by the Graduate School of the University of Ghana, Legon.

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DEDICATION

The Thesis is dedicated to the memories of my late loving parents, *Mr. Eric Darko Akonnor* and *Madam Dorcia Adu Asare*; and my late siblings, *Mr. Stephen Bright Adu* and *Andrews Aburam Adu*. You did not stay long to witness this glorious moment of mine as I graduate with a PhD. May your souls enjoy eternal rest with the Lord.

The Thesis is also dedicated to my strength, my joy: *Eric Darko Akonnor*, *Dorinda Nana Adwoa Akonnor*, *Dorcia Awura Adwoa Akonnor* and *Emmanuel Owiredu Akonnor (Jnr)*; and the mother of the house, *Mrs. Sabina Ansu Akonnor*, my sweet darling.

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LIST OF FIGURES

2.1	Stakeholders in solid waste management	56
2.2	Conceptual framework for SWM in the Accra Metropolis	71
3.1	Statutory Map of Accra Metropolitan Assembly	Liii
5.1	Institutional pluralism and stakeholders	137
5.2	Pie chart showing householders perspective on stakeholdership	141
5.3	Pie chart showing responsibilities of householders	161
5.4	Bar chart showing generated responses of householders	171
5.5	Pie chart showing the nature of meetings	175
6.1	Integrated sustainable solid waste management model	187
6.2	Bar chart showing key success factors	195
6.3	Pie chart showing the benefits of the franchising agreement	202
6.4	Histogram showing problems identified by householders	206

LIST OF TABLES

2.1	Overview of problems facing municipal solid waste	35
5.1	Householders' understanding of stakeholders	140
5.2	Approved monthly fees for householders	153
5.3	Responsibilities of householders	160
5.4	Stakeholder interactions	170
5.5	The nature of meetings	174
5.6	Perceived communication gap	176
5.7	Connecting householders with mobile telephones	179
6.1	Key success factors	195
6.2	Benefits of the franchising agreement	201
6.3	Problems identified by householders	205

TABLE OF CONTENT

Declaration	i
Certification	ii
Dedication	iii
Acknowledgement	iv
List of Figures	viii
List of Tables	ix
Table of Content	x
Abstract	xv
Appendix 1 (References)	xviii
Appendix 2 (Abbreviations)	lii
Appendix 3 (Statutory Map of AMA)	liv
Appendix 4 (Interview Guide, AMA)	lv
Appendix 5 (Interview Guide, Contractors)	lviii
Appendix 6 (Questionnaires, Householders)	lxi

Chapter One

Introduction to the Study	1
1.1 Introduction	1
1.2 Background to the Study	1
1.3 Problem statement	5
1.4 Objectives of the Study	10
1.5 Research questions	11
1.6 Significance of the Study	11
1.7 Terminologies	13
1.8 Chapter organization	17

1.9	Conclusion	19
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Chapter Two

Literature Review	20
2.1 Introduction	20
2.2 Background of Solid Waste Management in West Africa	20
2.2.1 Municipal solid waste	20
2.2.2 Magnitude of municipal solid waste in West Africa	22
2.2.2.1 Guinea	23
2.2.2.2 Liberia	23
2.2.2.3 Nigeria	24
2.2.2.4 Senegal	26
2.2.2.5 Sierra Leone	27
2.2.2.6 Solid waste situation in Accra, Ghana	28
2.2.3 Factors constraining SWM in developing countries	32
2.2.3.1 Financial constrictions	32
2.2.3.2 Attitude and culture	33
2.2.3.3 Operational inefficiency	34
2.3 Public-Private Partnership Agreement	35
2.3.1 Conceptual issues	36
2.3.2 Justification for the use of PPP	38
2.3.3 Types of PPP	40
2.3.4 Public-Private Partnership in solid waste management	41
2.3.4.1 Benefits of PPP in SWM	41
2.3.4.2 Success factors	43
2.3.4.2.1 Pre contract phase	44
2.3.4.2.1.1 Openness	44

2.3.4.2.1.2 Transparency	45
2.3.4.2.2 Contract phase	45
2.3.4.2.2.1 Structural conditions	45
2.3.4.2.2.2 Tactfulness in the PPP process	46
2.3.4.2.2.3 Roles	47
2.3.4.2.2.4 Resources	47
2.3.4.2.2.5 Risk arrangements	48
2.3.4.2.3 Post contract phase	49
2.3.4.2.3.1 Monitoring and supervision	49
2.3.4.2.3.2 Standards and accountability	50
2.3.4.3 Challenges facing PPP in SWM	51
2.3.4.3.1 Secrecy in contracts	51
2.3.4.3.2 Inexperienced technical staff	52
2.3.4.3.3 Poor preparation	52
2.3.4.3.4 Bad faith of local policy elites	53
2.3.4.3.5 Poor engagement and inadequate consultations	54
2.4 Actors and stakeholders in SWM	55
2.4.1 Institutional pluralism	56
2.4.1.1 State/public sector involvement	57
2.4.1.2 Market/private sector involvement	59
2.4.1.3 Informal sector involvement	60
2.4.1.4 Role of NGOs and CBOs	61
2.5 Theoretical literature	63
2.5.1 Sociological theories	63
2.5.2 Public Choice	63
2.5.3 Principal-Agency theory	65
2.5.4 Property Rights	67

2.6	Conceptual framework	69
2.7	Empirical literature	71
2.8	Conclusion	76

Chapter Three

Research Methodology and Study Area	77	
3.1	Introduction	77
3.2	Research methods	77
3.2.1	Research paradigm	77
3.2.2	Research design	78
3.2.3	Research methodology	79
3.2.4	Sources of data	80
3.2.4.1	Primary data	80
3.2.4.2	Secondary data	81
3.2.5	Target population	81
3.2.6	Sample size	82
3.2.7	Sampling procedure	83
3.2.8	Research instrumentation	85
3.2.9	Scope and limitation of the study	87
3.2.10	Data Management	89
3.2.10.1	Transcription of data	89
3.2.10.2	Reliability of data	90
3.2.10.3	Pilot study	90
3.2.10.4	Ethical consideration	91
3.2.10.5	Respondents confidentiality and identification	92
3.3	Study Area	93
3.3.1	Introduction	93

3.3.2	Accra Metropolitan Assembly in perspective	93
3.3.3	AMA categorizations	95
3.4	Conclusion	97

Chapter Four

Institutional arrangements for PPP in SWM in the Accra Metropolis		98
4.1	Introduction	98
4.2	Theoretical overview	101
4.2.1	Conceptualizing institutions and institutional structures	101
4.2.2	Policy framework	102
4.2.3	Franchising agreement	104
4.2.4	Transparency	108
4.2.5	Procurement requirements	110
4.2.6	Administrative mechanisms and supportive organizational structure.....	115
4.2.6.1	Establishment of sanitation courts	116
4.2.6.2	The legal department	118
4.2.7	Governance structure	121
4.2.7.1	Participation	122
4.2.7.2	Accountability	125
4.2.7.3	Efficiency and effectiveness	127
4.2.8	Zoning the Metropolis	128
4.3	Conclusion	131

Chapter Five

Roles and responsibilities of stakeholders in the partnership arrangement		133
5.1	Introduction	133
5.2	Theoretical and conceptual frameworks	135

5.2.1	Theoretical framework	135
5.2.2	Conceptual framework	137
5.2.2.1	Institutional pluralism	137
5.3	AMA stakeholders' perspective	139
5.3.1	The role of AMA	142
5.3.1.1	Mandating contractors and subsequent zoning	142
5.3.1.2	Registering householders	144
5.3.1.3	Monitoring and supervision	144
5.3.1.4	Termination and extension of contracts	150
5.3.1.5	Processing offenders for court	151
5.3.1.6	Fee determination	152
5.3.2	Role of the private sector	153
5.3.2.1	The formal private sector	154
5.3.2.1.1	Household registration	154
5.3.2.1.2	Provision of waste bins	154
5.3.2.2	The private informal sector	156
5.3.3	Role of householders	158
5.4	Stakeholder interactions	163
5.4.1	Interacting with the Metropolitan Assembly	163
5.4.2	Interacting with fellow contractors	165
5.4.3	Interacting with householders	167
5.4.4	Householders interactions with contractors	170
5.4.5	Restoring service failure	172
5.4.6	The meeting environment	173
5.5	Communicating with stakeholders	176
5.5.1	Perceived communication gap	176
5.5.2	Adopting mobile technology to Improve communication	179

5.6	Conclusion	181
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Chapter Six

The success and constraining factors to PPP in SWM in the AMA	184	
6.1	Introduction	184
6.2	Conceptual framework	186
6.3	Success and constraining factors	188
6.3.1	Enabling factors	189
6.3.1.1	Transparency and openness	189
6.3.1.2	Clear territorial demarcation	190
6.3.1.3	Financial encumbrance reduced through polluter pays principle	191
6.3.1.4	Involvement of stakeholders in Franchising implementation	191
6.3.1.5	Cooperation from the partners	193
6.3.2	Benefits of the franchise agreement	198
6.3.2.1	Transfer of risks from public to private partner	198
6.3.2.2	Increase in coverage of household collections	199
6.3.3	Factors inhibiting the franchise agreement	203
6.3.3.1	Refusal households to register	204
6.3.3.2	Illegal dumping of solid waste	207
6.3.3.3	Lack of contractor-household engagement	208
6.3.3.4	Failure to pick solid household wastes in time	209
6.3.3.5	Challenges with fee fixing	213
6.3.3.6	Inadequate dumping site	214
6.3.3.7	Poor road networks	217
6.3.3.8	Non-enforcement of by-laws	219
6.3.3.9	Ineffectiveness of Sanitation courts	220
6.3.3.10	Financial constraints	221

6.3.3.11 Competition from the informal sector	223
6.3.3.12 Inability to segregate solid wastes at source	225
6.3.4 Sustaining the success story	228
6.4 Conclusion	231

Chapter Seven

Summary, Conclusions and Recommendations	234
7.1 Introduction	234
7.2 Summary of findings	234
7.2.1 Institutional arrangements for SWM in the AMA	235
7.2.2 Roles and responsibilities of stakeholders	236
7.2.3 Success and constraints encountered in the PPP process	237
7.2.4 More room for improvement	238
7.3 Conclusions	239
7.4 Recommendations	241
7.4.1 Tripartite participation in fee fixing	241
7.4.2 Policy on solid waste segregation	241
7.4.3 Availability of engineered landfill sites	242
7.4.4 Provision of landfill sites in the hinterlands	243
7.4.5 Enforcement of by-laws	244
7.4.6 Partnership with academia	244
7.4.7 Catch them young	246
7.4.8 Financial support	246
7.4.9 The establishment of solid waste Bank	248
7.4.10 Improved payment system for fee collection	249
7.4.11 Charging by weight	250
7.4.12 Improvement in road networks	251

7.4.13	Subsidies on importation of equipment and logistics	252
7.4.14	Regularization of activities of the informal sector	253
7.5	Contribution to knowledge	254
7.5.1	Openness, transparency, and communication	254
7.5.2	Harmonizing the operations of the private Waste Contractors	255
7.5.3	Interaction between PWC to influence policies	255
7.5.4	Effective engagement between PWC and householders	255
7.5.5	Enhancing monitoring redress and sanctions	256
7.5.6	Regularizing the activities of the informal waste collectors	256
7.5.7	Integrated solid waste management	256
7.5.8	Changing the PPP nomenclature to PPAP	257
7.5.9	Charging household waste by weight rather than the flat rate	257
7.5.10	Tripartite arrangement in SWM	258
7.6	Suggestions for further research	259
7.7	Conclusion	259

ABSTRACT

Solid waste management in Accra Metropolitan Assembly (AMA), like most cities in developing countries, has been fraught with challenges in recent times. The rate at which household wastes are generated within AMA cannot be matched with the rate of collection or clearing waste from the city. The rapid generation of household wastes occurs as a result of rapid population growth, rapid urbanization and improvements in the socio-economic wellbeing of citizens who have occasioned the demand for consumable goods. In an attempt to ensure effective urban crisis management, AMA adopts the PPP as a dominant strategy to ameliorate the deteriorating urban solid waste situation. In this regard, the study aims at investigating the roles of the main actors in the partnership arrangement of solid waste management in Accra Metropolis. The population of the study consisted of AMA officials, contractors and householders who were purposively selected. AMA adopted the franchising typology of polluter pays principle as a dominant strategy to ameliorate the deteriorating urban solid waste situation. In order to strengthen her institutions for the arrangement, AMA established policy frameworks including procurement requirements, transparency and zoning as blue prints to guide the implementation of the PPP agreement. On a positive note, the study observed that the franchising arrangement has chalked successes as a result of the demarcation of territories to the contractors, active stakeholder participation, transparency and openness that characterized the transaction processes. Nonetheless, the study identified logistical constraints, inadequate flow of funds, inability to segregate solid wastes at the household level, the dominance of the tricyclers and weak enforcement of by-laws as some of the challenges AMA was confronted with, thus, preventing the effective achievement of the

overall objective of eliminating solid wastes from homes of residents in the jurisdiction. The study recommends the establishment of a strong collaboration among stakeholders, the adoption of integrated solid waste management system, adequate and regular flow of funds to the contractors to sustainably resolve the solid waste crisis.

CHAPTER ONE

INTRODUCTION TO THE STUDY

1.1 Introduction

The chapter presents an introduction to the entire research. The chapter comprises a background statement, problem statement, research objectives and research questions. The chapter ends with the structure of the thesis which gives an indication of how the entire study has been divided into individual chapters.

1.2 Background to the Study

Managing solid waste, particularly solid waste generated from homes (Fodor & Klemes, 2012; Awosan, Oche, Yunusa, Raji, Isah, Aminu, Nkwoka & Kuna, 2018; Oelofse, Nahman & Godfrey, 2018) seem to be problematic for many urban managers especially in the fast growing urban areas in the third world (Okot-Okumu & Nyenje, 2011; Saidou & Aminou, 2015; Adams & Klobodu, 2018). Generally, the challenges of solid waste management are pronounced particularly in the African, Asian and the Latin American continents (Babayemi & Dauda, 2009; Kwailanea, Gwebu & Hambira, 2016). Extant literature on solid waste management has largely documented the urban sanitation problem and the poor solid waste management situation associated with developing countries (Ahmed & Ali, 2006; Shekdar, 2009). This is largely attributable to urbanization, population growth and economic development of the developing world in recent times (Jing et al., 2009; Song et al., 2016; Awosan et al., 2018). A study by Ahmed

& Ali (2006) also indicates that waste generation has failed to obtain the corresponding management capacity to deal with the increasing production levels. This in the view of Godfrey et al., (2018) occurs in most instances because there is always a ‘backlog’ of solid waste, thus, leaving piles of solid waste which continue to degenerate the already poor sanitation situation of the developing world (Okot-Okumu & Nyenje, 2011; Adams, & Klobodu, 2017) with associated health and disaster challenges (Yongsi et al., 2008; Yang et al., 2018). The African Development Bank (AfDB, 2012) indicates that about fifty four percent (54%) of the population in Africa have access to adequate solid waste provisions.

According to Ezeah & Roberts (2012:9), frantic efforts have been made by both developed and developing economies’ managers to deal with the problem (of solid waste) on sustainable basis because good waste management practices “continually improve the environment, provide direct health benefits, support socio-economic productivity and provide safe, dignified and secured employment”. In view of these, responsible countries have put in place environmental reforms to deal with the chronic waste problem in order to promote healthy living for their nations (Adams, & Klobodu, 2017). The waste situation is more exacerbated in urban cities of the developing world, especially in Sub-Saharan Africa and Asian countries (Majani, 2003; Halla et al., 2008; Calo & Parise, 2009). Evidence indicates that African and Asian countries are likely to experience rapid rates of urbanization up to 56% and 64% respectively than any other region by the year 2050 (UNDESAPD, 2014; Awosan et al., 2018). This would have dramatic impact on the sustainability of their development agenda particularly in the two continents. In most

communities in Sub-Saharan Africa, managers of municipalities and Metropolis' are constricted, hence, are not able to pick, perhaps, half of the generated solid waste. This stems from the fact that these urban slums more often than not lack access to facilities for the proper disposal of solid wastes (Kapepula et al, 2007; Okot-Okumu & Nyenje, 2011).

Solid waste management (SWM) is a phenomenon that requires effective strategy in tackling the menace. Conventionally, solid waste management had exclusively been the reserve of the public sector (Soukopova et al., 2016; Godfrey et al., 2018) and its issues were solely executed by city authorities (Sawell et al., 1996; Massoud et al., 2003). Experiences from developing countries including Ghana provide ample evidence that SWM arrangement can no longer cope with or respond appropriately with the growing complexities in waste generation (Shekdar, 2009; Amoah & Kosoe, 2014). In other words, many urban cities' experience with public sector solid waste management has largely failed to deliver the requisite expectations (Kassim & Ali, 2006; Bessonova, 2012). Indeed, solid waste generation and its attendant problems are increasing by the day as a result of a gamut of factors including rising population (Adams et al., 2016, Adams & Klobodu, 2018), low technological capacity and inadequate financial support (Massoud et al, 2003; Zia & Devadas, 2008; Ababio, 2010; Okot-Okumu & Nyenje, 2011; Saidou & Aminou, 2015). These have encumbered the efficiency of the public sector in effectively dealing with the solid waste crisis. Rapid economic development, coupled with population growth, increased prosperity (Adams et al., 2018) and tourism development in recent years have also contributed to the rise in volumes of solid waste

generated, thus, exerting great pressure on city authorities' ability to manage the solid waste load (Song et al, 2016).

The foremost constraints associated with poor public sector provision of municipal services include: inflexible work schedules, excess staff, obsolete machinery, overburdened procurement measures (Wortzel & Wortzel, 1989; Mudzengerere & Chigwenya, 2012; Godfrey et al, 2018) and poor cultural practices (Douglass, 1966; Brown, 2015). According to scholars (Kassim & Ali, 2006; Godfrey et al., 2018), additional challenges include inflexible work programmes, poor supervision, inadequate logistics, powerful worker unions and technical problems. In their attempt to address the solid waste challenge, most urban governments have sought to inject extra expertise and strength beyond the state or local government sector through agreements that seek to stimulate the competencies of the private sector (Talyan, Dahiya & Sreekrishnan, 2008; Dhere, Pawar, Pardeshi & Patil, 2008; Kwailanea et al., 2016) in complementary arrangements referred to as public-private partnerships (Little, 2011).

Ghana has defined Public-Private Partnerships (PPP) as “a contractual arrangement between a public entity and a private sector party with a clear agreement on shared objectives for the provision of public infrastructure and services traditionally provided by the public sector” (GNPPPP, 2011:2). This involves medium to long-term contractual arrangements involving the public sector and private sector institutions in which the private entity is assigned with a task to provide substantial phases of the building and operation of an infrastructure for the provision of public services (Henry, Yongsheng &

Jun, 2006; Iossa, Spagnolo & Vellez (2013) further explain that the public sector through this arrangement need to provide the private partners with such responsibility whilst both partners engage in risks, costs and benefits sharing provisions. Public-Private Partnerships are being observed all over the world and are based on the notion that additional significance could be achieved through the tapping of knowledge and co-production in a synergistic manner (Sullivan & Skelcher, 2002; Klijn, Edelenbos, Kort & Twist, 2008).

In Ghana, there have been several examples and forms of PPP arrangements for managing urban solid waste. These forms include service contracts, management contracts, concessions, private sector participation, privatization, build-own-operate and transfer (BOOT), build-operate and transfer (BOT) and public-private sector collaboration including franchising. This study, thus, assesses the experience of the public as well as the private partnership collaboration in the administration of household wastes using the Accra Metropolitan Assembly (AMA) and selected private partners as case study in Ghana.

1.3 Problem Statement

Developing countries in general face profound challenges in managing solid waste (SW) in that the rate of waste generation does not correspond with the collection and management capacities of city authorities. Generally, evidence suggests that between thirty (30) to eighty (80) percent of the solid wastes produced in third world countries are

never pulled together (Palczynski & Scotia, 2002; UNEP, 2005). This point corroborates the assertion of Wilson, Rodric, Scheinberg, Velis & Alabaster, (2012) that data from other parts of developing countries give credence to low collection rates (sometimes below forty-five percent (45%) of the entire solid waste produced (Myers, 2017). By and large, managers of cities in developing countries tend to collect solid wastes in accessible neighbourhoods which are occupied by elites and influential people, including politicians (Zurbrugg, 2003; Adams et al., 2018) leaving the poor localities unattended to.

On the African continent, there is ample evidence to attest to the fact that taking good care of solid waste in urban cities have become daunting, a task with associated environmental threats as well as other waste induced environmental challenges (Awosan et al., 2018). The crisis in urban SWM appears to be a general challenge in Africa as has been reported in Botswana (Kwailanea et al., 2016), Egypt (Ibrahim & Mohamed, 2016), Ethiopia (Lohri, Camenzind & Zurbrugg, 2014), Ivory Coast (Andrianisa et al., 2016), Kenya (Gakungu, Gitau, Njoroge & Kimani 2012), Niger (Saidou & Aminou, 2015), Nigeria (Ezeah & Roberts, 2012; Anestina et al., 2014), Tanzania (Chengula et al., 2015); Uganda (Okot-Okumu & Nyenje, 2011; Lederer et al., 2016) and Zimbabwe (Mudzengerere & Chigwenya, 2012). The difficulty in providing a satiable waste management service proportional to the growing request for effective waste management provision is symptomatically ascribed to those bothering on institutions, financial challenges and technical constraints affecting the various levels of governance, both at the national and local levels including non-state partners or the private sector (Oteng-Ababio et al., 2012; Adams, & Klobodu, 2017; Adams et al., 2018). For instance, Amoah

& Kosoe's (2014) study of solid waste management in the Wa municipality portrayed a deficit of 594 tons of solid waste remaining unattended to on a daily basis. According to Anestina et al. (2014), this poses threats to human health, wealth and the environment. This stems from the fact that waste generation in the municipality far exceeds the rate of collection or managing capacities of the city authorities (Yang et al, 2018).

The situation is not endemic to Wa alone, but also occurs at an accelerated pace, especially in the highly urbanized cities of Ghana including Sekondi - Takoradi (Baabereyir, 2009), Kumasi (Obeng et al., 2009; Owusu Sekyere et al., 2013) and Accra (Oteng-Ababio, 2010; 2012). Fobil et al. (2010), using cases from Ghana and Nigeria observes that the absence of a robust management plan to deal with solid waste issues is a bane to solid waste management in the developing world. Poor management on one hand and inherent resource challenges on the other has exacerbated the phenomenon (Awosan et al., 2018). For instance, Senkoro (2003) and Anestina et al. (2014) indicate that in spite of city authorities in the developing world channeling 20% to 50% of their funds (Godfrey et al., 2018) to the solid waste sector, less than thirty per cent (30%) of urban population accesses appropriate but steady municipal services. It is, thus, common place to observe collections or piles of solid waste lining the streets and pavements of many urban cities in Ghana (Adams et al., 2018) and thereby having a cascading effect on other related issues including flooding and outbreak of cholera, among others (Owusu-Sekyere et al., 2013; Awosan et al., 2018).

Responding to this urban waste management challenge, many city authorities have engaged the private sector in various partnership models to help resolve the crisis (Kaseva & Mbuligwe, 2005; Kassim & Ali, 2006). The private sector is believed to be resourced by way of assets such as neutrality in politics, economic rationality, performance efficiency; vibrancy and innovativeness to tackle the menace. These qualities enable them to meet requirements which are satisfactory to initiatives of the public sector (Boorsman, 1994). Indeed, the engagement of the private partner in the municipal solid waste collection is a crucial environmental policy in the US and UK where private sector interventions account for more than 80% of solid wastes collected in their cities (Lin & Kao, 2008). According to Lin & Kao (2008), the private sector efficiently collected the generated solid wastes especially during the early parts of the twentieth century. In cities of third world countries, collection rates range between 34% and 50% (Ojewale, 2014). Governments in less developed countries have therefore increased the involvement of the private sector in the provision of solid waste collections for the people.

Of late, private sector partnering public authorities for urban waste management has seen much upsurge in African cities. In other words, there are ample literature reports on the activities of the private partner in municipal solid waste management in Ghana (Oteng-Ababio, 2009); in Tanzania (Kaseva & Mbuligwe, 2005; Ndubuya, 2006), in Kenya (Henry, et al., 2006) and in Uganda (Tukahirwa et al., 2010). This suggests that their (private sector) intervention in municipal solid waste management is not a new phenomenon in African countries (Kassim & Ali, 2006). The literature has argued that

there exist key indicators which have influenced the propensity of PPPs to either succeed or perform poorly (Iossa et al., 2013). For instance, Domfeh (2002) discusses three key concerns that city authorities should pay peculiar attention to in their quest to ensure efficiency and effectiveness theorized to be associated with PPP in urban solid waste management. Firstly, there must be adequate competition with at least two or more bidders to enhance the selection process. Secondly, the procedures for making decisions become crucial in the recruitment and selection of experienced private partners. Lastly, he implores city authorities to provide adequate monitoring (role) of the activities of the private sector. These researchers (Massoud et al., 2003; Anestina et al., 2014; Yeboah-Assiamah, 2015) corroborated Domfeh's (2002) assertion by suggesting that the successes chalked by any meaningful PPP project in solid waste management hinges on effective monitoring and supervision of solid waste operators.

The question one may ask then is: what are the main reasons that produce mixed results in PPP implementation? In spite of the various forms of PPPs that are adopted, there are mixed reports with regard to the experiences and performance of PPP and urban solid waste management (Miraftab, 2004 & Gonzalez-Gomez et al., 2014). The varying experiences suggest that particular arrangements (between the public and private partners) and conditions underpinning PPP contracts play contributory roles to overall outcome (Chong et al., 2006; Oduro-Kwarteng, 2011; Iossa et al., 2013). Even though private partners have been engaged in household waste collection and deposition (in landfill sites) in many urban communities of developing countries, the waste situation

still remains questionable. In most cases, as indicated by Amoah & Kosoe (2014), there is a backlog of tons of solid waste which remain largely uncollected.

This, therefore, poses a great need for researchers to contextually assess the prevailing experiences of specific arrangements for public-private partnerships. The study discusses Accra Metropolitan Assembly's experience(s) with the adoption of PPP in managing solid waste.

1.4 Objectives of the study

The foremost objective of the study is to assess the role of public-private partnerships in solid waste management in Ghana and the experience of Accra Metropolitan Assembly with selected private waste management companies. Generally, from the system's theoretical perspective, the study assessed the performance of the franchising agreement between the AMA and their private contractors. The study sought to address the specific objectives which have been outlined below:

- i. To examine the institutional arrangements and approaches that underlies PPP in SWM in AMA.
- ii. To examine the main actors and the roles each (actor) plays in the partnership arrangement in the Accra Metropolis.
- iii. To assess the success as well as the constraining factors in the partnership arrangement in the Accra Metropolis.

1.5 Research questions

In achieving the above objectives, the study proposed the following research questions as a guide. They are:

- i. What are the institutional arrangements for PPP in SWM in the Accra Metropolitan Area
- ii. Who are the main actors, the roles they play and the level of interaction among the stakeholders in the franchising arrangements with Accra Metropolitan Assembly?
- iii. How do contextual issues affect the success or constrain the effectiveness of the public-private partnership arrangements in solid waste management in the Accra Metropolitan area?

1.6 Significance of the study

Solid waste challenges continue to be an albatross around the necks of managers of urban cities in developing countries. This has contributed to environmental health hazards (Amoah & Kosoe, 2014) with socio-economic implications (Ayomoh et al., 2008) in Accra, in spite of the myriad PPP arrangements that have been adopted over the past five years. A study proposing to assess the forms, principles, stakeholders and constraints of PPP in SWM cannot therefore be over-emphasized. The significance of this study is

discussed in terms of its contribution to policy, contribution to practice and contribution to literature as outlined below.

1.6.1 Contribution to policy

Public Policy aims at obtaining feedback and input from the environment so as to continuously improve (policy) outcomes. The study actively assessed key challenges that constrained effectiveness of PPP in SWM by engaging actively with key stakeholders from both the public and private sectors. This provides a wider perspective and unveils the broader picture which informs the study's conclusions and recommendations. These recommendations and conclusions were to be of interest to key stakeholders in the policy making process regarding solid waste management.

1.6.2 Contribution to practice

The study dug deeper into the key success factors including the challenges facing the management of solid waste in urban domains and the mechanisms put in place to overcome them. Thus, the study provides city planners and administrators effective approaches to PPP in SWM in the country (Ghana) and beyond.

1.6.3 Contribution to literature

Urban solid waste and its proliferation is a phenomenon whose situation appears to get worse by the day in spite of PPP arrangements adopted in various cities to deal with

SWM. In this regard, this study serves as a revelation to persons who are not enlightened about the excruciating nature of solid waste management in Ghana. The study further adds to the growing body of literature on the concept, the inherent challenges as well as mechanisms to ensure success in such undertakings.

1.7 Terminologies

The following expressions were adopted as working definitions for the study.

1.7.1 Actors

They are the major players whose collective efforts brought to being solid waste management in the Metropolis. These major actors in the Metropolis are AMA, the contractors and householders.

1.7.2 Effectiveness

Effectiveness is the efforts made to produce results that are wanted or intended

1.7.3 Efficiency

Efficiency is the ability to accomplish or fulfill what is intended. According to Guerrero et al., (2013), efficiency in Solid Waste Management occurs when actors play active roles

through resource availability and professional knowledge of household waste supervision in the value chain. Efficiency is also achieved when there is reliable data, adequate legal framework and the presence of satisfactory policies to drive the waste management efforts. Guerrero et al. (2013) went on to conclude that an efficient system requires well-organized monitoring and evaluation of the system and the involvement of Metropolitan authorities.

1.7.4 Public sector

The public sector, according to Ahmed & Ali (2004), refers to public organizations or institutions. Public sector actors or players in the management of solid waste include the Ministry of Local Government and Rural Development (MLGRD), the Metropolitan, Municipal and District Assemblies (MMDAs) and the Ministry of Sanitation and Water Resources (MSWR), among others. The powers of the public sector are defined by law, regulations and policies which are derived from the central administration.

1.7.5 Private actors (the formal private sector)

Officially, private sector actors are those registered organizations that carry out municipal services in the Accra Metropolis. They engage in formal collection, transportation and disposal and to an extent, recycling of the solid waste collected. The formal private sector has been licensed by AMA to operate in the Metropolis. The actors under this include Asadu, J. Stanley Owusu, Zoomlion, Jekora Ventures, Daben, Liberty and ABC Waste.

1.7.6 Private actors (the informal sector)

They are small scale enterprises that operate in the Metropolis. They are unregulated, unregistered and unlicensed. They are made up of individuals or groups who carry solid wastes on their heads, waste pickers, itinerant buyers, scavengers and tricycle operators (Wilson et al., 2009). They contribute a great deal to the collection of solid waste in sections of the second and third class zones in the Metropolis and in the process compliment the efforts of the private formal contractors. One feature about the informal sector is that they go about their activities freely as they attempt to make ends meet.

1.7.7 Franchising

It is defined as an ongoing relationship that exists between two firms in which the franchisor offers concession(s) to the franchisee to do business by offering assistance in the organization, marketing and management of the firm in exchange for financial benefits (Doole & Lowe, 2000). Franchising is also called Concession. In this study, AMA is the franchisor who has allowed the franchisees, the contractors, to pick solid wastes from households on their behalf for a fee.

1.7.8 Householders

They are residents who generate solid wastes from homes. They are required to hand over their generated solid wastes to accredited contractors for onward transportation to landfill sites. The quantity of solid wastes generated in homes is a factor of family composition, educational standard, income level, family size and urbanization.

1.7.9 Polluter Pays Principle

The polluter pays principle, abbreviated as pop, is a mechanism whereby the individual or firm whose activity pollutes the environment is charged for the contamination to be eradicated (Arbulu et al., 2016). This principle guides the franchising arrangement in the Accra Metropolitan Area. By this arrangement, the householders pay for the services rendered by the contractors in the Metropolis.

1.7.10 Solid waste

Solid waste connotes used and leftover materials such as kitchen waste; waste on the streets, construction and demolition wastes as well as biomedical wastes which are produced by householders, pedestrians, constructors and those who work in health facilities. These are abandoned or discarded into the environment (Pattnaik & Reddy, 2010). Solid wastes generated from households in the Metropolis include agricultural wastes, food leftovers/particulates, glasses, metallic objects and plastic materials.

1.7.11 Stakeholders

Guerrero et al. (2013) posits that stakeholders are people and/or organizations who have interest in the adequacy of managing solid waste in a geographical domain. The actions of stakeholders influence the success or otherwise of the solid waste management efforts in the Metropolis. The stakeholders that are identified in the Accra Metropolis include AMA, the Ministry of Local Government and Rural Development (MLGRD) and

Ministry of Sanitation & Water Resources (MSWR), NGO's, CBO's, scavengers, waste pickers, contractors, the informal sector, households and individuals, among others.

1.8 Chapter organization

The entire study has been divided into seven chapters. Chapter One introduces the entire research project. The chapter comprises background to the study, problem statement as well as research objectives and research questions, significance of the study and ends with chapter organization which shows how the entire study was organized into individual Chapters.

Chapter Two reviews literature on theoretical framework and related theories used for the study. Issues discussed in this chapter include public-private partnership, solid waste actors and stakeholders, urban management of solid waste; principles to enhance effective PPP and challenges in PPP, among other related concepts. Again, the Chapter reviews the theoretical and conceptual frameworks that underpinned the study.

Chapter Three introduces the research methods that were adopted for the study. Sub-topics such as research paradigm, research design, source of data, sampling techniques were discussed. It again discussed the study area of the research.

Chapter Four of the study examines the institutional arrangements of PPP in solid waste management in Ghana and the approaches adopted by the Accra Metropolitan Assembly to deal with the urban crisis. Issues discussed under this included transparency in

selection, enhancement of healthy competition, procurement requirements and the administrative mechanisms put in place to ensure successful arrangements with the private sector.

Chapter Five addresses issues of key stakeholders of the PPP, their respective roles/stakeholders, monitoring and supervision activities, termination and extension of contracts and how service failures were handled. It also analyzed the level of interactions within the stakeholdership, among others.

Chapter Six considered the factors that have enabled the Metropolis to achieve success in the PPP in SWM as well as the factors that have constrained the effectiveness of PPP arrangements in the Accra Metropolis. The key success factors included the tendering processes, the delineation of the Metropolis into service zones for operational effectiveness and co-operation from partners. The constraining factors include financial, transport cost, bad roads and the illegal competition waged by the informal sector especially the tricycle operators.

Chapter Seven presents the summary, conclusions and recommendations of the study. The recommendations included policy on segregation of wastes, recycling, provision of engineered sites and cooperation with academia to encourage efficiency and effectiveness in the sector.

1.9 Conclusion

The chapter introduces the core issues that were discussed in the entire work. Issues discussed included the problem statement, objective of the research and chapter organization. In all, seven chapters reflecting on core issues treated in the Chapter were discussed.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter discusses pertinent literature on PPP in SWM as well as other related concepts for this study. The chapter is classified into theoretical literature and empirical literature. Theoretical literature explores extensively, literature on key conceptualizations of public-private partnership and solid waste management and its approaches. Considering the fact that the phenomenon under study has to do with public issues, the study adopted the Public Choice, Functionalism and System's Theory as the theoretical framework for the study. The empirical literature reviews researches that establish the relationship between theory and practicality and to discover research gaps in such studies. . The Chapter has been divided into six sections. Section 2.1 deals with the introduction; Section 2.2 treats municipal solid wastes; Section 2.3 considers PPP in SWM; Section 2.4 deals with the problems facing PPP in SWM in the Metropolis, Section 2.5 covers theoretical and empirical frameworks of the study whilst Section 2.6 concludes the discussions.

2.2 Background of solid waste management in West Africa

2.2.1 Municipal solid waste

Literature is replete with various definitions of solid waste. According to Njoc & Schnitzer (2009), solid waste is described as any item that people no longer consider as

useful and is either about to be gotten rid of or has already been discarded. Similarly, Palmer (1999) also adds that solid waste is discarded because the owner does not see any use for it. To some scholars, solid waste has, thus been described as a resource that has been neglected and either deposited at the right or wrong place (Jensen, 2002; Davies, 2008; Oelofse et al., 2018). The Basel Convention defines solid waste as “*substances or objects which are disposed of or are intended to be disposed of, or are required to be disposed of by the provisions of national law*” (UNEP, 2018). Solid waste therefore includes “*substances or objects which are subject to disposal operations which either lead to or do not lead to the possibility of resource recovery, recycling, reclamation, direct re-use or alternative uses*” (UNEP 2015:22; Oelofse et al., 2018). Solid wastes, therefore, are deposited in various places including dustbins, landfill sites and drains or in open dumpsites (World Bank, 2012; Awosan et al., 2018).

This study therefore limits itself to municipal solid waste (MSW) which points to solid wastes generated from households, commercial activities, institutions and public places (Fodor & Klemes, 2012; Oelofse et al., 2018). Thus, solid waste can therefore be classified based on: the source (of the solid waste), the physical state (of the solid waste), the material composition and risks associated with the solid waste, among others. Classification of solid waste, thus, ensures effective planning in order to deal with the crisis, provide useful data for organizing operations and adopting appropriate solid waste management strategy to handle the menace. A blue-print for solid waste classification has been provided by scholars (World Bank, 1999; Worku et al., 2014). According to Worku et al. (2014), solid waste originates from eight sources. These sources are residential,

commercial, municipal and institutional. The rest are agricultural, manufacturing and construction & building wastes. The study therefore adopts the residential or household type of solid waste which mostly is generated in either single or multifamily residences. The type of solid waste generated included food wastes, paper wastes, textile and hazardous wastes.

2.2.2 Magnitude of solid waste situation in West Africa

Scholars have written stories about the deplorable solid waste situation in West Africa and conclude that a chunk of solid wastes gets collected in most cities in West Africa. The rate of clearing or collection of solid wastes ranges between 30 to 80 percent (Palczynski & Scotia, 2002; Wilson et al., 2012) with the rest finding their ways back into the environment, especially at unauthorized places. These end up in drains, open spaces, roads and road sides, and among other places (UN-Habitat, 2010; Oelofse et al., 2018). The uncollected wastes have the capacity to clog water bodies, stop traffic and cause floods and sometimes causing outbreak of epidemics and subsequent deaths (Mensah, 2006; Owusu-Sekyere et al., 2013). Indeed, the menace impacts so much on the economy of developing countries including those in Africa and governments of those countries are making frantic efforts to reduce, if not eliminate, the persistent solid waste problem on the continent. Suffice it to say, the following examples from selected countries depict the real solid waste dilemma in West Africa.

2.2.2.1 Guinea

Indiscriminate disposal of solid waste in Guinea is recognized as an important cause of environmental pollution and its attendant health implications. The major causes of improper management of solid waste are the lack of financial management and logistics, deficient municipal infrastructures and industrial and commercial growths as well as the perceptions and socio-cultural practices (Ishak & Dadson, 2014; Mamady, 2016). Unplanned residential area was a major factor associated with indiscriminate waste disposal (Ogwueleka, 2009). Other factors that affected the poor management of solid waste in Conakry was that the residents had poor knowledge about solid waste management practices as well as poor and unsafe behaviour in relation to managing solid waste (Adams & Koklobu, 2017). The promotion of environmental information and public education and implementation of community action programs on disease prevention and health promotion was deemed as enhancers of environmental friendliness and safety of communities in Conakry.

2.2.2.2 Liberia

The civil war that engulfed Liberia contributed significantly to the destruction of basic infrastructure and the distraction of her basic service delivery in Monrovia, the capital city (Mensah, 2006). A good number of the population of 1.3 million living in Monrovia are without adequate environmental sanitation and waste management services and this poses a serious health risk to the residents (Yongsi et al., 2008; Vikas et al., 2016; Awosan et al., 2018). According to Mensah (2006), solid waste management service coverage in Monrovia is less than 20% as a result of gamut of factors including inflexible

work schedules, excess staff, obsolete machinery, overburdened procurement measures (Mudzengerere & Chigwenya, 2012; Godfrey et al, 2018) and poor cultural practices (Brown, 2015). The predominant waste disposal methods are largely burning and indiscriminate open space dumping which have led to the destruction of the beauty of the environment and the filling of drains with solid wastes. A resultant effect of poor environmental practice in the capital, Monrovia, has been the outbreak of cholera epidemic in the city in 2003 where 26,651 reported cases of attacks and deaths were recorded (Mensah, 2006; Adams & Koklobu, 2017).

The poor state of solid waste in Monrovia necessitated the signing of an exit strategy with UNICEF to assist the Monrovia City Corporation (MCC) whose strength to manage solid waste in the city was crippled by years of war (Mensah, 2006). UNICEF was tasked to provide support in the areas of solid waste collection and disposal in Monrovia, the capital city. The association with UNICEF was aimed at improving waste management service delivery in the city; strengthen the ability of the MCC to plan and manage solid waste services and to improve community participation in solid waste management delivery through the involvement of the private sector and CBOS/NGOS. The measures put in place led to an improvement in the solid waste situation in Monrovia.

2.2.2.3 Nigeria

The issue of littering has been observed as the most significant indication of environmental contamination in communities and municipalities in Nigeria. Ibadan, the

capital of the Oyo State has been one of Nigeria's cities with a track record in poor solid waste generation and management. Ibadan's case, according to Oluyinka (2011), is very unique because of its significance as a major city whose solid waste circumstances get worsened by the day. It was said that the poor nature of solid waste management compelled a former Minister for Environment, Housing and Urban Development of Nigeria to Vikas et al., 2016; Awosan et al., 2018 brand Ibadan as the dirtiest city in Nigeria (The Nation, 2008). Despite efforts at forestalling the menace through awareness creation, monthly clean-up exercises, provision of vehicles for solid waste collection, transportation for solid waste disposal and budgetary allocations, indiscriminate littering still persists (Wilson et al., 2012). The impact has been instructive, thus, affecting the health, comfort and prosperity of her citizens as pertains elsewhere on the continent (Joseph, 2002). The solid waste that finds its way into drains have been clogging streams, making flooding a common occurrence in Ibadan (Okpala, 1979).

Another city with poor records in managing solid wastes has been Abuja, the administrative capital of Nigeria. Ezeah & Roberts (2012) stresses that even though Abuja was designed as a model city; it has failed drastically in the management of its solid waste. According to Ezeah & Roberts (2012), the rise in population (growing between 20% - 30% per year), rapid urbanization and uneven distribution of oil wealth has occasioned the growth of solid waste in the city with local authorities finding it difficult to deal with the upsurge (in the city of Abuja). Immature approach towards SWM coupled with her weak institutional and policy frameworks, the unavailability of data to enhance decision making among others have been the bane of solid waste

administration in the city (Ezeah & Roberts, 2012), thus, making Abuja, a model city of Nigeria, to relapse into a city full of filth (Ezeah & Roberts, 2012).

2.2.2.4 Senegal

Significantly, solid waste management in low and middle-income countries, including Senegal, however, has been disregarded in spite of its significance in the management of the health of the people and the environment. Senegal, a developing country, has not been an exception, over the years. Rapid increase in the population and urbanization in Dakar, Senegal, has led to an increase in the amount of solid waste generated by residents (Vikas et al., 2016; Awosan et al., 2018). A study conducted by Yaah (2018) examined the existing waste management policies, legislations and systems and its impact on three largest cities in Senegal: Dakar, Touba and Thies. The responsible factors, according to the literature included the inability of the authorities to manage the increment in solid waste generation, lack of financial management, logistical constraint, deficient municipal infrastructure, lack of planning, socio-cultural practices (Mudzegerere & Chigwenya, 2012; Myers, 2017; Yaah, 2018).

The European waste framework directive was adapted as a pointer in Senegal to improve on her solid waste management system. Implementing the waste hierarchy adopted in Europe was recommended, with attention paid to recycling, reuse and composting. The solid waste collection services have been poor because the solid waste tax collection

system was seen as weak, hence, was not capable of influencing effective solid waste management in the capital (Myers, 2017).

2.2.2.5 Sierra Leone

A study conducted by Sankoh et al. (2014) to evaluate the state of solid waste and the inherent challenges in the management of solid waste services in Freetown, the capital of Sierra Leone revealed that rapid population growth together with increased socio-economic factors has contributed tremendously to an increase in solid waste generation in the Metropolis of Sierra Leone (Myers, 2017). Sankoh et al.'s (2014) study revealed that on average, 0.45 kg per person per day of solid waste was generated in the capital. These were mostly dumped in unsafe places such as in landfill sites, in lagoons or in other surfaces of water bodies, thus contributing to environmental problems (Wilson et al., 2012). The impact of this indiscretion in solid waste disposal in Freetown has been extended to a wide range of geographical domains including households, neighbourhoods and the city. The inability to match solid waste collection and generation has led to pockets of uncollected solid wastes strewn on the streets of Freetown.

Weakened institutional, regulatory, financial, technical and public participation (Ezeah & Roberts, 2012; Vikas et al., 2016; Awosan et al., 2018) have made the SWM system ineffective, thus, exposing the people to both environmental and health hazards in Freetown, as in Monrovia (Mensah, 2006). The study asserted that the generation and physical characteristics of solid waste in Freetown were essential issues that influenced

the design of cost effective and “environmentally compatible solid waste management system in Freetown given the fact that waste management authority’s activities were very unsatisfactory” (Sankoh et al., 2014). The study recommended that support from the government; the private sector and Non-governmental Organizations are required to remedy the solid waste management system in a sustainable manner.

In a nutshell, the examples from West African countries discussed above have shown that almost all countries in the Sub region have similar solid waste management crisis. Frantic efforts, however, are been made to arrest the situation through public-private partnership arrangements.

2.2.2.6 Solid waste situation in Accra-Ghana

Back in Ghana and for that matter Accra, the solid waste situation has become an issue for topical discussions because of the degree of generation, factors responsible for its inefficient management and the ramifications on the health of the peoples well as the surroundings of the city. Major cities in Ghana such as Accra (Fobil et al., 2008), Kumasi (Obeng et al., 2009), Sekondi-Takoradi (Baabereyir, 2009) and Wa (Amoah & Kosoe, 2014) are all engulfed with solid wastes. Accra, for instance, has seen a sharp increase in the generation capacity of solid waste in recent years as the problem gets worse by day.

Among the factors responsible for the upsurge in solid waste generation in the Accra Metropolis in recent times is rapid population, rapid urbanization, rising income levels and increased preference for manufactured and imported products (Minghua et al., 2009; Vikas et al., 2016; Awosan et al., 2018). Coupled with low institutional capacity,

financial constraints, low public awareness on environmental issues, poor infrastructural provision, lack of equipment, lack of planning, absence of skilled workforce (Adams et al., 2018) and lack of landfill sites; the solid waste management situation has been challenged, thus, contributing to the poor condition of solid waste services in the Metropolis. Solid waste generated from the city of Accra confirms Mirafteb's (2004) assertion that a large part of municipal solid waste comes from households. This assertion was corroborated by Baabereyir (2009) in his study of the Accra and Sekondi-Takoradi solid waste situation. Baabereyir acknowledges that about 47% of solid wastes generated in Accra originated from domestic sources (Baabereyer, 2009; Oelofse et al., 2018). The composition of the solid wastes in Accra include plastics, food or organic wastes, scrap metals, paper, plant leaves, inert (rubber, ash, bones and sand) and construction & demolition wastes (Baabereyir, 2009).

Tarlue (2017) estimated that the tonnage of solid wastes produced daily in the Accra Metropolis is about three thousand (3,000). But AMA, with support from the private sector, is able to collect between 2,100 – 2,500 tons of the solid waste generated, leaving the rest unattended to, thus, resulting in uncontrolled littering and unsightly environments. There are therefore piles of solid wastes on the streets and in open spaces as well as blocked gutters and drains in most parts of the Metropolis thereby raising apprehensions about the possible outbreak of diseases, epidemics and floods. Indeed, residents have raised concerns about the threat these piles of solid waste in unauthorized locations pose to them and their surrounding communities.

It is shocking to see glaringly, in this age of civilization, refuse containers overflowing with solid wastes which have been placed in the middle of roads in the Central Business District (CBD) of Accra. Some portions of the Metropolis also stink as a result. The city is plagued with tarnished urban environmental conditions and filthiness making it terrible as the authorities fails to provide adequate solid waste services to ameliorate the situation. This has constrained socio-economic development, thus, hindering improvements in the lives of majority of the people. Songsore (2004) asserts that most residents in cities in Ghana live in environments which have little or no provision for municipal services essential to good health, thus, compelling them to live under life threatening conditions (Awosan et al., 2018; Godfrey et al., 2018). The trend has led to problems of geographical concentration of sanitary problems in poor areas of the city. In all these; it is the underprivileged communities that suffer from poor municipal services unlike their rich counterparts that receive efficient municipal services from especially the private solid waste service providers.

Kironde (1999) advances that the degraded urban environment looks like a monster that stares at the face of municipal authorities who have no clue on how to overcome the (urban) degeneration. Baabareyir (2009) avers that the solid waste circumstances are so chaotic that it is hampering Accra's urban development efforts. He described the urban scene as very horrendous. It is in view of this development that various governments (of Ghana) since the year 2000 have made frantic efforts at overcoming the solid waste problem in Accra. These concerted efforts include former president J. A. Kufour's (2001 – 2009) establishment of a Ministry to Modernize the Capital City of Accra; former

President (late) John Atta Mills (2009 – 2012) attempt to lead an assault on the engulfed solid waste situation in Accra in his first 100 days in office and the immediate past president, John Mahama's (2012 - 2017) establishment of ZoomAlliance as a body responsible for clearing solid wastes from the confines of the Metropolis and beyond. In recent times, President Akufo-Addo (2017 till date) has expressed his readiness to deal drastically with the solid waste quandary by establishing two Ministries with oversight responsibilities in solid waste removal in the Metropolis. These are the Zongo Development and Inner Cities Ministry (ZDICM) and Sanitation and Water Resources Ministry (SWRM). He has also avowed to make Accra the "cleanest city in Africa" during his term in Office. All these instances show respective governments 'recognition and attempts at tackling the solid waste crisis facing the Metropolis.

In addition to the above attempts, various efforts were put in place over the years to deal with the ever-growing crisis in the solid waste sector, but unfortunately, none of these have proved successful enough to have ameliorated the situation. Rather, the solid waste crisis appears to be escalating. The strategies adapted included the Assembly taking full responsibility of the situation, private sector collaboration with the Assembly as well as private sector participation. However, the continuous search for better alternatives which would resiliently and robustly improve the situation has led to the adoption of the public-private partnership (franchising) model, an arrangement which has proved successful in developed (Lin & Kao, 2008) as well as some developing countries (Delhi et al., 2010).

2.2.3 Factors constraining SWM in developing countries

Among the factors that constrain solid waste management in Accra are financial constraint, attitude and culture and operational inefficiencies.

2.2.3.1 Financial constrictions

Financial factors constrain the ability of municipalities to have a hold on managing household wastes effectively and efficiently in developing countries. The colossal amount required to provide efficient municipal services (Sharholy et al., 2007), the dearth in the flow of funds, the reluctance of householders to pay for municipal services rendered by the contractors (Sujauddin et al., 2008; Song et al., 2016) have all weighed (down) on the efficiency of solid waste collection in the Metropolis. Thus, attaining efficient solid waste management system necessitates heavy capital involvement which is over and above the capacity of municipal authorities in developing countries to contain (Myers, 2017).

For instance, budgeting and financing are among the plethora of problems (Adams & Koklobu, 2018) which restrain effective delivery of sanitation and waste management services in Indonesia. Budgets allocated to the sector are a tiny percentage (0.1%) of the entire annual budget allocated for waste-related activities (Chong et al., 2016). In Ghana, the Metropolitan Chief Executive Officer of AMA was quoted as saying that a “significant proportion of the Assembly’s budget is devoted to solid waste management annually” (Tarlue, 2017:3); yet, the situation seems to grow worse by the day. According to Quartey (2011), \$4 million dollars was invested in solid waste management in 2010 in

the Metropolis but that was not sufficient to improve the solid waste situation. The situation is not different in Egypt either, where the sector receives low financial attention from the government (Ibrahim & Mohamed, 2016). This has seriously hampered the effectiveness of solid waste collection in developing countries.

2.2.3.2 Attitude and culture

According to Songsore (2010), managing solid has been difficult as far as SWM in the Accra Metropolis is concerned. Songsore's (2010) assertion give credence to the fact that householders generate enormous amounts of solid wastes but are unable to dump them (solid wastes) in a suitable way. Thus, the control of domestic solid waste is directly connected to peoples' perceptions and socio-cultural practices (Navez-Bouchaire, 1993) and determines the success or failure of solid waste management systems (Purcell & Magette, 2010). This is important because people's mind-set towards waste management is very poor and questionable, requiring attitudinal change.

Songsore (2010) again intimated that arbitrary dumping of solid waste has been responsible for the clogging of drains and natural water courses with household wastes which hardly get removed sporadically. Not only is AMA suffering from this canker; but the situation is a reflection of the (solid waste management) practices across most urban neighbourhoods in Ghana. Thus, sustainable environmental management practices necessitate the adoption of appropriately attuned human perceptions and attitudes (Chanda, 1997).

2.2.3.3 Operational inefficiency

Operational inefficiencies occur when there are poor and inefficient institutional structures, inefficient procedures and inappropriate technologies to follow or deficient managerial competencies within the institutions which are involved in the collection efforts of municipal managers (Godfrey et al., 2018). Again, operational vehicles required to carry solid wastes are complicated, costly and complex to work with and sustain. These inadequate conditions are often prevalent in the solid waste sector in developing countries (Godfrey et al., 2018; Adams & Koklobu, 2018). After operating these vehicles for a short time, only a few of the fleets of vehicles remain in operation because they were purchased at “old age”, they lacked good maintenance culture and the poor nature of urban roads condemns their effectiveness. Transporting solid wastes is a bulky activity which requires efficient and operational vehicles but their frequent breakdowns coupled with spare parts shortages immobilizes collection for extended periods of time. For instance, in the estimation of UNEP (1996), 70% of collection/transfer vehicles in West African cities may be out of action at any moment because of operational challenges they go through at any given point in time. The operational challenges have been shown in Table 2.1 below. It reflects institutional, technical, financial and social challenges that affect the solid waste sector in developing countries.

Table 2.1 Overview of problems confronting solid waste management

Institutional challenges	Technical challenges	Social challenges	Financial challenges
1. There is no regulation to promote appropriate solid waste practices.	1. Contamination of water resources	1. Unsustainable project outcome.	1. Resource scarcity.
2. Fragile institutional agenda.	2. Weakening socio-economic infrastructure.	2. Resistance from communities.	2. Tariff inadequacies or the absence of it.
3. Inadequate lucidity on institutional roles and tasks.	3. Inadequate coverage of solid waste collections	3. Low hygienic responsiveness.	3. Financial sustainability inadequacies.
4. Lack of attention on solid waste and wastewater.			

Source: ADB (2007)

2.3 Public-Private Partnership arrangement

It is an established fact that PPP in SWM has been the most widely used strategy in finding common solutions to problems bedeviling third world countries albeit the outcome. This section thus treats the application of the PPP concept in SWM in the Metropolis under varied sub-headings.

2.3.1 Conceptual issues

The solid waste condition in many urban areas in the world is debilitating and is largely brought about by a high incidence of indiscriminate disposal of solid wastes or pollution (Zhang et al., 2010). More problematic is the case of the developing world which in most cases is characterized by insufficiency of basic services such as the supply of water, solid waste facilities, transportation infrastructure and system of solid waste collection (UN Habitat, 2001). Public-Private Partnership has become a module geared towards injecting effectiveness and efficiency in an attempt to address the shortfalls in solid waste service delivery which affects many city authorities. Public-Private Partnership is seen as an alternative to absolute privatization in which the public (government) and its private partners more or less assume co-responsibility and co-ownership for the efficient delivery of urban services (World Bank, 2017). By this partnership, the strength of the private partner—the dynamism, access to available funds, access to appropriate technologies, managerial dexterity and the entrepreneurial spirit are effectively combined with the public sector’s concerns of shared responsibility, environmental responsiveness, local knowledge and the generation of jobs, according to Ahmed & Ali (2006).

Although variously defined by scholars, the majority of the conceptualizations view PPP as obliging agreement involving the public sector on one hand and the private sector on the other hand (Akintoye et al., 2003). The World Bank (2011) has defined Public-Private Partnership as an arrangement that involves the public sector and their private sector counterparts where the government hands over part of her tasks to the private sector to carry out. The arrangement could be accomplished in the medium to long term. Massoud

& El-Fadel (2002) explains that public-private partnership is the transfer and management of a product or a service presently provided by the public sector, partly or wholly to the private partner. Ghana's definition of public-private partnerships as enshrined in the Ministry of Finance's document is a contract arrangement that exist between a public body and a private individual, with a well-defined arrangement which has been agreed on mutually for the provision of socio-economic infrastructure and services which hitherto, were the preserve of the government (GNPPPP, 2011). Essentially, the concept of public-private partnership connotes a contract accord or collaborative effort in which a government agency and the private partner pool resources together in order to provide goods and services which traditionally had remained exclusive to the public sector (World Bank, 2017). The concept and practice of PPP is expected to provide goods and services that the public sector is unable to supply alone because it does not have the resources or the expertise to execute it (Forsyth, 2005). It has however, been argued that PPP in itself is not the panacea to service delivery challenges which remains crucial for the desired option whose relevance is only felt when carried out prudently (UNESCAP, 2011). According to Cointreau-Levine (1995), both parties contribute to the provision of the needed services in a typical public-private partnership arrangement.

There are many forms that PPP arrangements can take. However, all the various forms share unique characteristics of collective governance arrangements and decision-making process. Such joint ventures incorporate the private individual's drive with that of public interest role of the public sector, and are all aimed at the efficient management of the

system/arrangement (Ahmed & Ali, 2006). Nevertheless, another partner (the beneficiaries or householders) play an immense role in any public-private partnership arrangements. Householders contribute greatly to the delivery of municipal services in the solid waste management value chain. For example, citizens or the beneficiary households can have the tendency of supporting the private sector by paying service charges promptly (Soukopova et al., 2016). The beneficiaries would be required to contribute to improving accountability and quality service delivery in both the public and private sectors. Arrangements of this nature permit the beneficiary to become a dynamic partner, thus, shelving his or her passive service disposition. This new established role played by the beneficiary has the tendency of promoting high quality and efficient service delivery (UNESCAP, 2011).

2.3.2 Justification for the use of PPPs

Countries in Africa mostly hailed nationalization as equivalent to independence and so the state made itself visible in all sectors of the economy in the early years of independence especially in the 1960s (Kayizzi-Mugerwa, 2003). Many African governments embarked on state owned enterprises and state provision of services including solid waste management (Ahmed & Ali, 2006). However, it appears that state provision of goods and services seemed unsustainable owing to the burgeoning rates of corruption and debt accumulations from public enterprises. The alternate was privatization. However, the literature intimates that privatization neither brought about any significant cutbacks in the nation's indebtedness nor did the private partner exhibit

any monumental prowess in management and service provision (Broadbent & Laughlin, 2003; Leitch & Motion, 2003).

According to Williamson (1979), the private sector which had been perceived to come on board to revamp public service provision and to serve the citizens better rather use that avenue as profit reaping venture. He avers that the private sector's involvement in public service delivery brings out several concerns related to unscrupulousness; "self-interest seeking with guile, corruption and exploitative tendencies" (Williamson, 1979:234). Experiences with the two extremes (both exclusive public provision and private provision) disclose that either of them could not provide more effective and efficient services and could be more productive by harnessing the strengths of each other through partnerships. It is within such context that scholars including Miller (2000) and Savas (2000) maintain that PPPs have become pervasive in emerging countries as a result of:

- i. The need to develop the capabilities of the public sector through innovation along with the injection of maintenance approach;
- ii. Decreasing and stabilization of the costs of service provision;
- iii. Improvements in environmental protection by complying with set environmental standards.
- iv. Strengthen competition; and

- v. Reducing budgetary constraints of the government by having access to capital from the private sector for infrastructural investments.

The idea is that the two come together in a collaborative manner where an institutionalized framework bind both parties together towards the execution of a shared interest, task or project (Geddes & Wagner, 2013). For instance, Spiller (2008:21) puts it this way;“PPP arrangements result in an individualized regulatory framework for the investments at hand” which confine both governmental and private sector desires for opportunistic tendencies.

2.3.3 Types of Public-Private Partnerships

PPP are diverse in modules or forms. For instance, Wang (2004) identified three types of PPPs in China: outsourcing, concession/franchising and divestiture. Webb & Pulie (2002) stressed, however, that the preferred form opted for depends on aspects such as the goal of the government, the type of project identified, availability of funds and the proficiency the private partner brings on board. In each of the modules, the contracting terms clarify the design, production, finance, the operational and sustenance of the infrastructural project or asset. According to Massoud et al. (2003), there are three broad categories or forms of PPPs. These are:

- i. Private sector participation with the government owning the project (the models include service agreement/contracts, management contracts and leasing);

- ii. The entire sale or partial sale of the facilities and concessions (including BOO (Build, Own and Operate), BOT (Build, Operate and Transfer), DBOS (Design, Build, Operate and Transfer), BOOT (Build, Own, Operate and Transfer); and
- iii. Franchising (also called concessions in other jurisdictions) was the model adopted in this research of PPP.

2.3.4 Public-Private Partnership and Solid Waste Management

According to Fodor & Klemes (2012), the public sector is able to achieve important benefits when Public-Private Partnerships are used in appropriate contexts. Numerous reasons have been adduced for the active co-operation among the public and private sectors in providing and developing municipal solid waste infrastructural services. It is observed that PPP in service provision enables the following benefits to accrue: it provides increased efficiency and flexibility in service delivery; it has potential for reducing cost inefficiencies in operations and management; there is also the availability of resources for the growth of investment in the sector and PPP ensures that there is high accessibility to highly developed technology coupled with the availability of technical know-how (World Bank, 2011; UNESCAP, 2011).

2.3.4.1 Benefits of PPP in SWM

The essence of PPP had been argued by Roth (1987) that PPP arrangement has latent benefits enjoyable by both the citizens and governments. PPPs have the potential of increasing competition and efficiency in the provision of services, expansion of coverage

and reduction of cost in delivery (Roth, 1987; World Bank, 2017). Roth (1987) further argues that PPPs allow for optimal risk allocation among the public and private partners thereby assisting the allotment of risk to the organizations that have the capacity to absorb it effectively (Roth, 1987). Moreover, the private sector involvement ensures that ventures and subsequent programmes are subjected to commercial discipline and impeccable financial due diligence. Further, the private sector is often able to manage more effectively and efficiently, the entire supply chain required for making available and allocating goods and services than can public agencies. Through PPP, new ideas for designing programmes and projects can be brought on board, thus, bringing greater synergy between the design and operations of facilities (UNDP, 2005).

Being in partnership with the private sector, governments benefit from great incentives that enable private firms to keep costs down. More often than not, private firms are able to steer clear of the bureaucratic tendencies that plague the public sector. In the view of Sadran (2004), the private sector has the advantage of experimenting with new technologies and processes. Conventionally, PPPs permit governments to extend services without necessarily increasing the number of employees in the public sector and without making large capital investments in facilities and equipment. The private sector, nevertheless, obtains higher levels of productivity from their work force more than can be accomplished by the civil service systems. Thus, the private sector is capable of using part-time labour efficiently where the need arises more than the public sector.

Again, having partnership agreement with the private sector enables local governments to enjoy economies of scale. By having contracts with several suppliers, the government would be assured of continuous service delivery and the completion of projects within reasonable time. Through competitive bidding for services, the true costs of production or operations can be determined thereby eliminating wastage (Gerrard, 2001). The public-private sector cooperation with the private sector also generates additional jobs and income for the youth whilst at the same time satisfying the demand for goods and services for the public (Kirama & Mayo, 2015). Further, partnership formation is an effective way of mobilizing both private and foreign investment and capital for the development of socio-economic infrastructure and service improvements for governments in cities of developing countries (Gerrard, 2001).

2.3.4.2 Success factors

From the foregoing conceptualization, PPP promises to advance a solid waste management model that reduces the excesses associated with exclusive public or private sector solid waste service provisioning. However, advancing this course greatly hinges on key enabling factors or critical success factors without which there will be no take-off to produce appreciable solid waste outcomes (Geddes & Wagner, 2013). In this study, PPP's critical success is conceptualized to hinge on three important project phases; the pre-contract phase; contract phase and post-contract phase.

2.3.4.2.1 Pre-contract phase

The critical factors relate to activities that take place before the contract is signed. The main considerations here are openness and transparency.

2.3.4.2.1.1 Openness

In the pre-contract phase, the government entity or local authority needs to open up the negotiation space as transparent as possible and to inject much competition by opening up and communicating enough for more bidders to apply. Information is important and needs to be communicated using legitimate public outlets to reach out to broader potential bidders. The idea of rampant sole sourcing which appears to have become ‘a ritual’ in the Ghanaian context leaves much to be desired.

It is against this backdrop that without such openness the public interest and support becomes damaged because without competitive pressure, prices become detached from the production costs and the final users implicitly or explicitly bears the cost (Bajari et al., 2006). A basic principle is to make the entire process as open as possible; provide adequate information and also allow reasonably qualified bidders to participate in a competitive manner. It is based on this approach that the right private partner with requisite resources and cost effectiveness could be selected to execute the task to benefit the majority of the citizenry.

2.3.4.2.1.2 Transparency

Activities that occur at the pre-contract phase largely determine the extent of transparency or public interest the entire PPP contract seeks to execute. The quality of PPP contract process is determined by scrutinizing the stipulations of the contract with the private individuals concerned. Again, the openness of the bidding process and the contract procedure also is significant in reposing confidence in the bidders. The extent to which civil society organizations were allowed to intervene and given fair hearing on the issue as well as the necessitation of the process; among others, also give credence to the transparency of the process (OECD, 2010).

2.3.4.2.2 Contract phase

The success factors at this stage include the following:

2.3.4.2.2.1 Structural conditions

First and foremost, it should be reckoned that PPP involves legalities as the framework imposes responsibilities, tasks and benefits on both the public and private partners. This is stated in the partnership deed and an overall policy framework stating the terms and conditions of the deed. The literature posits that such partnerships are accomplished through various forms of contracts, the legal processes that tend to structure the interactions and the shared benefits in clear and unambiguous terms (Pongsiri, 2002; Milliman & Grosskopf, 2004). From the point above, the institutional framework provides the initial springboard upon which the actors know what they are expected to do, at what time and how to act within the parameters of allowable space (Zhu et al.,

2008). This should be carried out very well with all the tactfulness and effectiveness it deserves. The selection of a particular private actor over competitors should largely be based on cost-benefit analysis and value-for-money basis as well as other reasonably stated criteria and not on personal or patronage consideration (Obirih-Opareh & Post, 2002).

2.3.4.2.2.2 Tactfulness in the PPP process

There has been over sensationalism on the prowess of the private sector to bring about effective improvement in solid waste management (Zhang et al., 2010). Although true, private sector engagement in solid waste management will only yield appreciable results if the public agencies apply sound technical, ethical and managerial competencies in their dealings or engagement with the private sector. For instance, using a Lebanese PPP case, Zhang et al. (2010:428) intimate “lessons learned suggests that PPPs must begin with careful groundwork and preparation, including a comprehensive feasibility study and economic evaluation for each potential partnership project”.

The capacity of the human resources at the local government level needs to be trained and developed or engage a trustworthy consultant or broker , otherwise the private sector which is more sophisticated with technical men and women would use technical details to make the contract zero-sum gain in their favor. This is because most members of staff of the local government in many developing countries do not have the appropriate expertise and experience with regard to executing and negotiating public-private partnership agreements. The idea of collaboration or partnership is premised on the expectations of

interdependence as well as individual quality (that is, complementarities based on assets and skills). In that regard, imbalanced skill-sets and unequal appreciation of issues due to poor expertise are recipes for failing PPPs in the developing world (Hagen, 2002).

2.3.4.2.2.3 Roles

When all actors or stakeholders in solid waste management carry out their roles effectively, PPP in SWM would be more effective and solid wastes would no longer be regarded as wastes but as resources (UNEP, 2001; Awosan et al., 2018). It is against such backdrop that UNEP (2001) intimates that promoting effectiveness in PPP in SWM requires each actor carrying out its own responsibilities as effective as possible. In other words, the public agency should continue to provide the necessary enabling and regulatory environment by giving full support to the private actors when the need arises.

The private actors, on the other hand, need to put in place mechanisms and procedures for effectively collecting, transporting and managing solid waste, and especially recycling them in a more environmentally friendly manner. According to Reddy & Srinivas (2009), it is significant to understand the onerous role of actors in devising and adopting the finest solution in excellent service provision.

2.3.4.2.2.4 Resources

The idea of PPP requires adequate resources such as finance, human resources, equipment, vehicles and technology in order to step up the process of effective solid waste management. Accordingly, it is only reasonable to select private partners who have

the requisite resources to execute the task. For instance, they should have the necessary technical and experienced people, requisite technology and financial resources to provide appreciable solid waste services when given the opportunity (Awortwi, 2004). Public partners on the other hand require adequate and qualified managerial and technical competencies to be able to negotiate a good PPP deal (Plummer, 2013) and to avoid partnership or negotiation errors which mostly characterize bureaucrats of developing countries.

2.3.4.2.2.5 Risk arrangements

Investments which would involve infrastructure and large capital expenditure necessarily come with various potential risks to the stakeholders or partners involved (Marques & Berg, 2011). For example, in the sanitation and solid waste management sector, the risks largely hinge on production risks (environmental, operational and technological risks), commercial risks (demand and capacity risks) and context risks (regulation and public contestation risks). In the PPP contracting process, the public agency (Metropolitan authority) needs to ascertain such potential risks and factor these in the agreement because private partners will not be prepared to accept risks which appear insurmountable or unmanageable (Acerete et al., 2009).

The public sector should not be in a haste to absorb all the risks because it is largely risk transfer underlying the economics of 'value for money' and clearly the appropriation of risks to the private sector makes PPP more pragmatic for the public sector. It is very crucial for city authorities to develop a risk matrix to ascertain how the different tender

documents seek to apportion various potential risks inherent in the PPP project. Such scrutiny of ‘risks allocation’ is very crucial for comparing which bidder is more eligible as well as to prevent any ambiguity and misinterpretations in the future when bidders had already entered a contract. In their assessment of risks allocation in PPP in SWM in Portugal, da Cruz et al. (2013) observed that the tender documents never significantly allotted risks to the private partners but to the public sector and citizenry at large. The authors also noted that the partnership provisions or deeds appeared to have over protected the private actors, thus, mostly pushing all potential risks and liabilities to the public.

2.3.4.2.3 Post contract phase

The post contract success factors include the following: monitoring and supervision and setting standards and accountability.

2.3.4.2.3.1 Monitoring and supervision

A major requirement for realizing the objectives of SWM partnerships yet largely glossed over is a final phase of regulating the private actor engaged in service provision. People who have the public or citizens’ interest at heart mostly tend to view the private sector as largely magnanimous. Yet, this has proven to be a fallacy as poor monitoring and supervision leads to corruption and abuse of householders. In order to make sure appreciable standards at the pre-contract stage as well as targets set at the contract phase of the partnership deed are adhered to, a framework of incentives and sanctions need to

be devised. More importantly, the targets pertaining to quality standards and effectiveness need to be adequately monitored by the public authority that must determine the degree of achievement and apply sanctions whenever needed.

According to Stiglitz & Wallsten (1999), the degree of appreciable performance could be measured through an output-oriented model using indicators such as coverage, percentage of waste recycled, number of complaints and addressable systems, among others. The authors maintain that it is important for local authorities or public actors to protect consumers' or citizens' interest by adequately monitoring and bringing the private provider to order. The above, notwithstanding, as part of best practice, the public agency should not be seen to be rowing in the contract management but needs to act as informed owners without interfering in the day-to-day management of the affairs of the public agency (OECD, 2010).

2.3.4.2.3.2 Standards and accountability

According to Miller (2000), the private partner, when left without checks, may lower standards to reap off more profits. In that regard, the city authorities or public agency need to maintain standards and monitor environmental or product safety, efficacy and quality in a manner where customers obtain reasonable access to services they so desire. Put differently, the idea of PPP does not suggest 'no government' but government or public entity assumes a new role. It emphasizes the establishment of transparency, accountability and sound regulatory framework as a necessary precursor to private sector participation in a PPP arrangement (Pongsiri, 2002; Diaz, 2016).

2.3.4.3 Challenges facing PPP in SWM

This section discusses the key constraints that serve as impediments to the effective execution of solid waste using Public-Private Partnership. The PPP process has been fraught with numerous challenges including: the long-term planning horizon; the complexity of major projects; the hold-up problem caused by a change in the position of partners; a technocratic implementation and cultural differences between private and public partners (Nijkamp et al., 2002; Scharle, 2002). The idea is that by discussing these challenges, lessons could be learnt to adopt appropriate local and contextually relevant measures.

2.3.4.3.1 Secrecy in contracts

There have been several calls on public agencies or local governments to demonstrate adequate openness and transparency in the PPP contracting process. However, most PPP agreements in SWM are shrouded in secrecy and the opportunity mostly tends to be given to a favored private partner at the expense of fair competition. For instance, Awortwi (2004) observes that most of the PPP contract processes carried out in Ghana appeared to have been done through sole sourcing with processes micro-managed by politicians. As and when society develops and more companies' spring up, one would expect more open and competitive tendering and bidding processes. However, the trend of sole sourcing appears to still take a center stage in the award of PPP contracts in SWM at the local level of developing countries. The worst of it all is that, there is mostly the lack of transparency in contracting the solid waste management services as well as poor initial viability and

feasibility work for any of the PPP agreements which in most cases end up not bringing any new development to the management of solid waste (Fobil et al., 2008).

2.3.4.3.2 Inexperienced technical staff

The expertise and experience of large private companies put them far ahead when it comes to contracting processes, the legalities and the technicalities. This should have required a correspondingly vibrant public sector staff to transact in the public interest. However, most local government officials in developing countries such as Ghana are inexperienced in PPP contracting which renders many contracts between local governments and private actors often inadequate in technical specifications, performance monitoring and penalties for poor performance. It is within such contexts that Jefferies et al. (2002) argue that a well-organized public sector with a functional technical staff and system is very crucial in PPP brokerage and processes.

2.3.4.3.3 Poor preparation

The extent to which PPP will be effective largely depends on the terms of the contract, sanctions and liabilities that are enshrined in it. It therefore requires technical know-how and competence to forecast any possible liability and the appropriate clauses to put in place or to read bidding or tender documents and make sense out of them. However, this is also the stage where those who negotiate on behalf of the public sector (local government staff) mostly go into these processes without adequate information and knowledge to understand the technical details (Plummer, 2013). The private sector, on the other hand, is very sophisticated in terms of expertise and experience. This point has

been underscored by da Cruz et al. (2013) who used PPP cases from Portugal to argue that in most cases when it comes to PPP in the solid waste sector, construction companies or their specialized sub-holdings are often the private entities in PPP arrangements and are very powerful with various degrees of skill-set and personnel. These brokers often seem to be far more prepared to enter into PPP agreements than the local policy elites (Massoud et al., 2003).

Zouggari (2003) intimates that PPPs often become mired in challenges because they hurriedly prepare tender documents and the negotiations seem to take place between asymmetrically qualified and experienced professionals, largely to the benefit of the brokers/side from the public sector. Furthermore, some of these powerful private companies wield a strong political influence upon local governments and could easily bulldoze their way around. It is therefore not quite surprising that most public-private partnerships in solid waste management contracts mostly end up pushing all the risks to the public partner and the people.

2.3.4.3.4 Bad faith of local policy elites

At other times, these laxities in contract processes may not be borne out of poor knowledge or preparation for the process but emanates from bad-faith and purely calculated attempts to reap off the public sector for private gains. This could be an orchestrated collusion between public officials and private entities to create conditions for further or future mutual benefit at the detriment of the state. For instance, a study of solid waste management using public-private partnerships in Accra and Kumasi by

Awortwi (2004) points out that a closer assessment of contract documents brings to the fore that city authorities transferred to the private partners little or no financial risk. These partners at times benefit from assets of the local governments without necessarily bringing in any new thing on board.

The result is that, public sector monopolies get replaced by private sector monopolies with no gain in efficiency (Ahmed & Ali, 2006). Local politics and problems from local policy elites in most cases tend to frustrate the PPP processes. According to Wagne & Llerena (2011), policymakers at times even intentionally require non-feasible demands from the companies which may become more challenging to develop specific knowledge if it is not linked to the core competencies of the firm.

2.3.4.3.5 Poor engagement and inadequate consultation

PPP for SWM at the local level at times become more challenging because of poor engagement with all relevant stakeholders. In most cases, the public agency tends to negotiate with only formal sector or private agencies and tend to neglect the informal sector and the socio-economic wellbeing of the people. Chaturvedi et al. (2015) indicated how poor planning and lack of stakeholder involvement in PPP process could degenerate into more problems between the actors. Chaturvedi et al. (2015) intimated that Delhi city authorities tended to ignore the role of the informal sector but only resorted to and provided enough support to the giant private solid waste management companies. Guerrero et al. (2013) have explained that an effective system depends on other factors and not just technological solutions or capital from the private sector but also largely

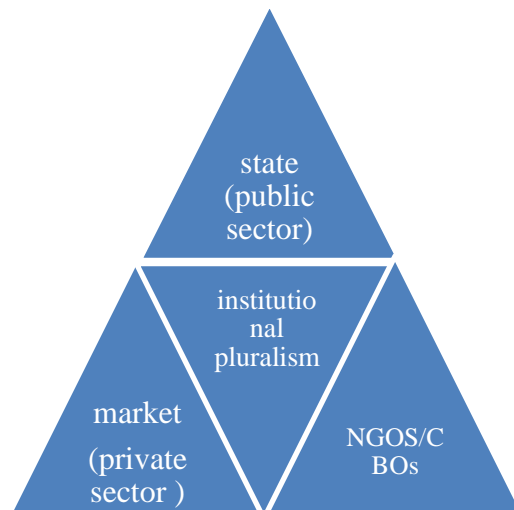
depends on appropriate socio-cultural, environmental, institutional and economic linkages to retain a smooth process and appreciable outcomes.

From the above discussions, it suggests that achieving effective PPP in SWM depends largely on a joint effort between policy makers, formal and informal private actors, communities and other stakeholders.

2.4 Actors and stakeholders in Solid Waste Management

Considering the challenges affecting SWM in the developing world, there is sufficient evidence to argue that the public sector exclusively address the urban waste management challenges threatening the developing world. A quest for effective solid waste management requires an institutional pluralism which calls for diverse actors and stakeholders partaking in the process. Figure 2.1 below provides a 'tripartite' approach to enhancing the management of solid waste in third world countries. This framework has three main participants or partners: the public sector, the private sector and non-governmental organizations or community-based organizations.

Figure 2.1 Stakeholders in solid waste management



Source: Tukahirwa et al., (2013)

2.4.1 Institutional pluralism

The idea of institutional pluralism conceptualizes the need to open up the space for providing goods and services for the generality of the public with the tacit cooperation with the government, the market (private sector) and civil society or through a combination or partnerships of these actors (Glasbergen et al., 2007). Cohen & Peterson (1999) argue that there is the need to adopt institutional reforms that empower the non-state sector so that government would delegate public service provisions to private actors and non-governmental organizations in the developing world. Institutional pluralism, according to the literature, engenders effective and legitimate provision of public goods to the state. Scholars contend that by ceding functions to non-state actors, the public sector is able to focus on other core responsibilities and above all, the introduction of other actors to shore up competition and effectiveness in service provision (Esman & Uphoff, 1984; Esman, 1991). Esman & Uphoff (1984) aver that several stages of

establishments which have lesser units at the base are capable of producing better cohesion, balance and dedicated municipal services than when the organization acts alone at perhaps, the highest levels.

Other scholars believe that institutional pluralism was brought in as a replacement to the botched decentralization strategy and a ploy to overcome the new socio-economic and political challenges that erupted in the 21st century (Cohen & Peterson, 1999). Cohen & Peterson (1999) argues that the adoption and implementation of a mixed market strategy (of central, non-central, private sector and non-governmental organizations) lead to an improved accountability in the public sector.

2.4.1.1 State or public sector involvement

At the apex of the framework is the public sector or state which has traditionally been performing solid waste management roles. Paul et al. (2012; 2018) write; “although the ultimate responsibility to manage solid waste is a legally prescribed municipal task in most countries, solid waste management services are inadequately provided in many municipalities in the developing world”. This challenge is not only emanating from the increasing volume of solid wastes generated and its complexities (Tınmaz & Demir, 2006) but also the availability of resources required driving and sustaining the system (Omuta, 1987) as well as growing public apprehensions about ecological vulnerabilities that are associated with poor solid waste management. Consequently, there has been a need to break this traditional monopoly to allow the institutions to be flexible and to allow for different or array of ‘plural actors’ in order to boost efficiency and competition

in the system. In most cases, the role of the public sector had appeared quite centralized where contracts may perhaps be signed at the top (national level) and imposed on those at the lower level (local administration). Considering the national character of most PPP contracts in many emerging countries, effective facilitation of solid waste administration becomes difficult at the local echelon of power.

It therefore calls for the decentralization of the processes in engaging local government outfits at the base if possible. Contracts for PPP projects should be signed between the local administration at the grassroots with willing private sector institutions rather than central (government) administrations passing it on to local government institutions. Chong et al. (2016) avers, however that decentralization of the PPP procedures stimulate further support structure for managing solid waste. Contextually, the public sector should play a convener, monitoring or supervisory role under institutional pluralism in order to set the congenial atmosphere for Non State Providers (NSP) to operate. It is therefore essential to reinforce the competencies of local governance structures (at the Metropolitan, municipal and district levels) in order to come out with by-laws and standards for the parameters for public-private partnerships in managing solid waste (Kölsch, 2013). There is therefore the need to ensure a resilient monitoring and putting in place, regulatory structures that would check the charging of ridiculous levies from private establishments and intractable community members, among others.

2.4.1.2 Market or private sector involvement

At the bottom left of Figure 2.1 is the ‘market’ or private sector which has become a very popular module because of the economic and trade liberalization policies (Chaturvedi et al., 2015). For instance, in Ghana, the role of private waste management companies in urban solid waste service provision has been made possible because of institutional pluralism which has opened up the space to allow for private sector participation either through franchising, contracting out or other forms of PPP. It is contended that involving the private sector could lead to improvements in the effectiveness of managing household solid waste services. Thus, there is an indication to the effect that PPP is an avenue for alleviating the challenges connected with the management of solid waste (Sharholly et al., 2008; UNESCAP, 2011).

Engaging private partners in managing solid waste becomes an avenue for injecting competitiveness and effectiveness in the course of bringing on board the required machinery, sufficient capital and skill. This arrangement could exist in the form of PPP which the World Bank (2011) expressed as medium or long term agreement involving the public and private actors whereby responsibilities are offered to the private partner to efficiently manage municipal solid waste delivery services. Even though the private sector has contributed in reshaping socio-economic development in countries, their contributions have been seen as inimical to the good of the society and costly to the tax payer (Miraftab, 2004)

2.4.1.3 Informal sector involvement

The tripartite arrangements do appreciate the singular role of the informal sector in the solid waste management mix in developing nations including Kenya, Cote d'Ivoire and Ghana. The responsibility of the informal sector in the management of solid waste in the views of Scheinberg et al. (2010) and Andrianisa et al. (2016) must be recognized as quite significant and perhaps contributory in developing countries although it is considered as the most directly vulnerable segment in municipality's management of solid waste. Thus, the involvement of the informal sector in the search for proper solid waste disposal suggests that those working in solid waste management service activities are by and large not organized, not financed, not contracted officially, not recognized, not managed, not taxed nor discussed by the city authorities (Wilson et al., 2006; Wiersma et al., 2008; Gerdes & Gunsilius, 2010).

The informal sector stakeholders include waste pickers or collectors, scavengers, itinerant waste buyers, and micro waste shop dealers (Oteng-Ababio, 2010; Rockson et al., 2013; Andrianisa et al., 2016). The sub-sector consists of informal operatives, community-based organizations as well as non-governmental establishments (Hardoy et al., 2001, cited in Oteng-Ababio, 2010). Wilson et al. (2006) asserts that informal sector players appear to be at the backburner of municipal authorities in that they are normally harassed and hounded by authorities in spite of the fact that they play key roles in the solid waste collection efforts of municipalities. The development of the sector is more often than not driven by forces of demand, social and economic aspects (Ahmed & Ali, 2004; Wilson et al., 2006). According to Oteng-Ababio (2011), there is the current trend where networks

have been built between the formal firms and their informal actors which increase by the day. The activities of the informal sector, although appears subtle, contribute more effectively in reducing the cost and efforts required for the managing municipal solid waste (Gunsilius et al., 2011). There is an additional benefit of providing alternative source of income for urban poor and other resultant effects on environmental health, either positive or negative (Gunsilius et al., 2011). In Ghana and for that matter Accra Metropolis, the informal sector has been playing a dominant role in the waste collection efforts, contributing significantly to the reduction of solid waste from homes, especially the second and third class vicinities where services by the accredited contractors leave much to be desired. Meanwhile, the activities of the informal sector have led to the generation of employment to thousands of the youth, have reduced the waste stock in the system and have significantly contributed to the growth and development of the economy.

2.4.1.4 Role of NGOs and CBOs

At the bottom right corner of the triangle above is the role played by Non-Governmental Organisations (NGOs) or Community-Based Organizations (Tukahirwa et al., 2010). A lot of research has been conducted into the functions of NGOs and CBOs (Community Based Organisations) in developing countries. These two bodies focused on a variety of sectors and activities that include environmental service providers in solid waste (Hulme & Edwards, 1997; Mitlin, 2001; Barr et al., 2005) who mostly operates at the local level (Paul et al., 2012; Matter et al., 2013; Linzner, & Salhofer, 2014). It should be pointed out that the first two (state/public sector and market/private sector) have received wider

recognition and attention in the solid waste management literature. Unfortunately, the third stakeholder (NGOs and CBOs), have not received adequate exposition in the literature (Tukahirwa et al., 2013). Not much is heard of NGOs and CBOs in solid waste management in Ghana, for instance.

Coston (1998), in analyzing the significant responsibilities of Civil Society Organizations (CSO) identified five possible functions performed by them. They are contracting, governance of third parties, co-operation, complementarity and collaboration.

Blair (2001) emphasizes that the breaking of state monopoly can also introduce competition in the provision of public goods and services. Blair (2001) therefore saw this (competition) as a sixth model that can be incorporated into institutional pluralism. CSOs have been seen as stakeholders who are benevolent in nature and their operations are largely driven by philanthropic ambitions in advancing improved solid waste management and sanitation conditions of communities. They use direct service provision or advocacy activities to improve on solid waste situations (Ahmed & Ali, 2006; Rathi, 2006; Mbah & Nzeadibe, 2016). The unique responsibility of NGOs and CBOs in the provision of solid waste services to the underserved, marginalized or poor neighborhoods have been acknowledged widely because they bridge the gap where public and private schemes are thought to be less capable and reluctant to serve these areas and groups efficiently. The contributions of NGOs/CBOs to solid waste delivery services to poor urban communities have been considerable in some contexts in East Africa (Tukahirwa et al., 2010; and Schouten & Mathenge, 2010). In a study of three cities in East African

context, Tukahirwa et al. (2010) observes that NGOs and CBOs provide urban sanitation functions in the provision of advocacy services, capacity building, community sensitization, monitoring services and clearing of solid wastes, among others. Unfortunately, the role of NGOs and CBOs in the solid waste management of the Accra Metropolis is insignificant or non-existent.

2.5 Theoretical literature

The two theoretical frameworks adopted for the study are the sociological and public choice theories.

2.5.1 Sociological theories (Functionalism and System's Theories)

Public-private partnership in solid waste management could be conceptualized from the purview of sociological theories of Functionalism and general Systems Theories (Abuyuan, 1999; Turner, 2015). The Functionalism Theory posits that institutions need to survive by adjusting to the dynamism of societal conditions by means of interdependence on its various subdivisions or outlets (Castro, 2009). The Functionalism theory argues that parts of an entity come together as a collective whole in order to deliver a bigger task. Public-private partnerships in solid waste management adapts very well to this theoretical framework if the partners involved in PPP are conceptualized as part of a whole organisation that deliver municipal services. In that regard, the partners (both public and private) become a holistic entity as interdependent organs of a larger organisation each having its specialised function and working as a whole towards the common goal of delivering effective service.

This theory has been adapted for the study as the research seeks to assess how both public and private partners come together as a merged entity to provide a collective goal of enhancing solid waste management in the Accra Metropolitan area. In the thinking of general systems theorists, the interaction between a system's components or parts produces a resultant entity often more than just the simple sum of its components (Bertalanffy, 1969). The theory entails at least three key assumptions. Firstly, the way a system relates with the other determines the nature of relationship and the results of the relationship. Secondly, the effectiveness of a system depends largely on the nature of the interactions between the various constituent parts of the system. Finally, a system dynamics approach is required to assess the indicators influencing the system to change as well as the nature of the change (Ahmed & Ali, 2004).

The general Systems Theory is relevant to the study as it demonstrates how both private sector and public sectors come together to execute a task whose outcome should be more than the sum of the parts. The theory also demonstrates the relevance and the need to pay attention to underlying conditions that structure relationships or partnerships. In other words, it showcases the need to structure both the public and private sub-systems so that both partners could effectively unleash their potential towards the super-ordinate goal of effective solid waste management. This requires a need for regulations and modifications in the way each sub system operates and interacts among each other including the benefit, rights and associated risks. The factors producing dynamism in operating principles are also highlighted in this theory.

2.5.2 Public Choice Theory

The Public Choice Theory (PCT) also provides additional theoretical underpinning to the need for private sector intercession in public service provision, especially, in the transitional administrative systems where there is copious evidence of vast ineptitude and wastages in the public sector provision of services (Cointreau-Levine, 1995). Public Choice theorists argue that the public sector may be full of incompetence because policy makers and public officials appear to be propelled by selfish tendencies and individualistic inclinations. In the provision of Dye (2008:23), Public Choice views “political actors as seeking to maximize their personal benefit in politics as well as in the marketplace”. The point above has been corroborated by Buchanan & Tullock (1962) that each individual is a rational calculator pursuing his or her interest. Therefore, involving an element of private sector intrusion would help neutralize the selfish-inclinations of public actors. Public officials, according to public choice theorists, tend to be more interested in rent seeking activities that generate income to them, prestige and power and mostly tend to undermine the need for public and social welfare (Downs, 1966).

From the discussion above, one may not be far from wrong to suggest that most of the challenges involved in city authorities’ provision of solid waste and other sanitation services could be explained by the selfish ambitions of city officials. One may observe several discrepancies in the public sector provision of urban solid waste management services perhaps because the public agents mostly channel their offices (capacity and resources) largely to achieve personal or sectional gratification and not necessarily collective public interest. Against this thinking, scholars such as Frederickson (1997)

argue strongly for a need to inject more vibrancy into the system by bringing on board, private actors into public sector service provision to ensure efficiency and effectiveness to achieve one's objective.

2.5.3 Principal-agency theory

The principal-agent theory was also successfully applied to the study of solid waste management in the Accra Metropolis. It focused on the existing relationship (Turner & Müller, 2004) between the AMA as the principal and the solid waste contractors as the appointing agents of the Metropolis. Under this arrangement, AMA, the principal, depends on the accredited agents (solid waste contractors) in the Metropolis to undertake the task of collecting solid wastes from the homes of the inhabitants on behalf of the principal AMA (Müller & Turner, 2005) at a fee payable by the householders under the guise of the polluter pays principle.

The study reveals that both the principal (AMA) and the accredited agents (contractors) play key roles in the management of solid waste in the Accra Metropolis. Considering the inability to lead the assault on the threat posed by the ever-increasing waste generation in the Metropolis, the principal (AMA) saw the need to incorporate the contractors (seen as agents of AMA) in the waste collection efforts. The rights given to the contractors mandated them to move into households within their jurisdiction to collect generated waste for on-ward transportation to landfill sites. By this arrangement, AMA shifted the inherent risks in solid waste collection of household waste to the agents who used their

superior resources to reduce solid wastes kept in homes at a fee payable by the householders under the franchising agreement.

2.5.4 Property rights theory

Property rights theory attempts to uncover the rationale behind the incentives that enable the private sector to achieve efficiency and effectiveness in performance (Preker et al., 2000). Experts have explained that the possession of residual decision rights and the allotment of enduring return (Milgrom & Roberts, 1992) are the key drivers of property rights concept. By residual rights of control, the firm is giving the privilege to take decisions regarding the use of assets not clearly contracted under law or mandated to another by contract. The AMA, the owner of assets and holds the ownership rights, who, for the sake of efficiency and effectiveness, allocates the right of collection and transportation of solid wastes to assigned contractors in the Metropolis. The solid waste contractors, possessing variety of assets including bigger trucks, expert labour, technology and ownership of the suburb, are required to use these resources to transport the collected wastes from households to landfill sites (Milgrom & Roberts, 1992). These (solid waste) contractors get rewarded through the payment of fees by the householders who benefits from their efficient services under the franchising arrangement in the Metropolis.

Applying this to the solid waste sector reveal that most solid waste services have some degree of excludability, rivalry and rejectability, according to Preker et al. (2000). Thus, the adoption of these theories aids in an understanding of how different theoretical

models/arrangements can be used to enhance effective and efficient service delivery in the Accra Metropolis.

The use of theoretical frameworks of Sociological, Public Choice, Principal-Agency and Property Rights theories provide a robust theoretical framework to underpin the study.

The justifications are that:

- i. The Public Choice Theory argues that wastages and structural challenges in the public sector service provision is largely attributable to self-interest of officials,
- ii. Addressing the challenge requires involvement of the private sector
- iv. The sociological theories discussed above argue that the combining effect or results of sub-systems here (public and private sectors) help to provide a robust output which is better than the sum of the two parts.
- v. The Principal-Agency theory also examined the relationship between AMA, the principal and the contractors as the agents of the AMA which have been given the mandate to collect solid waste from households on behalf of the AMA in the Metropolis.
- vi. The Property Rights theory argued that contractors were able to perform because of the incentives that they received from the contracts they were given by the AMA.
- vii. The sociological theories admonish that reaping off the benefits of co-operation or partnership largely depends on the nature of the conditioning factors and

- v. The system changes based on dynamism of the system and its environment. These underlying principles are very much relevant in the prospective study and have been discussed adequately in the study.

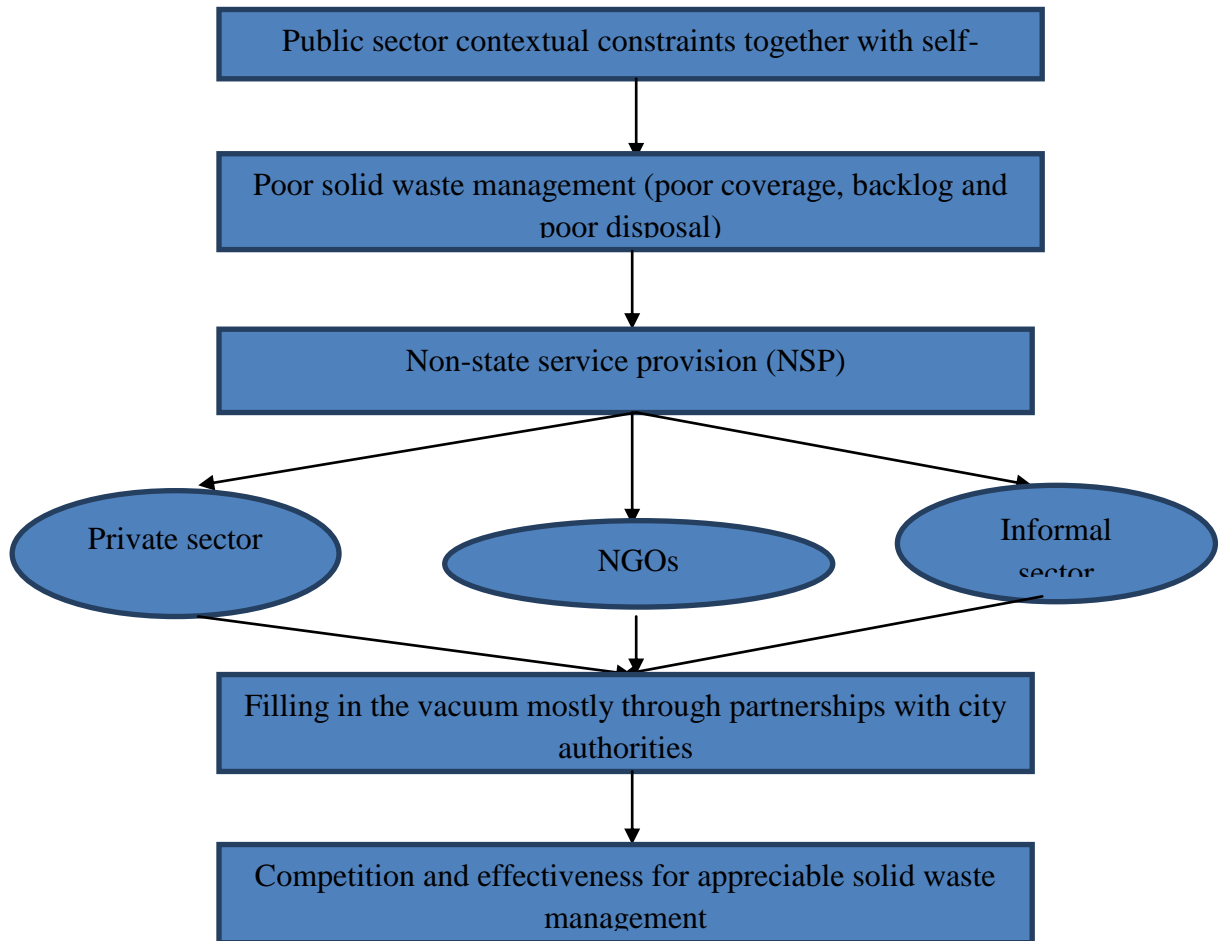
2.6 Conceptual framework

From the literature review and theories explained, the study is underpinned by the conceptual framework shown in Figure 2.2 below. The framework explains a central idea that the challenges confronting the Ministries, Municipalities, Departments and Agencies (MMDAs) in solid waste management largely emanates from the public sector constraints in terms of adequate human, financial, technological and logistical challenges which is mostly worsened by the selfish posture of many public officials (Post et al., 2003; Miraftab, 2004). These issues and challenges surrounding public sector solid waste service provision mostly lead to poor urban solid waste outcomes especially where the public sector enjoys monopoly, yet, are overwhelmed by rates of solid waste generated. Within such context, it is deemed essential to open up the space to allow various forms of non-state actors to come on board to partner with the public sector which will help inject new technology, logistical support, adequate capital and improved coverage (Frederickson, 1997). As a requirement, the public sector (AMA) is expected to establish institutions to serve as bedrock for the successful take-off of the franchising/partnership arrangements between AMA and the contractors.

The Non-State Providers mostly include the private sector, NGOs/CBOs and informal waste pickers or scavengers who operate on varying scales with different client-base. The private sector is more regularized and much sophisticated in terms of organization, formalization and use of resources. Due to their capabilities, they are able to enter into various forms of partnerships with Metropolitan authorities to facilitate the management of solid waste within municipalities. The informal sector on the other hand, mostly operates in fringe communities and thus, has smaller customer-base. There are other NGOs whose activities are geared towards helping community members to manage their solid waste. The interplay between these non-state service providers and public sector helps to serve a greater number of households and clients at a fee. The competition among each of these entities for client-base or customers helps in providing effective customer satisfaction which wouldn't have been a priority if there were monopoly.

An interesting observation is that each of these actors has peculiar areas of strengths which help to serve their clients well. For example the informal sector mostly serves households in the ghettos or smaller communities which would otherwise have been neglected by the large-scale private actors. Using the sociological theories to make a case, it is argued that the combined effect of sub-systems (public and private sectors) helps to provide an appreciable output which is better than the sum of the two parts. In order to arrive at this appreciable solid waste management situation, sociological theories admonish municipal authorities to put in place appropriate conditioning factors and appropriate institutional environment that seeks to regulate activities and operations of private actors. Figure 2.2 below depicts the above expositions.

Figure 2.2 Framework for solid waste management in the Accra Metropolis



Source: Author's own construct (2018)

2.7 Empirical literature

Globally, it has been advanced that partnership between the public and private sectors serves as a panacea to improvements in the delivery of solid waste management services. But the question is: is it always the case? This section empirically reviews various public-private partnership arrangements that have been embarked upon by city authorities and private partners to help in managing solid waste. The aim of the section is to assess how

each of the arrangements failed; what were the success factors; the failure factors and if there are any key lessons for other city authorities who are entering into such arrangements can learn from. The section provides answers to these questions.

Employing a qualitative study approach and using the cases of Delhi and Manila the capital of India and Philippines respectively as study areas, Saei (2012) carried out a study to assess the extent to which public private partnership improve solid waste management situation in the cities of developing countries. The study observed that the growing deterioration in the environment is as a result of the increased population growth, uncontrolled or rapid urbanization and economic progression which has challenged the capacity of the public sector to work up to the expectation of the citizenry.

Whilst it was observed that the private sector possesses resources in terms of technologies, capacities, efficiencies and expertise needed for the effective management of solid waste, the study emphasizes the role of the public sector as the trustee credited with significant responsibility in designing regulations, monitoring and evaluating the private sector contractors. The study concludes that until all stakeholders from formal and informal institutions, NGOs and communities are involved in the solid waste management process, a durable and sustainable solid waste management system is not possible in developing countries. This study provides lessons which argue that achieving effective solid waste management requires a concerted effort between policy makers, formal and informal private actors, communities and other stakeholders; failure to do so

would at best provide a piecemeal solution or stall the entire process (Oteng-Ababio, 2013).

Kirama & Mayo's (2016) research into challenges and prospects of private sector participation in solid waste management in Tanzania was aimed at assessing the effectiveness of the private sector in managing solid waste in the capital city of Dar es Salaam. Solid waste collection and transportation was a major problem facing urban areas in Tanzania including Dar es Salaam. A number of factors militated against the Tanzanian government's ability to fight the crisis experienced in managing her solid waste sector. The factors included uncontrolled population growth, rising urbanization, industrialization, low institutional and technical capacities and financial constraints (Saidou & Aminou, 2015; Kirama & Mayo, 2016). The presence of a squatter population in the city of Dar es Salaam did not help matters as these (squatter) residents lacked the necessary infrastructure and social services needed to improve solid waste situation (Kirama, 2013; Kasala, 2014). In view of the seriousness of the solid waste situation, the government roped in the private sector through a policy of decentralization (Ancog et al., 2012) to improve the solid waste system. However, the companies that were contracted could collect only 9% (2,679 tons) of a generated waste stock of 29,764 tons per week in the city. The impact included indiscriminate disposals in unauthorized places, air pollution and ill-health. The research asserted, however, that solid waste management in Dar es Salaam could improve through the implementation of policies, institutional reforms, human resource capacity building, stakeholder participation and the re-enforcement of private sector participation in waste collections. Kirama & Mayo (2016)

concluded that the involvement of the citizens, their obedience to laws and by-laws, a responsive community and their willingness to pay refuse fees; dumping of solid wastes at the right place, enforcement of by-laws and promotion of good waste management practices are all factors that encourage safe environment which are conducive to human habitation.

In a similar study by Garg et al. (2007) to assess the partnership between Municipal Corporation of Delhi and Metro Waste Handling (p) Ltd., it was revealed that the partnership yielded a significant improvement in the solid waste management situation in the West zone of Delhi City of India. The study observes a paradigm shift in the sphere of solid waste management with the advent of public private partnerships. The authors found a significant uplift in solid waste management in the west zone of Delhi which was hitherto, neglected totally. It was further revealed that, the advent of the private partners led to the injection of sophisticated technology into the waste management regime; GPS (Global Positioning System) based traction system for the vehicles and a state-of-the art complaint redress system. The use of wireless and cell phones has resulted in better coordination, improved community participation and effective operations.

Back home in Ghana, a study was carried out by Oteng-Ababio (2010) to evaluate PPPs in the Greater Accra Metropolitan Assembly. The author observes that the process appeared impressive with a 25% improvement in the solid waste collection rate with successes in waste recovery, recycling and marketing of recyclable products. However, the process appeared bleak when the authorities failed to honour their obligations as per

the contract. This affected the value chain of the process as contractors also failed to sustain regular service delivery because of non-payment for work done. Consumers also appear reluctant to pay for inefficient services. The study provides lessons that in the PPP arrangement, each party in the process must do well to honor their part of the contract as any shortfall may disrupt the entire value chain.

From the review of empirical literature discussed above, one could observe some peculiar success factors as well as challenges that have befalling solid waste management under PPP in different contexts. Yeboah-Assiamah et al. (2017), in reviewing PPP case studies in developing countries observed that such experiences calls for a strong need for openness, carefulness and display of truthfulness in the process of PPP contracts. According to Yeboah-Assiamah et al. (2017), this requires that the process should be as open as possible to allow prospective and qualified private players to actively participate in non-partisan and non-merit or astrictive basis in the contract arrangement. Additionally, it is very important to regulate and supervise the process especially after the suitable candidate or company has been selected. As stated earlier, PPP in SWM would achieve the objective(s) set through effective monitoring, supervision and regulating the activities of the actors. It is when these are done that PPPs would achieve the objective of effectiveness, efficiency and economy (Yeboah-Assiamah, 2015).

2.7 Conclusion

This chapter has discussed solid waste management in the context of how the strengths of non-state service providers could be used to leverage urban sanitation service provision. The review discussed the major challenges confronting developing countries with regards to their solid waste circumstances. The review observed that among other factors, the general ineptitude, logistical, financial and structural constraints of the public sector makes them overwhelmed with challenges of solid waste management especially in an era of increasing population growth and urbanization which increases the volumes of solid wastes generated in urban communities. The chapter has discussed appropriate measures for addressing the challenges facing developing countries with regards to their solid waste management. The idea of opening up the space for private sector intervention through PPPs has been explored through the lens of public choice theory and sociological theories. This has been captured well in the conceptual framework which illustrates how efforts of public and non-state service providers could help engender an appreciable solid waste management.

CHAPTER THREE

RESEARCH METHODOLOGY AND STUDY AREA

3.1 Introduction

This chapter presents the methods and procedures adopted by the study to carry out the research. The chapter begins with a description of the research paradigm and the design underpinning the study as well as justification for their selection. It also presents the sources of data and sampling techniques as well as instruments of primary data collection. The chapter also discusses instruments of data collection and procedure. Lastly, data management techniques are discussed in this chapter. The chapter then ends with a description of the study area.

3.2 Research Methods

3.2.1 Research paradigm

Research philosophy or paradigm is used by researchers to guide their study. The basis of research philosophy is rooted in Lincoln & Guba's (1994) explicit pontification of reality (ontology), the researcher's reality (epistemology) and the techniques (methodology) adopted for the study. The study is underpinned by interpretivist research paradigm which posits that knowledge is relational and subjective. Reality is assumed to be special to the individual with his or her own unique set of state of affairs and existence, practice, constructs and analysis of his or her environment (Creswell, 2013). Juxtaposing the argument of interpretivism on the topic under study (PPP in SWM), the stakeholders have their set of beliefs, opinions and experiences to express about the myriad of solid waste

management difficulties in their vicinities as far as the generation, collection, transportation and final disposal of solid wastes at the landfill site was concerned.

Whilst positivists believe that the researcher must detach himself from the study, viewing the world as one way mirror (Denzin & Lincoln, 2011), constructivist or interpretivists believe in the researcher participating in the research for a better understanding of the investigations under consideration (Denzin & Lincoln, 2011). Since the research concerns human beings and their relationships coupled with their experiences with the environment, constructivism is preferred in this study to positivism of any kind which believes otherwise. This method of appreciating the views of stakeholders' was aimed at getting an understanding of the research participants' opinions and actions contextually about solid waste issues in the Metropolis. These complexities may be fixated on the adoption of qualitative methodology which uses interview guide and questionnaire administration to achieve the objectives set for the study.

3.2.2 Research Design

Research design is the logical sequence that connects empirical data with a study's initial research questions and ultimately to its conclusions. It, thus, guides the researcher in collecting, analyzing and interpreting observations (Creswell, 2009). The study adopts the case study design approach. A case study is considered appropriate to describe the characteristics, perspectives and contextual assessment of a phenomenon which is given from the point of view of participants within that space (Yin, 2003; 2011). Solid waste management problem as a social issue mainly affects households and remains a problem

to city authorities in the Metropolis. The study adopts the specific case of AMA for an in-depth discussion of its solid waste management situation. A case study design enable researchers to adopt and combine different data collection instruments involving in-depth interviews, questionnaire administration, personal observation and detailed content analysis in gathering data for the study (Saunders, 2011).

3.2.3 Research Methodology

The study employs the qualitative approach of social research because solid waste management is an issue whose adequate assessment requires exploring the views, sentiments and practical experiences of households and the other stakeholders within a particular context. This methodology allows the researcher to have an in-depth understanding of the phenomenon under discussion, especially if it requires deeper insight (Yin 1994; 2003; Sullivan, 2001; Creswell, 2013). Qualitative research involves the use of soft data in the form of gestures, impressions and symbols of the respondents, among others (Neuman, 2007). With such unique attributes of qualitative approach, the researcher is able to make a very strong interpretation from the interaction with key informants.

According to Creswell (2009), qualitative study provides an assortment or sources of information that are very interactive and humanistic. The choice of qualitative method is to enable the researcher have a deeper information on households' experiences and assessment of solid waste management from their own point of view. It also affords the researcher the opportunity to understand the phenomenon under consideration from

stakeholder perspective, gain a new outlook and expand the scope of earlier studies under similar conditions. This is because the qualitative method is tailor-made to facilitate the answering of the ‘how’ and ‘why’ questions. It is therefore very suitable to achieve the research objectives and to answer the research questions. Qualitative research enables researchers to use different research instrumentation to collect data from varied sources. These include the use of case studies, semi-structured interviews and observations (Saunders, 2011) in the data collection drive. Again, qualitative data helps to understand the dynamics of the solid waste management regime in the Accra Metropolis.

3.2.4 Sources of data

The study makes use of two main sources of data: primary and secondary sources.

3.2.4.1 Primary data

Primary data was elicited from respondents from the Accra Metropolitan Assembly, decentralized agencies relevant to public health and sanitation, formal private partners in solid waste management and solid waste generators in selected households in communities or suburbs in the Metropolis. More importantly, households from selected neighbourhoods within the Accra Metropolis formed a crucial source of primary data and unit of analysis. The use of primary data from various sectors or category of stakeholders was to help reduce perceived biases in the study process.

3.2.4.2 Secondary data

Secondary data was sourced from bulletins which were relevant to solid waste situation in the Metropolis. Content analysis of documents with respect to PPP and SWM that were entered into by AMA and private partners were incorporated in the discussions. Other secondary sources used included journals, scholarly books, newspaper publications and internet, published and unpublished materials which were deemed relevant to the topic under discussion. Databases used included EBSCO, SAGE, Emerald, Science Direct and Google Scholar. From these databases, key words including public-private partnerships, solid waste management, principles for effective public-private partnerships, challenges in public-private partnerships for solid waste management, System's Theory, Public Choice and public-private partnerships were used for literature search. Again, previously authored PhD thesis in soft (online) and hard copies were used as additional secondary data.

The use of both primary and secondary sources of data in the study enabled the verification of data and cross examination to enhance the reliability of the data and research findings.

3.2.5 Target population

Population involves the number of people or groups that are involved in a study (Eller, Brain & Robinson, 2013). The target population for the study involves three stakeholders in the PPP arrangements: officers from the Metropolitan Assembly, the private solid

waste management companies and householders from selected suburbs. The officials from AMA included policy makers and heads of decentralized public agencies relevant to urban sanitation in the Metropolitan Assembly. The private solid waste management providers including top staff from selected solid waste companies as well as householders in the Accra Metropolis were penciled for the study. These groups of respondents were targeted so that data collected from each were matched against the other in order to ascertain the trend of solid wastes flow issues and its discrepancies. Five major private solid waste companies were contacted and interviewed for the study. They are Asadu Royal Seed, Jekora Ventures, Liberty Waste, J. Stanley Owusu and Zoomlion (Gh).

3.2.6 Sample size

The stakeholders (AMA, private solid waste contactors and households) together constituted a triad which worked hand in hand in achieving the objective of clearing the Metropolis of solid wastes that were generated from homes. A sample size of one hundred and ten (110) respondents was used for the entire study. The breakdown is as follows: five (5) respondents from the Accra Metropolitan Assembly who have worked closely with the urban sanitation department of the Assembly and five (5) respondents selected from private solid waste contractors in the Metropolis. One hundred (100) respondents from selected residents/suburbs (households) were also contacted for the data collection exercise. The suburbs from which the samples were taken are Kotobabi and Korle Gonno (Third Class residence); Dansoman and Kaneshie (Second Class residence) and Airport Residential and North/Roman Ridge (First Class residence), according to the criteria of the AMA (LGB, 2018).

3.2.7 Sampling procedure

The study adopted purposive sampling technique which was used largely to select unique cases that are very informative and difficult-to-reach population (Neuman, 2007). This technique enabled the researcher to use his judgment to ascertain the categories of respondents who would best provide relevant information to achieve the objectives of the study. Through this technique, specific officials and individuals from the Accra Metropolitan Assembly and decentralized units as well as householders and private waste collectors were sampled for the study. Their positions and depth of information in PPP and SWM in the Metropolis that they possess were basis for their purposive selection. The purposive sampling technique was appropriate because it enabled the researcher to select difficult (or not easy to reach) population and informants who were deemed to have had essential information to share to enrich the research in the study area (Neuman, 2007). By this technique, key respondents were selected from the Accra Metropolitan Assembly due to their positions and depth of information on PPP and SWM in the Metropolis that they possess.

Householders were selected through the cluster and purposive sampling techniques. Cluster sampling involved classifying the entire population (households) into segments based on their unique attributes (income brackets and social status). AMA has categorized residential areas in the Metropolis into three, depending on environmental, socio-economic factors and population factors. These are the first (high) class, second (middle) class and third (lower) class residential areas. The communities selected for the study respectively are Airport Residential and North Ridge (First Class communities);

Dansoman and Kaneshie (Second Class communities) and Kotobabi and Korle Gonno (Third Class communities). Meanwhile, there is a fourth category, those living in slum areas which were not incorporated in the study because the solid waste arrangements in these areas are executed by the Metropolitan Assembly itself under the interventionist approach. They are served by the Metropolitan Assembly's communal containers which are placed at strategic locations as solid wastes collection points (Amoah & Kosoe, 2014). The cluster technique adopted allowed for a more informative response based on the peculiar context or location of respondents or character of the cluster. The main rationale for such cluster interview was to elicit an inductive view from the perspective of the residents.

Purposive sampling technique allowed the researcher to select the householders to be interviewed and the calibre of householders to pick since the questionnaires were self-administered. The researcher purposively selected householders who have attained a significant level of education to respond to the questionnaires by themselves. The lack of data on respondents' registration compelled the researcher, with inputs from AMA officials, to again select household respondents who were clients of the solid waste companies operating in their jurisdiction. The number of respondents interviewed was influenced by Saunders (2010) recommendation that qualitative research can pick on up to 60 respondents in a single case study.

Data from each of these sources were triangulated with information from the AMA officials and that of the private waste collectors and further discussed in relation to the existing public-private partnerships in solid waste management empirical literature.

3.2.8 Research instrumentation

The main instruments for the primary data collection were in-depth interviews, questionnaire administration and personal observations. These different tools were combined to make for a robust and reliable data. This was because the structural weakness in one technique was augmented by the strengths of the other techniques. In the first place, in-depth interviews were used to elicit information from key officials at the AMA and selected private waste providers. This technique is appropriate when researchers do not want to lead respondents or limit them to specific responses but made to answer from their perspective based on context, experiences and observations.

A great merit is that if their responses are not adequate enough, the researcher still has opportunity to ask further or follow-up questions (Flick, 2014). The interviews were underscored by a semi-structured interview guide (Saunders, 2011) that contained key questions which centred on the objectives of the study. The semi-structured interview guide enabled the researcher to ask probing questions to obtain detailed responses from respondents and each interview lasted for an average of fifty minutes to one hour which were audio-recorded. However, two of the solid waste management companies opted for an interview without recording. They rather opted for questionnaires which they filled and returned on schedule.

In addition to the interviews, questionnaires were distributed to selected householders to obtain their view points and experiences on how the partnership had influenced the management of solid waste in their jurisdictions. Owing to the selected number of households, questionnaire administration was considered more feasible and appropriate, hence, its usage. Additionally, respondents were selected purposively to respond to questions at their own free time and convenience and did not interfere with the work schedules of respondents. Again, time factor and cost issues made the questionnaire administration most feasible, hence, was administered to one hundred (100) selected householders. Because the research method was purposive, which made it possible to reach out to the educated; there was a 100% retrieval rate. Finally, the study made use of personal field observation which Creswell (2013:166) conceptualizes as looking directly at the behaviour of respondents or phenomenon on the field through the use of the “senses of the observer” as the phenomenon unravels. This (senses of the observer) was used to spot physical settings, activities, interactions and behaviours. Observation encouraged the truth or otherwise to be known about participants’ actions and responses during interactions. Apart from physical observation, photographs were taken during field observations which were incorporated in the data analysis and discussions. A Field Note Book was used to record minor but relevant information on events on the interviewing scene. This aided in recollecting important dates, appointments and to meet schedules.

3.2.9 Scope and limitation of the Study

3.2.9.1 Scope

The study focuses on Public-Private Partnerships in Solid Waste Management in the Accra Metropolitan Assembly as indicated time and again. There are various forms of PPP arrangements municipalities and governments in developing countries choose from to deal with their solid waste quandary. These (PPP) forms are management contracts, service contracts, BOOT, BOT and franchising, among others. The study, thus, limited itself to the use of franchising arrangement or contracting as was adopted by the Accra Metropolitan Assembly. As indicated in the study, five private formal contractors, five AMA officials and one hundred householders residing in six special suburbs were selected for the study. The Accra Metropolitan Assembly, thus, was selected for the study based on its peculiar characteristics, including being the nation's capital, the home to foreign missions and the first to adopt PPP (franchising) to get to the bottom of her solid waste predicament. The implementation has led to the diffusion of the franchising agreement in other Metropolises, municipalities and district Assemblies (MMDAs) in the country. The study is, as a consequence, limited to the Accra Metropolitan Assembly.

3.2.9.2 Limitations of the Study

The identified limitations of the study included financial constraints, time and difficulties in getting feedback from respondents.

3.2.9.2.1 Financial constraints

One major problem encountered was raising enough funds to meet the financial demands of the research in the face of the absence of an identified sponsor. The researcher with difficulty had to raise funds from diverse sources to finance the numerous activities involved in the research including photocopying of materials, printing of sourced information, printing and administration of questionnaires, cost in writing and printing reports (drafts) and the final Thesis. Included in the cost factor were the numerous travels to the offices of the respondents to honour appointments, to landfill sites to observe proceedings and the allowances that were given to the research assistants who were temporally engaged.

3.2.9.2.2 Time constraint

Again, time was a constraining factor. The duration of the study was not enough to have encouraged the use of large sample sizes, interview more sector players and visit numerous offices and sites to ascertain real situations on the ground. Even though time was a militating factor, it did not have tremendous effect on the study.

3.2.9.2.3 Lack of cooperation from respondents

Again, the lack of co-operation from the targeted population (respondent) was a source of concern. Some respondents had to be replaced because they did not adhere to agreed

deadlines. Other respondents did not show up at all after booking appointments on the part of the contractors as well as the officials from AMA. For the householders, their busy schedules compelled them, perhaps, to return the received questionnaires. On the part of the officials of AMA and formal private contractors, there were several postponements and re-scheduling of appointments. These were so because of the tight schedules the officials operated within. This delayed data gathering and for that matter disturbed the scheduled completion time (table). Nevertheless, the study was able to meet the targeted population of one hundred householders, five participants from AMA and five from the formal contractors as well as meet with the informal sector.

3.2.10 Data management

3.2.10.1 Transcription of data

All responses that emanated from the interviews were transcribed into word document file. This data were later cleaned and sorted out in themes that reflected the study objectives. Columns were designated for salient issues in the responses given by respondents; the key agreement points as well as disagreement points were given separate columns whilst a final column details the emerging theme from such observations in the responses. The next row was given to another informant using the same headings for the columns. Through this process, the researcher made critical observations and interpretations. These were done for all respondents and their arguments were reconciled with one another to make key inferences. The emerged trends in the respondents' answers were triangulated with questionnaire data and the necessary inferences made. In the course of data analysis, narratives from respondents were used to enrich the discussion.

3.2.10.2 Reliability of data

The study took pragmatic steps to present accurate facts by minimizing perceived and plausible errors associated with Social Science research. Internal validation was improved by framing questions in simple terms that were well understood by all the respondents, especially the householders through self-administration. The rule of conformity and homogeneity was applicable when the researcher approached stakeholders in their identified settings for the interactions. To improve on reliability and validity, multiple sourcing of data (triangulation) was employed in the study.

3.2.10.3 Pilot study

In order to validate and make findings reliable, a pilot survey was conducted in selected suburbs between the 3rd and 25th of April, 2017. The selected suburbs for the pilot study were Labone (First class), Dzorwulu (Second class) and James Town (Third class) according to LGB (2018). These areas did not form part of the suburbs selected for the main study. The population sample for the pilot study for householders was ten in each of the (three) selected neighbourhoods. Participants were randomly picked for the survey interview. Permission was requested from each participant for their consent before the interviews. On the part of contractors, three out of the twelve solid waste contractors operating in the Metropolis were selected for the pilot study. They were Geo (North Ridge), Vicma (Kaneshie) and ABC (Kotobabi). Five informal sector operators were also picked for interviewing. The informal operators, popularly called “Aboboyaa” were incorporated in the interview because of their perceived role as competitors to the formal sector operators. They were also seen as having basic and reliable information which

were needed to understand the dynamics of the management of solid waste in the Metropolis of which the study wanted to establish the veracity or otherwise of it (dynamism). A few AMA officials were interacted with informally as part of the pilot study.

The essence of the pilot study was to enable the initial questionnaires and in-depth interview guides to be tested and refined whilst at the same time, gather experience for the main research. The pretesting aimed at having a clearer understanding of the study and the validation of the content. The feedback received enabled modification of the main questionnaires and the other instruments. These were used to enhance data collection and subsequent management of solid waste in the Metropolis.

3.2.10.4. Ethical considerations

Access and acceptance was sought before approaching the respondents. Creswell (2013) admonishes that permission must be sought before the respondent would allow someone into his or her physical, but private space. An introductory letter from the Department of Public Administration and Health Services Management, signed by my Thesis supervisor, Professor K. A. Domfeh, was sent to the relevant bodies to obtain official permission to interview key participants. This enabled the researcher to come into agreement with the respondents and to fix dates for the interview and interviewing those who have consented to be interviewed. Clearance was also sought from the University of Ghana Ethics section to be allowed to conduct this research.

3.2.10.5 Respondents' confidentiality and identification

Lastly, issues bordering on confidentiality and anonymity were adhered to. Under no circumstance were names and identities of any participant disclosed to the public for them to be ridiculed or known or divulging information about them to competitors. As far as possible, pseudonyms (identification numbers) were used where there were strong desires to use the names of participants so that they cannot be traced with the information they provided. Appointments were booked to meet participants at their own convenience and comfort and did well to operate within the time limits agreed on. Recording of proceedings also took place after the participants have agreed to such.

The study, nonetheless, adopted the following abbreviations to identify respondents in the discussions segment. On the part of AMA officials, the following abbreviations were used: Waste Management Department (WMD) Officer 1 (First AMA Officer interviewed); WMD Officer 2 (Second Officer); WMD Officer 3 (Third Officer); WMD Officer 4 (Fourth Officer) and WMD Officer 5 (Fifth Officer). The first three officers interviewed work with the solid waste section whilst the fourth and fifth were with the Public Health Unit of AMA.

For the formal contractors, the following identification strategies were used for them: Private Sector Participant (PSP) Officer 1 (Contractor 1, Asadu Royal Seed); PSP Officer 2 (Contractor 2, Jekora Ventures); PSP Officer 3 (Contractor 3, Liberty Wastes Services); PSP Officer 4 (Contractor 4, J. Stanley Owusu Wastes) and PSP Officer 5 (Contractor 5, Zoomlion).

The householders were identified with numbers ranging from 1 to 100. For the first class residential communities, First Class Resident (FCR) householders were numbered from 1 to 33 (FCR Householder 1 – 33); Second Class Resident (SCR) householder, from the second class zones were also given numbers from 34 to 66 (SCR Householder 34 – 66) whilst TCR householders, from the third class zones, were given numbers from 67 to 100 (TCR Householder 67 – 100).

3.3 Study Area

3.3.1 Introduction

The study area is the Accra Metropolitan Assembly which is in the Greater Accra Region of Ghana. Greater Accra is among the current ten administrative regions of the country and is the national capital and the smallest of the regions. The issues that pertained to the study area have been discussed below.

3.3.2 Accra Metropolitan Assembly in perspective

The Accra Metropolitan Assembly is among the two hundred and sixteen (216) Metropolitan, Municipal and District Assemblies (MMDAs) in the country that were created by the government, under the Local Government Act, 1993 (Act 462) and by Legislative Instrument (1615), according to the Local Government Act (LGA, 1993). It is one of the six Metropolitan Assemblies in the country and the largest of them.

Historically, Accra has been the national capital since 1898 after it (the capital) was moved from Cape Coast. It also serves as the Regional capital for the Greater Accra

Region. The Metropolis share boundaries with the following municipalities and districts: to the West, it is surrounded by the three Ga Assemblies (Ga West Assembly, Ga South Municipality and Ga Central District); to the East by Dadekotopon Municipality and to the South by the Gulf of Guinea. All these border districts used to be part of the bigger Accra Metropolitan Assembly until they were separated. Accra is a coastal city with the highest population concentration or density in the country (GSS, 2010). Even though the original occupants were believed to be the Ga/Adangbes' (Adu-Boahen, 1975), the city has taken on a cosmopolitan posture, like the sister city of Ibadan in Nigeria (Oluyinka, 2011). With a population growth rate of 3.5%, the Accra Metropolis has an estimated population of more than 1.7 million people excluding migrants (GSS, 2010). Together with the rest of Accra, it has an estimated population of more than four (4) million. The map below (Figure 3) depicts the extent of the geographical disposition of the Metropolitan area.

The development of infrastructure and services coupled with employment opportunities has made the Metropolis the centre of attraction for people (migration) from all corners of Ghana (Songsore, 2003; Songsore et al., 2009). The major economic activities that dominate the Metropolis' economic activities include the booming service sector (including commerce), educational sector, industry and tourism. The Accra Central Business District which has been at the center of retail activity for many years is informal-sector controlled, with thousands of people flocking to the CBD to participate in the booming commercial activities on daily basis. Owusu (2008) avers that almost all the important players and agents of the government, the international community including

Non-Governmental Organizations (NGOs), multi-national institutions and expats, among others, are found in the Metropolis. Baabereyir (2009: 100) posits that Accra is “much larger than any other city in the country in terms of area, population, economy and other variables thereby exercising primacy over Ghana’s urban system”. This has, indeed, made the Metropolis a unique reference point. All these characterizations give a fair idea about the solid waste generation capacity and management in the revered city of Accra.

For effective and efficient solid waste administration, the Metropolis has been divided into ten sub-metros (GSS, 2014; Composite Budget, 2016). Of these, Ablekuma South (Dansoman and Korle Gonno), Okaikwei South (North Kaneshie), Ayawaso Central (Kotobabi) and Ayawaso West-Woguoan (Airport Residential Area and Roman/North Ridge) were selected for the study. Figure 3.1 (APPENDIX 3) depicts the Map of Accra Metropolitan Assembly and the neighbouring districts/municipal assemblies it shares borders with. It also depicts the ten sub-metros it has, for the efficient administration of the Metropolis, including her solid waste management (GSS, 2014).

3.3.3 AMA categorizations

AMA has been categorized into three: high income class, middle income class and lower income class (Baabereyir, 2009; Miezah et al., 2015). The high income class includes Airport Residential Area, Roman Ridge, North Ridge and parts of Dzorwulu (LGB, 2018). These are residential areas that are defined by good infrastructure such as good roads, contemporary social amenities and facilities with reliable electricity supplies, regular supply of water and organized housing infrastructure. The size of the family

(nuclear) of residents in the first class zone is small. Residents enjoy adequate protection from government and private security agencies. The occupants of these plush areas enjoy improved environmental services and are therefore not affected by environmental threats and challenges that are experienced elsewhere. It is believed that the well-to-do in the society who constitute the elites, affluent and decent people reside in this enclave.

The second class precincts include Dansoman, Bubuashie, North Kaneshie, Kokomlemlé and Abelenkpe (LGB, 2018). The residents previously enjoyed good environmental conditions including nice and adequate infrastructure but these have deteriorated over the years. The houses are semi-detached and are mostly occupied by businessmen/women, government employees and specialized staff and their relations. The environmental quality here is a bit below that of the first class zones, but quite good. Residents enjoy appreciable social amenities and facilities.

The third or lower class residential areas include Kotobabi, Korle Gonno, Jamestown, Maamobi and Nima (LGB, 2018). These areas are deprived of socio-economic and environmental infrastructure and are noted for their slum-like environments (Miezah et al., 2015) which affect the quality of life and solid waste management in these areas (Fobil et al., 2001; Oluyinka, 2011). Population density here is relatively high (GSS, 2010), unlike their counterparts in the First Class zones. The limited public places of convenience and collection points for solid wastes have contributed to massive deterioration of (lower class) urban environment. The disorganized nature of the environment encouraged indiscriminate disposal of solid wastes in unauthorized places.

Communal container services are rendered in unserviceable locations but are mostly seen overflowing with solid wastes.

Baabereyir (2009) asserts that overconcentration of people and commercial activities at a place put pressure on the limited socio-economic facilities available leading to its fast deterioration in environmental cleanliness and solid waste removal provisions. It must therefore be concluded that these classes of residential areas had unique solid wastes requirements which the research examined.

3.4 Conclusion

The chapter focused on two broad issues. These are the research methodology and study area. The research was premised on the interpretive/constructive philosophy, the use of qualitative approach and case study as tools of discussions. Issues concerning the study area of the Accra Metropolitan Assembly were also included in the discussions.

CHAPTER FOUR

INSTITUTIONAL ARRANGEMENTS FOR PPP IN SWM IN THE ACCRA METROPOLITAN ASSEMBLY

4.1 Introduction

Public-Private Partnership has become a widely used model for most important infrastructure and service delivery the world over (Boardman & Vining, 2010; Forrer, Newcomer & Boyer, 2010; Siemiatycki, 2013, 2015; Boardman, Greve & Hodge 2015). There is strength in terms of economy, efficiency and effectiveness when the state and private entities forge such partnerships. This is because the state is mostly constrained in terms of containing the ever growing demands regarding service delivery and infrastructural development to meet complex pressing societal demands.

“For instance, there is poor sanitation in most developing countries due to rapid increase in solid waste generation triggered by increasing urbanization, growth of manufacturing industries and population growth (UNDESAPD, 2014; Awosan et al., 2018). This trend ideally requires a corresponding capacity growth of the public sector to adequately provide infrastructural need for managing the solid waste associated with this development. Like other developing countries, Ghana experiences sanitation challenge in its cities. In Accra, for instance, the Environmental Protection Agency (EPA) reports that about 2,800 metric tons of solid waste is generated in the Metropolis daily. Of this figure, 2,200 metric tons (78%) is collected and disposed of under proper management, leaving a backlog of about 600 tons (22%) which finds its way into open drains and water bodies

(EPA, 2014). According to the World Bank's Water and Sanitation Programme (WSP), the existing poor solid waste situation costs the Ghana Government about US\$ 290 million every year" (WSP, 2015).

It is in this regard that PPP has assumed a rather important mode for the delivery of solid waste management services in the developing world. PPPs entail institutionalized arrangement enabling a kind of cooperation between the public and private entities which pool resources and work together on the basis of their own objectives to accomplish a joint target (Nijkamp et al., 2002). Under a public-private partnership, a government institution enters into a long-term contractual arrangement with a private supplier for the delivery of agreed services. The supplier takes responsibility for building infrastructure, financing the investment and then managing and maintaining this facility. For this to be more effective, the government institution needs to adopt sound institutional structure and mechanisms to attract reliable and capable private solid waste contractors who will improve the sanitation condition. According to Scott (2011), institutions entailed a set of relational contracts which structure actions and behaviour. In other words, they are the humanly devised guidelines which enable or constrain human actions. They involve formal constraints (e.g. policy frameworks, rules, laws and constitutions), informal constrictions (such as norms of behaviour, conventions and codes of conduct) as well as their enforcement attributes.

It should be reckoned that PPP is not a magical contractual recipe to overcome typical governance problems of projects (Levitt et al., 2009). The literature suggests that the

success or failure of PPPs is affected by a number of factors, including the institutional environment of a location (Jooste, Levitt & Scott, 2011; Matos-Castano, Mahalingam & Dewulf, 2014). Studies conducted on roles of institutional framework in the implementation of PPPs have not been given much attention except some pockets of studies (Jooste et al., 2011). For example, Jooste et al. (2011) put emphasis on the significant role of facilitating environment for the successful operation of PPPs. It is obvious that PPPs are shaped by both institutional and political structures of the jurisdiction, hence, the diverse implementation of the policy in different countries and experiencing different outcomes. On their part, Delhi et al. (2010) discusses a governance framework on PPPs with an emphasis on how the institutional settings influence the process. They conceptualize the institutional environment to mean the context in which governments understand roles and responsibilities of actors in the PPP.

In spite of the fact that public-private partnerships have been advanced as a panacea to the growing solid waste management challenges in the developing world, (Hastings, 1996; Sagalyn, 2007), it has emerged from practical experiences that such anticipations in most cases have been dashed. In most of these studies, the failure of such PPP regimes point to institutional lapses, yet, the literature has failed to pay peculiar attention to the nexus between institutions and public-private partnerships in solid waste management (Jooste et al., 2011). This chapter discusses the institutional arrangements for PPP and SWM in the Accra Metropolitan Assembly. Among other things, it identifies the institutional arrangements established by AMA to encourage private sector participation in solid waste management in the Accra Metropolis. It also examines the governance

processes of PPP and SWM in the Metropolis. In addition to conceptualization of institution and institutional structure, the chapter provides data presentation and discussion along the main themes that emerged from the data gathered which include *policy framework and attributes; procurement processes; administrative or organizational structure establishments and franchising agreement.*

The chapter is organized into three main sections; beyond this introduction, section two provides a brief theoretical overview and a discussion of findings whilst the final section discusses the conclusion and policy implications.

4.2 Theoretical overview

The following institutional arrangements were put in place by AMA to lay the foundation for the franchising agreement in the Metropolis.

4.2.1 Conceptualizing institutions and institutional structure

Institutions entail the “formal rules, informal constraints (norms of behaviour, conventions, and self-imposed codes of conduct) and their enforcement characteristics” (North, 1991). Whilst DFID (1998) sides with the definition of North (1991), it provides further indication that institutions are made up of individuals who have clear configurations with a chain of command and authority and perform assignments and responsibilities appropriately allocated. DFID’s (1988) conceptualization falls in line with an argument by Schubeler et al. (1996) that the institutional context for solid waste management encompasses the structures of the establishments and their provisions, the

processes as well as the organizational procedures and capability of accountable foundations that have been laid. From the arguments above, institutions are used in this study to connote “rules of the game” and also ‘organizations with explicit structure with recognized tasks and responsibilities”.

Thus, institutional structure, according to DFID (1998) is the existence in an economy of the entire institutional arrangements needed to carry out specific actions. It encompasses linkages among individual organizations in the framework of law, policy, convention, ideology and culture in which they operate. The major institutional aspects of solid waste management involve those that bother on distribution of functions, responsibilities and authority between local and central government institutions; organizational structure of the institutions responsible for SWM, arrangements between city managers and private contractors, among others (Schubeler et al., 1996; Antipolis, 2000). These also include procedures and methods of solid waste planning and management; capacities of institutions tasked with solid waste management and capacities of staff and structural arrangements for private sector involvement. It is against such backdrop that scholars define PPP to connote supportive organizational provisions (Hodge & Greve, 2009) between the public sector and private sector contractors that allows for co-responsibility and co-ownership between the public and private sectors.

4.2.2 Policy framework

From the data gathered, it was observed that PPPs are structured and carried out within a policy framework that paves way for private sector participation in the collection of solid

wastes in the Metropolis. These policies motivate and encourage investments into the solid waste sector with assurances of good returns on investments. Before the advent of the policy on PPP, the Metropolitan Assembly engaged the services of private operators in gathering solid wastes from households and paid by the Assembly without following properly laid down guidelines. But upon the design and promulgation of its PPP policy (NPPPP, 2011), there is clearly a stipulated guideline and arrangement which now adopts a polluter pay principle where payments are done directly to private formal actors or contractors by householders. This policy framework has been propelled by the fact that the previous regime of private sector participation (PSP) posed financial burdens to the Metropolitan Assembly. This was explained by a key officer of the Assembly who intimated that the coming into force of the PPP policy by the Government of Ghana has removed the lid on financing solid wastes in the Accra Metropolis. He noted that:

“The government wanted to give impetus to the PPP arrangement in the country so it (government) came out with the PPP policy to guide its adoption in the country. The policy has changed the face of the management of solid waste through the franchising (agreement) which allows the Metropolitan Assembly to entrust the collection (of solid wastes) and payments (for municipal services) in the hands of the private sector and the householders respectively. So, the contractor collects household solid wastes whilst the householders also pay them for the services rendered” (WMD Officer 2, 2018).

From the foregoing, it suggests that PPP in SWM is largely top-down driven as such arrangements have been given an overarching legitimacy or central government approval through the introduction of a national PPP policy. Consequently, the space was opened

up for private sector participation in solid waste collection not only in the Accra Metropolitan area but also in other places in Ghana. Through this policy and localized PPP arrangements in the Accra Metropolis, it has encouraged various private groups and companies in solid waste management in the Metropolis. Currently, there are twelve formal solid waste contractors operating in the Metropolis, according to the WMD Officer 1 (2018). Thus, a policy framework which encourages many private actors to partner the public sector in solid waste management process is a welcoming call as this enables the AMA to address its solid waste concerns. Kwailanea et al. (2016) explain that attracting private contractors contribute a great deal to the reduction in solid wastes from homes of residents. It is therefore crucial for policies to be structured so that city authorities tap into the capabilities of the private contractors to deliver efficient municipal services (Little, 2011). However, the form and nature of PPP which the Assembly opted for, that is, franchising arrangement, involves the private actor dealing directly with subscribers, thus, relieving the Assembly of any financial burden.

4.2.3 Franchising Agreement

The models of PPP include Build Operate Transfer (BOT), Build Operate Own and Transfer (BOOT) and Restructure, Operate and Transfer (ROT), according to Dube & Chigumira (2011). The shape and form any PPP arrangement takes depends on context-specific factors which may be peculiar to the solid waste situation in the area (Linda, 2006). AMA, considering its circumstances, adopted the franchising arrangement as the best option for the Metropolis. The choice of a particular form, according to a senior officer, depends on the overall objective set for the project. From the data gathered,

respondents noted that franchising was seen as the best option for the Metropolis considering its peculiar experience with the past. They explained that a previous payment arrangement had caused the Metropolis largely indebted to waste collectors and was overwhelmed with such payments leading to a high default rate. A key respondent explained:

“The Assembly was indebted to the contractors under the previous private sector participation which the Assembly could not pay, even until now” (WMD Officer 2, 2018;

This was corroborated by another officer in the same office of the interviewee who explained further that:

“... The cost factor: the Assembly found the cost factor to be too high to pay in view of the meagre resources (funds) that were channeled into solid waste management by the Assembly” (WMD Officer 3, 2018).

The above position was also corroborated by private waste contractors who were sampled for the study as they shared their relief in the new arrangement. Solid waste contractors unanimously were in favour of this arrangement because it relieved them of the burden of delayed payments that was experienced under the previous agreement with the Assembly.

One of the contractors said that:

“The polluter pays principle which we are practicing now was preferred to the previous system where the Assembly was paying us. Under this model, we had the assurance that at the end of the day, we would be paid by the beneficiaries,

knowing the implications of uncollected solid wastes from their homes. We can now plan to go for loans with our zones of operation as security of tenure” (PSC Officer 1, 2018).

The above assertion summed up the joy with which the contractors embraced the polluter pays system. Once the beneficiaries were paying for their generated wastes, they were expected to be accountable and circumspect in their solid waste generation and disposal habits. According to the contractors, this system had a number of benefits embodied in its implementation including regular stream of income to the contractors (Arbulu et al., 2016), ability to plan ahead (Iossa et al., 2013), acquiring needed machinery, employing skilled personnel to work with and above all, the privilege of going for loans with security of payment. One enthusiastic private waste contractor explained:

“Mostly, our relief comes from the fact that we are able to pay and service loans whilst at the same time motivate our staff and settle most of our bills. All these resonated in efficient level of performance by us, the contractors” (PSC Officer 5, 2018).

The Assembly saw franchising as the antidote to the quest to achieving efficiency and cost reduction whilst at the same time expand the space for managing solid wastes in the face of a growing population. This was informed by the successes achieved in Brazil, Chile and France (IBRD et al., 2014). The arrangement recognized the onerous contribution of the third party or partner (beneficiary) who had been tasked with the payment for the services rendered by the solid waste contractors. Franchising was

therefore seen as the best practice to improve the efficiency of solid waste collection efforts in the Metropolis because at the same time, the system would help improve the finances of contractors (Doole & Lowe, 2000). By this, the Assembly frees itself of any financial obligation towards the contractors (WMD Officer 1, 2018).

Another officer contributing said the Assembly was able to wean itself of any financial obligations towards contractors. He claimed that:

“This system of franchising, borrowed from Marketing, has relieved the Assembly of incurring further debts to the contractors because this time round, it is the householders who pay them for the services rendered to them” (WMD Officer 2, 2018).

The weaning enabled the Assembly to galvanize its energies towards mobilizing resources to strengthen existing institutions and at the same time, build the capacity of the workforce. They also intensified their supervisory and monitoring activities of the contractors as well as households, making sure they register and prepare recalcitrant ones for court.

Despite the good intent of the policy framework, there are however structural constraints which impede its effective enforcement. For example, whilst the PPP policy bestows upon the Assemblies the oversight responsibility for monitoring and supervising private entities engaged in SWM, such roles have not been accorded the requisite resources to do so. In an interview with an officer of the Assembly, he explained that:

“The policy has not been strong enough in the sense that AMA’s oversight responsibility was weakened by inadequate resources to ensure its full implementation. For instance, Chile and Columbia enforced their policies on sanitation by introducing specific laws/policies that spelt out the roles and processes for undertaking PPP projects. The same was done with the adoption of the franchising arrangement where roles and responsibilities were assigned the actors as they perform their duties but resource constraints prevented the implementation of the laudable programmes” (WMD Officer 5, 2018).

Meanwhile, the literature maintains that the success of PPP arrangement in any field depends strongly on the robustness of policy framework that serves as a blue print to the operations of public-private partnerships and solid waste management (Matos-Castano et al., 2014). Having the best of institutions is not just enough but the extent to which resources and other enabling factors combine to make such institutions functional or enforced.

4.2.4 Transparency

A major theme which emerged from the data gathering centres on transparency in the PPP contracting process. This is against a backdrop that for effective operationalization of any PPP arrangement, the process should be carried out in a more transparent manner to enable the public sector contract only private entities that have the requisite credibility, capacity and promises efficiency, effectiveness and economy. That regard, the NPPPP (2011) avers that transparency in the process of contracting starts with the procurement

process where the terms of reference are made known to prospective bidders in a clear and unambiguous manner as enshrined in the PPP policy statement of Ghana. Without such element in the institutional process, PPP will fall short of its expectations. This was explained by a key officer at the Assembly's Waste Management Department:

“Transparency in contracting allows for the selection of the best set of contractors for the job. The WMD of AMA had the task of receiving proposals from prospective bidders who bought the forms on notification in the national dailies, the Ghanaian Times and Daily Graphic” (WMD Officer 1, 2018).

This was given support by another officer from the Planning department who explained that:

“To ensure transparency, the bidders were invited to witness the process of opening the bids, discuss them (bids) and select the most successful ones based on the agreed criteria. The policy requirements include track record of efficient service delivery, financial plan and strength, the number of trucks possessed and staff strength” (WMD Officer 3, 2018).

However, AMA used two criteria to select successful bidders. The first group selection was based on the track record of contractors over the years whilst the second group is made up of those applying for the first time and possessing the requisite resources. An officer explains that:

“Two systems of selection were used by AMA. There was a selective tendering for those who were already in the system and an open tendering for new

contractors. In this instance, if you were already in the system and doing very well, you were considered based on that merit. You would be picked automatically. New contractors who want to be brought on board had to go through the process of selection ... as prescribed by the procurement process and the conditions set by the Metropolitan Assembly” (WMD Officer 4, 2018).

The approach adopted by AMA leaves much room for discretion and could easily breed corruption as collusion between existing private solid waste contractors and city authorities may occur. The first criteria could also easily breed complacency and collusive tendencies.

4.2.5 Procurement requirements

The process of selection is done by a select committee for the initial pre-qualification of prospective bidders based on their financial and technical abilities. As has been hinted above, to be eligible as a prospective private partner, a contractor has to demonstrate some level of competence, technical prowess and resourcefulness to qualify for consideration. This point was put forward by a key officer at AMA who explained that:

“The prospective entity should demonstrate a minimum net worth and financial strength to procure equipment, pay salaries of staff and settle other bills as well as the provision of logistics for their efficient operations” (WMD Officer 2, 2018).

He continued further that:

“Managing solid waste in the Metropolitan area requires heavy capital outlay because the equipment needed is heavy-duty and expensive to purchase and maintain. There is therefore the need for the solid waste companies to have a resilient financial plan as a requirement for the award of the contract” (WMD Officer 2, 2018).

Since solid waste management is not just about collecting and disposal of waste but involve other key management and technical issues, in most cases, the giant companies stand tall. An officer pointed out that:

“The company with the requisite capital outlay saw the opportunity and took advantage to increase their wealth ... The contractors were able to procure the minimum number of trucks and logistics needed to succeed in this solid waste business” (WMD Officer 1, 2018).

The selection process began with short listing of successful bidders who tendered in their bids for consideration. Bidders demonstrated commercial viability as well as their technical competence. An officer explained that AMA’s selection criteria are based on commercial viability and technical providence of the private company. He explained that:

“Our criteria typically entails a 30% demonstration of commercial viability with a 70% competency (technical) which demonstrates the contractors’ ability to deliver, equipment possession and operational methodology” (WMD Officer 2, 2018).

The position of the officials AMA was affirmed by private waste contractors who indicated that the selection process has been fair. For instance, one waste management company, Stanley Owusu Wastes posits:

“Look at our track record. We were the first private sector company to venture into solid waste management in the country; started as far back as 1975. We have the expertise, the trucks and the skilled personnel to work with. Above all, we are very organized. How can we influence the system when we have all these history behind us?” (PSC Officer 4, 2018)

Another waste management company whose presence is felt all over the country and even in the international arena, Zoomlion, corroborated this claim. Fuming with anger, the officer said that:

“Even though we entered the fray in 2006, we have gone very far in the management of solid wastes in Ghana. When you want the largest and best solid waste company in the country, we do not have any size: we have the financial clout, the skilled and educated personnel, the sophisticated equipment, the state - of - the art technology, the advanced methodology, name them. We were the first to change the face of solid waste management in the Metropolis by employing highly skilled and educated employees in the sector. We have the graduates: PhD and Masters Holders, among others, all working with us. What again can we not do? We cannot beg for jobs, we have grown beyond that” (PSP Officer 5, 2018).

This criterion is also in line with the UN recommended framework for the selection of successful bidders which are based on commercial and technical grounds and viabilities (IBRD et al., 2014). The pronouncement by the key respondent corroborates a similar empirical observation by Oduro-Kwarteng & van Dijk (2013) regarding the selection of successful bidders.

The final decision to select was carried out by a Search Committee of the Assembly which sat on the applications received to choose contractors with the best expression of interest in order to contract them. An officer had this to say:

“We have a strong team which sits on the Search/Selection Committee who select applications with the best Expression of Interest. We inspected their facilities and when we are satisfied, we picked those we wanted to work with. They were given terms of reference which are mostly enshrined in the Key Performance Index (KPI) which guide them (selected contractors) in the performance of their duties. A service map was then made available to them to direct their movements within their assigned jurisdictions. The map assists in reducing territorial encroachments and conflicts” (WMD Officer 3, 2018).

However, there were other private waste collectors who thought the system has not necessarily been fair and that they had been victims of abuse (of office) or unfair treatment by Metropolitan officials. Two of the contractors alluded to the fact that there were underhand dealings in the selection process as well as the allocation of lucrative communities to “favourite contractors”. The two strongly believed that there were

occasions where affluent and prosperous zones were “snatched” and re-allocated to cronies. The two claimed to be victims of such unfair dealings and described how they were relocated to second and third class residential zones. One of the contractors narrated bitterly his ordeal:

“I was re-located from a first class zone (Osu/Nyaniba Estates) to a third class zone (Akweteman/Abeka-Lapaz). I had to reduce the fees at the new zone because the residents told me they could not pay the approved charges for the reason that they were not financially sound. This affected the finances of my company because at Osu, we were enjoying good rates (GH¢100) and regular payments by the residents” (PSC Officer 1, 2018).

This concern was shared by another officer who quipped:

“AMA told us that they were re-zoning so they took us from our current zone to another zone. I had to move out to the new place painfully. This was unfair. I cannot tell whether money changed hands (for the change) but what transpired was not the best. Maybe something like favouritism, politics or some special consideration took place. This practice is not good for the Metropolis because it breeds inefficiency and abuse of authority” (PSC Officer 3, 2018).

The above experience was corroborated by another contractor who concluded that such acts have been the bane of solid waste management in the Metropolis. An officer who was a contractor said that:

“Our inability to account properly our stewardship to the other stakeholders was due to some of these overlaps” (PSC Officer 5, 2018).

As indicated by PSC Officer 5, unfair advantages perpetuated by AMA officials breed infractions whose repercussions are difficult to manage. Such practices have affected the fabric of solid waste management in the city in the sense that they corrupted “performance discipline, encouraged favouritism and abuse of privilege”. The net effect was what has happened in the Metropolis with inefficiencies in collection abounding, especially in the third class residential zones. Management should therefore eschew unfair tendencies, if any, in order to instill discipline among the contractors so that they would be effective in their solid waste management practices in the Metropolis.

4.2.6 Administrative mechanism and supportive organizational structure

From the study, it emerged that administrative mechanisms and organizational structure of the AMA facilitated the PPP process. As defined in the theoretical overview, institutions entail formal and informal arrangements, structures and provisions which then become tools for PPP in SWM. After all, enforcement of the KPI and structural guidelines needs to be carried out by the Accra Metropolitan Assembly and without administrative structures for such purposes the process will suffer huge implementation challenges. From the data gathered, it was noted that the Assembly had established institutions that performed key functions for the successful implementation of decisions on managing solid waste. A degree of success or otherwise of the arrangements hinges on established institutions that have oversight responsibility over the various segments of the solid waste sector in the Metropolis. The AMA therefore has embarked on a strong

decentralization drive to encourage responsibility and accountability to the householders in the solid waste sector. A key respondent explained that:

“The Assembly’s devolution structures included the solid waste section, liquid waste department, public health unit, the legal department, the accounts section and the sub-metros, among others. The Metropolis has a special court which deals with issues of sanitation offences” (WMD Officer 2, 2018).

The point is that the public partner is supposed to provide an enabling and supportive climate for private actors to operate. Therefore, by having these structures in place, private entities execute their solid waste management with confidence that defaulters or offenders will be dealt with and prosecuted.

4.2.6.1 Establishment of Sanitation Courts

The key informant from the planning department further intimated that:

“So far, five of such courts have been established in greater Accra area and are adjudicating on solid waste issues. These courts are located in Abeka Lapaz, Labadi, Ashiedu Keteke, Accra Central and Nungua” (WMD Officer 2, 2018).

Continuing, another officer said that:

“Thus, the decentralization drive was aimed at deepening participation in all sectors in solid waste management and also to offer good services to the residents of Accra and her environs” (WMD Officer 3, 2018).

The effective functioning of these decentralized departments was to resonate in good solid waste practices in the Metropolis. For example, the Public Health Unit has been responsible for the enforcement of regulations and directives as well as by-laws of the Assembly. This was argued rightly by an officer at the WMD who said:

“For example, we have the PHU which carries out the “zoomlion works” (do the dirty jobs) of and for the Metropolitan Assembly. Their roles include enforcement of registration of households, environmental health campaigns, arresting both offending householders and tricycle operators as well as policing contractors to “ensure that they do the right thing” (WMD Officer 5, 2018).

The argument so far brings to bear the fact that the AMA has institutional and structural arrangements which together facilitate the operationalization of public-private partnerships in solid waste management in the Metropolis. The Assembly has a team of inspectors who go round to check on the use of the environment, physical space and cleansing activities in the Metropolis. The reports they write to the Waste Department become significant inputs and information to the overall decision making process of the Assembly at solid waste committee meetings. These same administrative mechanisms and organizational structures help in maintaining standards required of solid waste collectors and the people in general. A key informant at the Public Health Unit averred:

“We issue summons to offending householders and tricycle operators who deposit indiscriminately and prepare them for court in the process. They are mostly fined” (WMD Officer 4, 2018).

The PHU helps in public education, educating the citizenry on the need to keep a healthy environment and appropriate waste disposal mechanisms for households. An officer explained further that:

“They also help to educate the residents on healthy living standards, disease prevention and sensitization on disease control and prevention including the outbreak of epidemics” (WMD Officer 5, 2018).

4.2.6.2 The Legal Department

The Legal Department (LD) of AMA has been a strong backbone to the Assembly as far as the enactment of by-laws and SWM compliance are concerned. PPP arrangements entail varying legal clauses and specifications involving responsibilities on each partner including the householders (clients). The LD ensures that formal private actors or solid waste collectors who flout any provisions or go contrary to AMA by-laws are processed for court and sanctioned accordingly. Although the Waste Department currently has few qualified lawyers working under strenuous conditions, they nonetheless are instrumental in the solid waste management process. A respondent at the WMD explained the workings of the LD:

“They are noted for making and upholding by-laws of the Assembly. The Legal Department has initiated moves to amend some of the by-laws which had outlived their usefulness, including imposing paltry fines on offending householders and tricyclers who frown on solid waste issues in the Metropolis. These fines were not deterrent enough to prevent an occurrence the next time. For instance, a

discretionary fee of GHC200 is charged as per the by-law enshrined in the Local Government Bulletin of 2018” (WMD Officer 1, 2018).

It was explained by an officer at the Legal unit of the WMD that:

“Some areas the Legal Department is working on include indiscriminate disposal of solid wastes, operations of tricyclers and enforcements of by-laws and imposition of fines” (WMD Officer 3, 2018).

This said officer was full of hope and assurance that the amendments would lead to a strong AMA which is on top of solid waste management in the Metropolis. He explained that most of the laws are obsolete and not punitive enough to instill the much desired fear into people and groups who openly violate these regulations.

“For instance, the 12th September (2017) and 2nd December (2017) editions of Daily Guide Newspaper reported that three (3) and ten (10) tricyclers respectively were sentenced to fines of GHC360 each for indiscriminate disposal of solid wastes in places around Makola, Railway area and Ghana Commercial Bank all located at Okaishie. This was in accordance with the Public Health Act 2012 (Act 851). These have not been deterrent enough, thus resulting in blatant abuse of the environment by the offenders” (WMD Officer 3, 2018).

From pieces of information garnered from the Legal Department, it is quite clear that the new by-laws would address issues of enforcement of household registration, indiscriminate disposal of solid wastes, tricycle activities and their movements and

supervision and monitoring of the contractors' performance to ensure efficiency and accountability. It is hoped that this would help the empowerment of Metropolitan authorities to be efficient in their enforcement of regulations as far as the PPP in SWM is concerned.

The observation finds place in an argument raised by Wilson (2007) that developing countries have gamut of factors that have weakened their institutions, thereby, rendering their solid waste systems ineffective. Ghana and for that matter AMA's structures were found to be weak: had low financial support, experienced inadequate resources from Metropolitan tax revenues, had insufficient user fees and mismanaged funds culminating in under-funding of solid waste activities in the Metropolis. The observation is no different from an argument adduced by Zurbrugg (2003) on the solid waste management situation of developing countries. Against this backdrop, Coffey & Coad (2010) insist that the polluter pays strategy is incompatible with practices in many developing countries including Ghana because of enforcement constrictions. In the end, some households which refuse to pay service charges dump their solid wastes criminally at unauthorized places with little regard to the by-laws of the land and environmental consequences.

To overcome this, the three actors must come together to fashion out a strategy to enforce the implementation of the polluter pays agenda. Chong et al. (2016) stress, however, that enforcement can be achieved if consensus was built with the local people through participatory decision making. Chong et al. (2016) observed that by strengthening

governance arrangements for solid waste management at the local level, consensus could be reached for effective implementation of policies which may be contrary to the views expressed by Coffey & Coad (2010). For instance, in South Korea, there are attempts to enforce the implementation of projects under PPP through the promulgation of a PPP Act and Enforcement to protect her partnership arrangements (Jay-Hyung & Seung-Yeon, 2013). Ghana could also take a cue from these two examples by encouraging ownership through participation in decision making and supporting implementation with robust legislations, with an order of compliance to motivate householders' participation in the solid waste management drive.

Deducing from the above, AMA therefore requires the strengthening of its institutions by infusing capital to support their operations or activities. The low capacities of staff should also be addressed so that they can stand the test of time to drive the solid waste management efforts in the Metropolis. It is hoped that as the new by-laws becomes effective and enforced (Coffey & Coad, 2010), AMA would witness improvements in the state of affairs of its solid waste sector in the Metropolis.

4.2.7 Governance structure

Good governance enables an equitable, effective and efficient solid wastes culture in developing countries (Hardoy et al, 2001). Governance entails the interaction and interplay of different set of actors who are given equitable opportunities in a transparent and accountable manner. AMA therefore ensures that its institutional arrangements as well as administrative structures are positioned in such a way that scarce resources are

shared proportionally to the decentralized institutions handling solid wastes in the Metropolis. More importantly, attention is paid to good governance in the Metropolis by opening up the space for the participation and collaboration of relevant actors (decentralized agencies) to contribute to the clearing of solid wastes from homes in the Metropolis. The key governance principles observed from the field study are discussed under the following themes: *participation, accountability, efficiency, fairness and transparency*.

4.2.7.1 Participation

From the discussions so far, it has emerged that AMA opens up the PPP in SWM space for participation of either new or already existing solid waste companies. During the interview process, an official at the WMD explained that:

“Participation is a powerful governance best practice through the involvement of key actors in decision making ...the Assembly informs the partners on some decisions to be taken. These include fixing of fees where stakeholders are invited to witness the process, meetings with Environmental Services Providers Association (ESPA) where all the stakeholders in the solid waste industry meet to take key decisions with most present” (WMD Officer 3, 2018).

The notion and relevance of popular participation is advanced by Chong et al. (2016) who explained that by involving stakeholders in discussions bordering on the well-being of actors, they become motivated to participate fully in the implementation of major decisions in solid waste management. It was established from the study, however, that

other stakeholders of the arrangement were usually not consulted by the Assembly when key decisions were being taken. The level of participation was deemed to be low and this culture encouraged apathetic attitudes towards the implementation of such decisions. A key informant of the Assembly said in terms of decision making, they even were not consulted. The officer had this to say,

“The Assembly did not involve the other stakeholders in major decisions that border on the wellbeing of the actors. A typical example was when the initial decision was to be taken about franchising arrangement. Again, the other stakeholders were not involved in the decision on fee fixing, allocation of zones and contractors and a host of others. The Assembly must engage the key actors in advocacy so that decisions arrived at could be implemented with ease by all” (WMD Officer 1, 2018).

This point was given support by another officer who complained that:

“The contractors were also crying that their contributions were not considered by the Assembly when taking major decisions ... the lack of consultation was responsible for the rejection of the fee fixed by the Assembly and the subsequent thriving of tricycling activities in the Metropolis. This was because some of the householders saw the charges as too high, hence, looked for alternative means for their solid waste needs” (WMD Officer 2, 2018).

The foregoing sentiments were greatly reported by private contractors who bemoaned their non-involvement in major decisions (on solid waste) by the Assembly. A contractor,

elaborating, whined bitterly about their non-involvement in the fixing of fees by the Assembly. He put it this way:

“Last year, AMA came out with a fee-fixing resolution without our involvement. Even though the fees were pegged for the first class and second class residential areas as at GHC110 and GHC70 by the Metropolitan Assembly (LGB, 2018), the contractors, looking at the situation on the ground charged rather, GHC100 and GHC60 respectively. The third class residence attracted GHC30 (LGB, 2018). At the end of the day, it was only the first class residents who were able to pay their levied charges because they had the ability to pay. But, a sizeable number of residents in the second and third class zones still clamoured for a reduction in their charges because they complained that they could not meet the high economic measures they are confronted with. Instead of collecting GHC60 at a place like Abeka Lapaz, a second class zone, we had to charge GHC30 because they said they could not pay the approved fees” (PSC Officer 1, 2018).

The failure to incorporate the contractors in such advocacy had serious implications on implementation, funds mobilization and ownership of the zone because latitudes were given to the informal sector to cash in by competing on lower fees (charged) with the assigned contractors (Chong et al., 2016).

Relating these three narratives here to a previous one above, one observes that the notion of participation is narrow and mostly limited to merely communicating decisions already taken but not necessarily giving other actors or stakeholders the opportunity to fully

participate, which ultimately, affected compliance and effective enforcement. The finding reflects Verma et al.'s (2016) assertion that without stakeholder involvement in the setting up of regulations, their (stakeholders) ability to meet such standards and ownership of the arrangements becomes suspect. The lack of consultations brought a wedge between the AMA officials and the other stakeholders, especially the householders resulting in a loose form of agreement among them. The end result was the blatant flouting of the rules of engagement, hence, the inefficiencies experienced. The “*yentua*” (to wit, we won't pay) syndrome of the third class and to some extent the second class zones were resultant effects of lack of involvement in fee fixing decisions (Sujauddin et al., 2008).

4.2.7.2 Accountability

Another governance issue relating to PPP in SWM in the Metropolis has been accountability. By accountability, the actors are to become “each other's keeper” in the solid waste value chain. The three key actors (the Assembly, private actors and householders) are to serve as checks on one another for effective solid waste operations. However, this mutual ‘checking up on each other’ have not been effective. This was explained by a principal officer:

“...For instance, the public health department has not been effective in policing the contractors because of financial and logistical constraints; contractors were confronted with financial challenges because the beneficiaries (householders) were reluctant to pay them(contractors) because they have failed to collect their solid wastes. Again, high charges and lack of participation in decision making has

a great influence over their attitude towards payment of service charges” (WMD Officer 3, 2018).

The above discussion was effectively summarized by a key respondent who described the outcome of poor accountability of these actors on solid waste management in the Metropolis this way:

“ ... because of this what we are witnessing is, solid wastes piled up in front of houses for weeks awaiting to be picked; households abrogating dealings with assigned contractors; residents’ failure to settle bills, indiscriminate solid waste disposals, tricyclers competing with contractors in their own zones, to mention, but a few” (WMD Officer 1, 2018).

The intractable solid waste situation therefore is attributed to ineffective accountability exhibited by these actors. If the Assembly were to play its role in holding formal private actors to account well for their stewardship, there could have been improvements in the solid waste situation in the Metropolis. Again, if residents in the zones were to be registered and allow their solid wastes to be picked for them so that they pay their charges religiously, the contractors would have been happier. This would have boosted the contractors’ morale to improve on their efficiencies so that the remaining tonnage of 600 left unattended to would have been picked by them (contractors).

4.2.7.3 Efficiency and effectiveness

Efficiency and effectiveness refers to the activeness with which stakeholders perform their duties in the Metropolis. Observations made by the study portray a sordid situation in the Metropolis' as far as the management of solid waste by the authorities is concerned. Efficiency levels of the actors seemed to be low as was observed during the study. Stakeholders' mandate towards their constituents was poorly executed, leaving in its trail, unfulfilled and poor solid wastes services. The literature suggests that PPP in SWM management leads to efficiency and effectiveness; it is therefore not surprising when key respondents from the Metropolis attempted to paint a rosy picture of the solid waste situation. One of the officers touted:

“Overall efficiency was judged from the rate at which contractors discharged their duties of picking solid waste from homes of clients ... the contractors did well considering the constraints with which they worked with to improve solid waste collection to 70%” (WMD Officer 2, 2018).

Contrary to the argument above, majority of respondents in the second and third class communities indicated that everything was not rosy after all. For instance, it was observed that the health inspectors who were supposed to visit communities were not up to task. An officer of the WMD used scenarios to explain the state of affairs in the Metropolis instead of being on the ground. An officer complained about the sluggishness with which the Assembly managed solid wastes in the Metropolis. He posited that:

“Even though we are the overlords of solid waste in the Metropolis, we do not have what it takes to do our work effectively. The public health unit pretends to

be supervising and monitoring the activities of the contractors and the households. At the end of it all, the work seems to be done by the assigned contractors. Nothing happens” (WMD Officer 1, 2018).

The statement above was corroborated by one of the principal officers who asserted that:

“We are aware of the situation on the ground which we need to act on but there are human resource inadequacies; there are financial hardships and there are technological constraints, our staff is ill-motivated, staff capacity is low and they lack self-esteem as well. These constrain our efforts, as a consequence, impairing our efficiencies in performing our duties” (WMD Officer 4, 2018).

Therefore, one may not be far from right in thinking that AMA’s inefficiencies were due to a multiplicity of factors which have been observed in the literature (Kaseva & Mbuligwe, 2005; Ngoc & Schnitzer, 2009; Okot-Okumu & Nyenje, 2011; Saidou & Aminou, 2015) that financial hardships, improvised or unreliable data, low motivation and low capacity of managers of solid wastes in the developing world have resulted in poor services rendered in municipalities.

4.2.8 Zoning the Metropolis

To ensure effective coverage of Accra by the solid waste contractors, the Metropolis was demarcated into zones before being handed over to the assigned contractors. Generally, two main conditions influenced the zoning which was the *class category* and the *population dynamics* of the said suburb. This is done for purposes of ensuring orderliness

in SWM processes and to avoid role or jurisdictional conflicts. This was explained by one of the respondents this way:

“The zoning reduced conflict potentials and resolution among contractors because each contractor knew his boundary of operation which they followed logically the zones were also demarcated so that there could be cross-subsidization of client fees to prop up poor urban neighbourhoods” (WMD Officer 3, 2018).

This was corroborated by another official who explained how contractors navigate through their allotments:

“To facilitate coverage, each contractor was given a service map to serve as a blue print and to guide them. Each contractor was given a mixture of the three class categories as a cross-subsidization mechanism it was aimed at reducing unfair accusations leveled against authorities of the Waste Department the zoning was seen as a bold attempt to prevent the threat of encroachment on the contractor’s jurisdiction by others, thus, reducing (municipal) service conflicts in the Metropolis” (WDM Officer 4, 2018).

Still contributing to the relevance of zoning, a key informant added that:

“The benefits included the privilege of visiting every nook and cranny of the serviced area, intensification of collection efforts within the zone which promoted efficiency and effectiveness and healthy competition among the contractors” (WMD Officer 5, 2018).

Irregular zoning and non-involvement of relevant actors in these processes could easily fuel inter-jurisdictional conflict in the waste management process. During the study, one respondent narrated his ordeal:

“For instance, the Assembly wanted to scale down the operations of Liberty Wastes services at Dansoman. Posters of the new or incoming contractor were placed on frontages of households without the knowledge of Liberty and the residents. This nearly resulted in a clash between the two said contractors. Finally, sanity prevailed and the old contractor, Liberty Wastes, was made to continue with their service delivery activities. This was a clear evidence of poor communication or advocacy between the Assembly and the contractor which nearly caused hell to break loose in the zone” (SCR Resident 54, 2018).

From this account, one could observe that poor interactions among stakeholders in some zones affected accountability in solid waste management in the affected areas (Flinders, 2005). The findings above resonate with existing empirical literature on the theme which argues that zoning aims at giving contractors monopoly over the area of operation and to encourage intensive coverage within the zone as well as enhancing efficiency of service delivery to households by contractors who have been allocated such places (Cointreau-Levine & Coad, 2000; Oduro-Kwarteng & van Dijk, 2013). For example, Oduro-Kwarteng & van Dijk’s (2013) study stresses that the zoning concept was evocative of unsurpassed practices in other domains, indicating that such demarcations introduce vigorous competition and effectiveness in solid waste administration in developing countries.

4.3 Conclusion

This study set out to assess the institutional and governance mechanisms underpinning public-private partnerships and solid waste management in the context of Accra Metropolitan Assembly. From the data gathered and discussions made, these derivatives were arrived at the following conclusions. Firstly, the issue of PPP in the Ghanaian context and for that matter AMA is top-down driven or propelled by national policy guideline although such arrangements are locally adapted. AMA adopted the franchising typology of PPP underpinned by the polluter pays principle due to its experience with a previously centralized system which posed colossal financial burden on the Metropolitan Assembly as well as the national administration.

The new arrangement with its financing structure enables recouping of monies directly from clients for municipal services rendered by private solid waste contractors unlike the previous regime where they had to wait on the Assembly for a longer period. Moreover, the institutional framework details some stipulated guidelines that structure how PPPs in SWM are carried out. The (PPP) franchising process is structured by transparency, accountability and fairness which in most cases opt for those private contractors with adequate capital outlay, proven competence and have assortment of waste management equipment. Effective execution of PPP in SWM in the Accra Metropolis is powered by administrative mechanisms and organizational structure supportive of effective solid waste management. These however require adequate resource revamping in order to step up their legally mandated responsibilities.

To ensure orderliness in the execution of their waste collection activities, private waste collectors are allotted to specified zoned jurisdictions to avoid inter-jurisdictional conflict and confusion among households and private contractors. However, issues of power play and poor engagement with relevant stakeholders at times lead to disgruntled feelings among private contractors which do not augur well for effective waste management services. The study recommends for effective participation and involvement of all key stakeholders in major decisions on solid waste management. In other words, the individual householders, private contractors as well as Metropolitan authorities should be the tripartite entity who makes major resolutions such as fee fixing so that the actual implementation becomes relatively easier.

CHAPTER FIVE

ROLES AND RESPONSIBILITIES OF STAKEHOLDERS IN THE PARTNERSHIP ARRANGEMENT

5.1 Introduction

The complex nature of urban solid waste management calls for an integrated approach to solving the challenge through the harnessing of the strengths of various actors of society. According to Klundert & Anschütz (2001), the idea of integrated solid waste management (ISWM) lays emphasis on the role of relevant stakeholders and two other factors, *waste system elements and sustainability elements*. The relevance of stakeholders in integrated approach to SWM has been advanced in the literature (Klundert & Anschütz, 1999; Anschütz et al., 2004). The idea of stakeholders has been defined by Brugha & Varvasovszky (2000:341) to mean those “actors who have an interest in the issue under consideration, who is affected by the issue or who have or could have an active or passive influence on the decision-making and implementation processes”.

As has been mentioned in previous chapters, the growing sophistication in waste generation caused by rapid urbanization and increasing industrialization meant local governments alone cannot effectively handle its (solid wastes) management. Against that backdrop, Cobbinah et al. (2017:19) insisted that “the responsibility of solid waste management cannot be regarded as a homogenous process or act but rather, as a complex process of negotiations between different interest groups seeking to influence the process to achieve their agendas”. This has led to an era of public-private partnerships in solid

waste management which involves the interplay of key stakeholders who cumulatively help in managing solid waste. The main stakeholders in PPP in SWM include city authorities (public actors), private waste contractors (private actors) and more importantly, the people (residents or households). Each of these actors has their peculiar roles and responsibilities and their complex interaction is crucial for effective urban solid waste management (Caniato et al., 2014). The literature provides evidence that coordination, synergy and resource pooling among different stakeholder groups help profoundly to engender viable solid waste management system, including, changes in behaviour and sharing of financial responsibilities (Hoorweg & Bhada-Tata, 2012).

Conversely, the neglect of certain activities or groups will result in reduced sustainability of the system (Klundert & Anschütz, 2001). Promoting effective synergy, coordination and active role in the PPP in SWM process requires some calculated actions on the part of city authorities and private waste contractors in order to court householders. Bryson et al. (2002:571) maintain that “stakeholder support is needed to create and sustain winning coalitions and to ensure the long term viability of organizations, policies, plans, and programs. Key stakeholders must be satisfied, at least minimally, or public policies, institutions, communities, or even countries will fail”. The effective execution of roles and responsibilities is crucial for the overall success of public-private partnership in solid waste management in developing countries. Scholars including Yeboah-Assiamah (2015); Yeboah-Assiamah et al., (2017) and Lartey et al. (2018) have pointed out that it is not only about entering into public-private partnerships, but also the degree to which all stakeholders perform their critical roles and responsibilities. According to these

authorities, they are very significant. Although the residents or households remain building blocks in overall urban solid waste administration (Ahmed & Ali, 2006), their crucial roles and participation in relevant decision points are mostly relegated to the background (Amoah & Kosoe, 2014; Cobbinah et al., 2015; Cobbinah & Darkwah, 2017).

The main objective of this chapter, thus, is to examine the roles and responsibilities of the tripartite stakeholders in the public-private partnership for solid waste management in the Accra Metropolitan area. Beyond this introduction, the second section provides a brief theoretical and conceptual overview and framework for the study; section three looks at the stakeholders in the waste management stream whilst sections four and five present discussions and conclusions respectively.

5.2 Theoretical and conceptual frameworks

The chapter is underpinned by both theoretical and conceptual frameworks. The two perspectives have been discussed below.

5.2.1 Theoretical framework (Stakeholder Analysis)

Stakeholder Analysis (SA) is used to denote those aspects of a social and natural phenomenon that are influenced by a process, decision or action. In other words, it identifies individuals, groups and organizations that are influenced by or could influence those parts of the phenomenon. As a matter of fact, it is important to know the spheres of influence that stakeholders bring on board in the management of solid waste in the

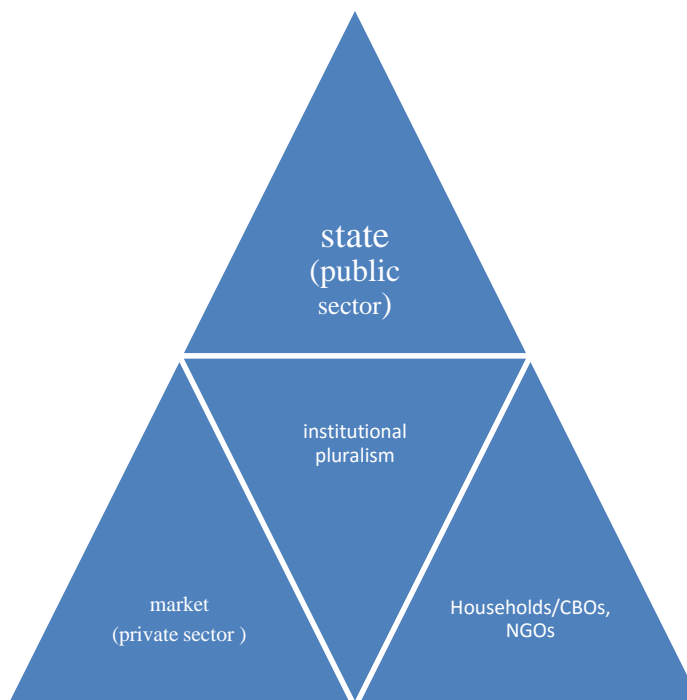
Metropolis. There is therefore the need to prioritize this sphere of influence. According to Grimble (1998), stakeholder analysis involves a methodology for gaining an understanding of a system and assessing the impact of changes to that system, by means of identifying the key stakeholders and assessing their respective interests and influence. In line with that definition, the current study adopts a working definition of stakeholder analysis to mean the process of identifying relevant stakeholders in solid waste management and private-private partnership, prioritizing and managing them appropriately.

Widely acknowledged that multiple-actor approach and methods are essentially required to address solid waste management issues, stakeholder analysis remains a prominent framework for better understanding of the interests of the relevant actors in urban solid waste management (Lienert et al., 2013). Against that backdrop, Prell et al. (2009) explains that stakeholder analysis can be used to understand waste management systems by delineating those aspects of the system under study, by identifying who has a stake in those areas of the system, and to prioritize which stakeholders are to be involved in the decisions as well as their roles and responsibilities thereof. The approach has been employed in various public-private partnerships in solid waste management studies. For example, Ibrahim & Mohamed (2016) adopted stakeholder analysis to analyze urban waste in Egypt; Andreasen & Sovacool (2014) adopted the framework to identify critical actors who could influence solid waste situation in a study in Denmark context.

5.2.2 Conceptual framework (The Actors)

The framework below (Figure 5.1) illustrates the tripartite nature of stakeholders in the solid waste management process.

Figure 5.1: Institutional pluralism and stakeholders



Source: Tukahirwa et al. (2013)

5.2.2.1 Institutional pluralism

Scholars have argued on the need to adopt measures that enable goods and services to be effectively provided within an environment which is more accommodating and opened for all relevant actors. The idea of institutional pluralism conceptualizes the need to open up the space for the provision of public goods and services: through the government, through the market, through civil society or through any combination or partnerships of

these sectors (Glasbergen et al., 2007). There has been argument for a need to adopt institutional reforms that empower the non-state sector so that the government should delegate public service provisions to private actors and non-governmental organizations in the developing world (Cohen & Peterson, 1999). The literature provides that institutional pluralism on public goods provisioning engenders effectiveness and enhances legitimacy of the state. Scholars contend that by ceding functions to non-state actors, the public sector is able to focus on other core responsibilities. Above all, the introduction of other actors shores up competition and effectiveness in municipal service provisions (Esman & Uphoff, 1984; Esman, 1991).

Figure 5.1 provides a ‘tripartite’ approach to enhancing solid waste management in the developing world. The framework has three main stakeholders: the public sector, private sector and non-governmental organizations/community based organizations. At the apex of the framework is the public sector or state which has traditionally been performing solid waste management roles. Owing to changing complexities, there has been a need to break this traditional monopoly to allow the institutions to be flexible and to allow for different or array of ‘plural actors’ in order to boost efficiency and competition in the system. In most cases, the role of the public sector had appeared quite centralized where contracts may be signed at the national level and imposed on local governments for implementation. At the bottom left of Figure 5.1 is ‘market’ or private sector which has become very popular module because of the economic and trade liberalization policies (Chaturvedi et al., 2015). It is often believed and proposed that private sector participation in providing municipal services could be the best possible way to solve the

current waste problems in developing countries and in particular public-private partnership is seen as more potent (UNESCAP, 2011).

At the bottom right is the role played by non-governmental organizations or community based organizations. There is a wide body of literature on the role of NGOs and CBOs in developing countries focusing on a variety of sectors and activities including environmental services (Hulme & Edwards, 1997; Mitlin, 2001, Barr et al., 2005). By private sector, there is a need to recognize the role of the informal sector in SWM in developing countries. Wilson et al. (2006) argue that though the informal private sector also plays a role in SWM, they appear to be at the blind side of decision makers. They are mostly under duress and at times, chased by city authorities. The sector's growth is mostly driven by the forces of demand and socio-economic factors (Ahmed & Ali 2004; Wilson et al., 2006) and increasing networks between formal firms with their informal actors (Oteng-Ababio, 2011). Even as the dynamism of the private sector is very imperative, the public sector's role as the supervisor is required and equally significant. Nevertheless, the understanding, collaboration and the desire of householders to pay for municipal services are more often than not deserted. Any definition of PPP or any PPP arrangement that neglects the effect or the role of the 'third party'- householders or the community- will at best be ineffective and at worst is more likely to fail.

5.3 AMA stakeholders perspective

A first objective was to assess the key stakeholders in the solid waste management in the Accra Metropolis. In other words, the study was set to find out the key players involved

in effective solid waste management along the integrated solid waste management (ISWM) value chain. The main stakeholders in the urban solid waste management were summed up by a key respondent:

“The key stakeholders in the Metropolis include the government, the Ministry of Local Government and Rural Development (MLGRD), the Ministry of Sanitation and Water Resources (MSWR), informal (private) sector collectors, householders, the formal (private) sector collectors, the association of landlords and Assembly members” (WDM Officer 1, 2018).

The responses from participants indicated that SWM in AMA involves a concerted effort between key stakeholders. This was validated through (survey) questionnaires administered to householders. In the household survey of one hundred (100) individuals, residents demonstrated their knowledge of key stakeholders in the urban solid waste management process. This has been illustrated in Table 5.1 below.

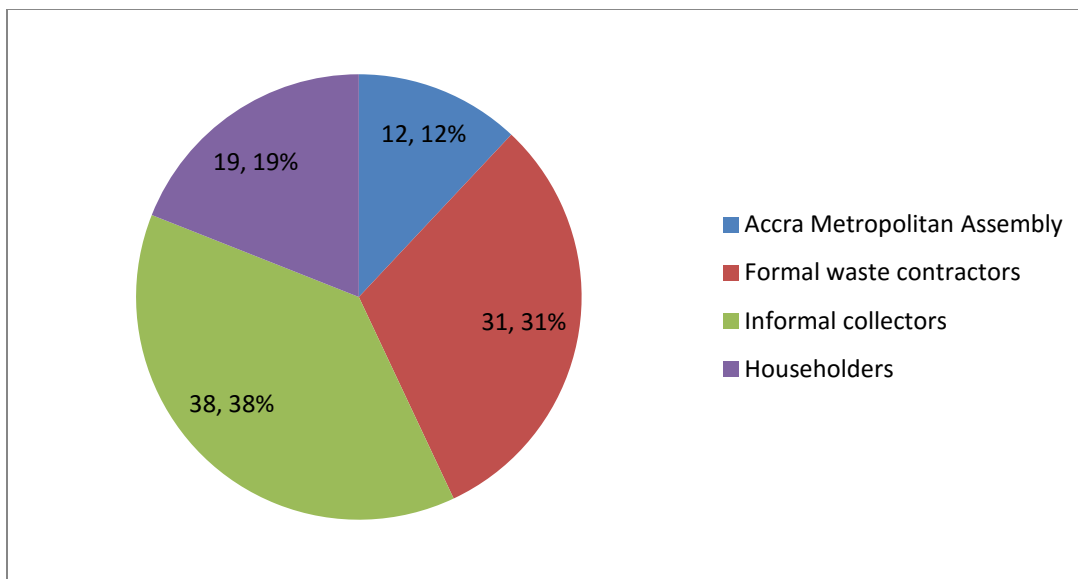
Table 5.1: Householders' understanding of stakeholders

Stakeholders of Solid Waste	Respondents	Percentage (%)	Degrees
Accra Metropolitan Assembly	12	12	43.2
Formal waste contractors	31	31	111.6
Informal collectors	38	38	136.8
Householders	19	19	68.4
Total	100	100	100

Source: Survey Data (2018)

Table 5.1 illustrates residents' understanding and encounter with the major stakeholders in the urban solid waste mix of Accra. The above information has been used to plot a pie chart below (Fig. 1).

Fig. 5.2 Householders perspective on stakeholdership



Source: Survey Data (2018)

The Table (5.1) and the Pie Chart (Fig. 5.2) reveals that householders have a fair understanding of the integrated nature of solid waste management in the Accra Metropolis. One of the respondents explained that:

“These stakeholders together contribute to the cleaning up of homes of residents in order to avoid the spread of health-related catastrophes and the provision of a serene environment that attract investment and wealth for the people and the nation” (FCR Resident 6, 2018).

From the data gathered, it was observed that stakeholders could be classified into three main categories: *public agencies*; *private contractors* (formal and informal) and *householders or residents*. From such initial information, the study sought to examine the role played by each of the three tripartite entities in the urban solid waste management process. The apparent involvement of Metropolitan authorities and private sector participation in solid waste management has been a ritual (Sukholthaman et al., 2017; Yeboah-Assiamah et al., 2017). Scholars such as Ahmed & Ali (2004) have advanced for the active engagement of householders in order to maximize the effectiveness of PPP in the solid waste administration.

5.3.1 The role of AMA

The AMA is a public agency which comes to mind as far as public agency in SWM in the Metropolis is concerned. A most prominent public agency responsible for urban solid waste management is the Accra Metropolitan Assembly (AMA) and its units or decentralized agencies. The study revealed that this stakeholder plays significant roles in the PPP arrangement in managing solid waste in the Metropolis. The Accra Metropolitan Assembly perform a number of roles in the discharge of her duties in ensuring that householders received the best solid waste management service in the Metropolis.

5.3.1.1 Mandating contractors and subsequent zoning

A major responsibility of AMA is its crucial role played in granting franchise to deserving and resourceful stakeholders or entities to maintain appreciable level of managing solid waste in the Metropolis. In other words, AMA authorizes private

contractors to participate in the solid waste management process. This was explained by a respondent at the WMD of AMA who narrated that:

“AMA solicits bids, processes them and gives mandate to successful contractors to participate in the solid waste management services by collecting solid wastes from households on behalf of the Assembly” (WMD Officer 3, 2018).

As overlords of solid wastes in the Metropolis, AMA determines the criteria and reserves the final authority for selecting successful bidders to be given contracts or allotted territories to operate within the Metropolis. However, in doing so, the Metropolitan authorities follow the Procurement Law of Ghana which provides for healthy competition and transparency in selecting successful bidders. This was explained by one of the officers in this way:

“We advertise in the dailies to receive bids from the business community who are interested in investing in the solid waste sector. The Assembly then selects qualified bidders and gives them contracts and service zones to operate. In addition, service maps are given to them to consolidate their hold on the assigned territory” (WMD Officer 2, 2018).

The assignment of territories with maps is aimed at granting the contractors monopoly over the allocated jurisdictions whilst at the same time, reducing conflicts with fellow contractors. The granting of zones enable the contractors to comb the entire corners of their jurisdiction thereby leaving no place unattended to as far as the householders’ solid

wastes collections are concerned. They therefore do both intensive and extensive coverage of the mapped areas.

5.3.1.2 Registering householders

The study also found out that the AMA has a key role to play in facilitating registration of householders with the tacit support from the contractors. This, the Metropolitan Assembly does by issuing out introductory letters to the contractors to enable them register households in their zones in order to pick their solid wastes for onward transportation to landfill sites. This was explained by an officer this way:

“The Introductory Letters given to householders is a testimony that the Assembly has given her rights (franchise) to contractors to run solid waste services within the zones at a fee from the beneficiary companies” (WMD Officer 2, 2018).

The registration process is assisted by a specialized agency of AMA, the Public Health Unit (PHU) which aids the private contractors in the process. This was explained by one of the respondents at the unit as:

“Our outfit assists in household registration of beneficiaries. We at the public health unit assist AMA to keep the city clean through “saman saman” (sanitary inspection) activities by our officials (WMD Officer, 2018).

5.3.1.3 Monitoring and supervision

More importantly, the AMA and its public agencies are responsible for monitoring and supervision which is deemed crucial in achieving effective solid waste management from

the partnership agreement. The study gathered that AMA has put in place units and measures to facilitate the monitoring and supervision of private contractors assigned to specific zones. One of the respondents explained that:

“The Public Health Unit monitors and supervises the contractors on periodic basis. With this, we also seek the interest of residents by making sure the collection of solid waste in households was done on schedule. In a nutshell, the work of the health inspectorate begins as soon as a contractor is assigned to a zone” (WMD Officer 5, 2018).

Providing support to the narrative above, one of the officers said that:

“Effective monitoring and supervision ... called the soft aspect of waste management has been strengthened through decentralization” (WMD Officer 2, 2018).

The decentralized outfits are the PHU, the Sub-Metros and the District Cleansing Officers (DCOs), among others. For example, the PHU is charged with the provision of credible data for the validation of solid waste bins supplied, the number of vehicles the contractors possess as well as visiting homes to ascertain whether beneficiaries has registered with the Assembly (and for that matter the contractors) or not. Additionally, the Assembly has put in place technical teams with transport services at their disposal to move round the Sub-Metros to facilitate monitoring and supervision of both contractors and households (WMD Officer 4, 2018). Through these activities, reports are generated which are forwarded to the Metropolitan Assembly for decision making purposes.

The DCO in the various Sub-Metros complement the efforts of the officers of the Waste Management Department to ensure effective monitoring of the solid waste contractors in the decentralized agencies. The DCOs, seen as “the eye in the operational areas” write reports periodically on the performance of the key actors. The DCOs used the Key Performance Indicators (KPI) as a yardstick in evaluating the performance of the solid waste contractors. They also put in place measures to maintain and uphold sanity in the solid waste system from householders as well. They reprimand contractors who renege on their responsibilities by preparing them to face authorities of AMA or preparing them for court.

Scholars (Domfeh, 2002; Massoud et al., 2003; Anestina et al., 2014) have reiterated the significance of effective monitoring and supervision of the activities of the private sector in managing solid wastes as a prerequisite for efficient and effective service delivery. Yeboah-Assiamah (2015:284) indicated that “the processes before, during and after engagement of the private sector in the service provision are imperative for the efficiency and effectiveness of the process. . . if city authorities after engaging the private sector coil back into their shelves and sit on the fence, it may render privatized services poorly provided”.

Despite the numerous public agencies (stakeholders) charged with supervision, the study observed such tasks have not been effective after all. One of the officers explained that:

“It has not been easy with the public health directorate to effectively monitor and supervise the contractors within the Metropolis. Even though they have the men

to do the monitoring activities, they are bedeviled with challenges which thwart their efforts at being effective” (WMD Officer 4, 2018).

A public health officer enumerated a number of problems confronting the sector as follows:

“We are confronted with issues of finance, logistics and motivation to carry out our mandates/roles effectively. Sometimes I have to use my own money to do the rounds because there is no official vehicle assigned for that. At times I have to walk to Nima and Mamobi from Kawukudi for the inspection work. Inadequate fund allocations sometimes prevent us from carrying out our mandates of public education and sensitization” (WMD Officer, 2018).

Srivastava et al. (2015) explains that numerous resource challenges affect the effectiveness of solid waste management in urban areas in developing countries. According to Srivastava et al. (2015), they include the lack of infrastructure for collection, transportation, insufficient financial resources and public outlook which make the situation infuriating.

Due to the above structural challenges, most monitoring or inspection officers are unable to effectively tour the entire jurisdiction but resort to ‘a more feasible approach’ which they do by visiting just a small sampled area or households and assume that to be the bigger picture for the remaining areas or households. This was explained by one of the officers at the WMD as:

“You always have to take snap-shots of everything as a replica of what is happening in certain areas. One does not need to comb the whole of Ablekuma South, for instance, before knowing that the contractor working there is performing or not performing. Maybe I will visit few households in Kaneshie, Bubuashie and Odorkor and these would be adequate enough to represent the performance of the contractor in the service zone. So if I am doing my rounds at Kaneshie and I see that their waste bins are full (of solid waste), I don’t need to go to King of Kings area to find out what has happened there. This is a good replica of what is happening in the entire service area” (WMD Officer, 2018).

Notwithstanding, the effectiveness of PPP arrangement in SWM depends on effective monitoring and supervision activities by the Metropolitan authorities. AMA officials are to protect the interests of the householders through effective supervision and monitoring activities of the solid waste contractors. The Metropolitan authorities are to keep an eye on the contractors to ensure they perform their assigned roles to keep homes and surroundings clean. Failure to do this is a sign of inefficiency. Yet, it became clear that some of the public health officers in the Metropolis embarked on limited monitoring and supervision of the activities of contractors at the sub-metro levels.

The DCOs, the sanitary inspectors and other officers seldom go round to inspect the contractors using the key performance indicators incorporated in the franchising agreement as well as the households to check whether they are abiding by the regulations of registration and payment of fees scheduled by the Assembly or not. Nonetheless, the

effectiveness of supervision and monitoring by AMA leaves much to be desired. A contractor intimated that:

“Well, I will say they are doing their best based on the logistics and staff strength that they have at their disposal currently. They are faced with financial and logistical constraints, just as we the contractors are facing. So how will they be effective in their monitoring roles if they do not have vehicles and logistics to work with? How will they succeed? They only rely on feedback from clients when acting on their (customers) complaints. They need financial injections to make them effective in their monitoring and supervisory roles” (PSP Officer 5, 2018).

The above observations confirmed assertions made earlier by scholars (Domfeh, 2002; Ahmed & Ali, 2004; Lartey et al., 2018) that effective supervision holds the key to efficient solid waste management in municipalities including Accra. What remains quite worrisome in many developing countries is the poor attitude towards monitoring private actors which in most cases account for the poor solid waste situation in spite of private sector involvement. The findings above confirms a study by Yeboah-Assiamah et al. (2017) which indicates that a good number of municipal authorities’ sign private contractors to assist in the collection of household wastes, yet, they (municipal authorities) are unable to effectively monitor and supervise their activities and performance in developing countries.

This has become a major concern to urban solid waste management even though public-private partnership in solid waste management has been touted as having the answer to urban solid wastes degeneration. Nevertheless, in spite of the private sector involvement, there is the impression that household wastes and its problems still linger on in countless jurisdictions in developing countries including the Accra Metropolis.

5.3.1.4 Termination and extension of contracts

The AMA together with its outfits is in charge of ensuring that terms of reference and responsibilities in the contract are adhered to by private contractors. This is noted through their periodic monitoring, evaluation and report writings which eventually result in either the extension of contracts or their termination depending on their performance. An officer explained in this way:

“Contract extensions are as a result of good performance whilst termination is as a result of poor performance. These are determinations made by the Assembly when evaluating the performance of contractors at the end of the contracting period” (WMD Officer 3, 2018).

On the part of private contractors, the failure to comply strictly with the franchising prescriptions attracts sanctions from the Assembly. An officer explained it thus:

“They receive initial warning letter from the Assembly indicating areas of non-performance and/or non-compliance. The next stage is when the contractor gets punished by in-house measures put in place by the Assembly. One of the

remedial actions taken against offenders has been the re-assignment of zones to hardworking contractors whilst non-performing ones had their operational jurisdictions reduced or scaled-down. The final and most severe action taken by the Assembly is the abrogation of contract with the affected contractor(s) for persisting in non-performance” (WMD Officer 2, 2018).

Providing practical instances of the above, another officer remarked:

“... for example, Platinum and Liberty Waste had their operations relocated and scaled down respectively because of non-performance. Jekora and Zoomlion were beneficiaries of this re-assignment as a result of their good performance over the years” (WMD Officer 2, 2018).

This was given support by a key official at the Waste Management Department who explained that:

“Platinum failed to meet requirements hence; it has to be given a new area at Nima where they were paired. Again, Liberty Waste’s operational area was scaled down because she could not cope with the collections in the Dansoman zone where she was operating as a result of inadequate machinery to work with” (WMD Officer 3, 2018).

5.3.1.5 Processing offenders for court

On the part of the beneficiaries (householders), their failure to comply with the registration order with accredited contractors in their respective zones received bashings

from the managers of the Metropolis. Their failure to register and permit the contractors to handle their solid wastes, especially those from the second and third class zones were processed for court and fined or surcharged for solid waste infractions. Records from the primary health unit indicated that a considerable number of residents and tricyclers had been hauled to the courts as a result of non-compliance with by-laws. Thus, the franchising agreement incorporated householders as part of the stakeholders in the search for a resilient solution to the solid waste crisis in the Metropolis (Kaseva & Mbuligwe, 2005) and a solution to contractors' financial challenges (Soukopov et al., 2016).

5.3.1.6 Fee determination

A major incentive for effective solid waste management is the delivery of service which also helps in defraying operational cost of private contractors. In other words, when private contractors engage in household waste collection, they also collect fees from these householders. The fees charged are determined by the AMA and later inform the solid waste contractors as well as the householders. The Assembly, notwithstanding, operates a fee and performance based solid waste collection system which is premised on the polluter pays principle through house-to-house collection of solid waste. The 2017 approved monthly charges fixed by the contractors for the class categories in the Metropolis have been shown in Table 5.2 below:

Table 5.2 Approved monthly fees for households

Designation	Example of suburbs	Approved fee (GHC)
First class	Airport Residential Area, East Legon, Roman Ridge and Dzorwulu	100
Middle class	Dansoman, North Kaneshie and Mamprobi	60
Third class	Korle Gonno, Kotobabi and James Town	30

Source: Survey Data (2018)

Table 5.2 suggests that the Assembly adopts a progressive and equitable model in fixing the solid wastes collection fees. The fee charged depends on the physical location of the householders which also has implications on the socio-economic status of residents. The idea is to reduce the burden of those who have little, which is why the fee is not fixed across board, although the second and third class communities are the more polluted with solid wastes due to the activities undertaken in these areas as well as their relatively high population densities.

5.3.2 Role of the private sector

A very crucial set of stakeholders in the triad of public-private partnership in solid waste management are the private contractors. These entities are the key drivers of contemporary solid waste management in many urban communities of which the AMA is not an exception. In the study, two key categories of private contractors were identified; the *formal* and *informal* private collectors. The formal collectors are well organized, with

business operating permits and appropriate resources and vehicles, and are duly contracted by AMA for the solid waste collection. The informal sector comprises individuals who are less organized and mostly uses tricycles and other simple equipment to cart waste from households through direct negotiations with householders.

5.3.2.1 Formal private sector

The formal contractor engages in the following activities in the Metropolis:

5.3.2.1.1 Household registration

The private solid waste contractors complement the efforts of AMA by offering themselves to be contracted. They are later assigned an operating zone or territory to manage the solid wastes within such territories. When assigned a zone, the contractors, together with the PHU quickly register households within such territories in order to provide them with solid wastes services through periodic solid wastes collection, at least once a week. This was explained by one of the AMA officials as follows:

“By the franchise agreement signed, the solid waste contractors were required to register all the householders or beneficiaries within their operational zones whilst at the same time supplying them with solid waste collection bins to deposit their wastes for onward collection by the contractors” (WMD Officer 1, 2018).

5.3.2.1.2 Provision of waste bins

From the above account, a major role and responsibility of the private contractors is to collect solid wastes from registered householders and subsequently transported to landfill

sites. To keep these private entities in business, service fees are levied or charged from the householders for the services rendered. An officer of one of the contracting companies, in reaffirming the role of the private contractor said that:

“The major role of the contractor is to provide waste bins to the beneficiary communities in order to collect their solid wastes on weekly basis to a designated landfill site for dumping. We also bill the beneficiaries as payment for the services we render to them. But before then, the householders must first register with us before we can pick their solid wastes. We pick based on the waste bins we gave them, a sign that he or she was our registered member in the accredited zone” (PSP Officer 3, 2018).

The role and responsibility of the private contractors in registering households and subsequently carting their solid wastes away was summed up by one of the private waste management operators in this way:

“So principally, the contractors’ roles in the solid waste equation are to register households in their zones, collect their waste for deposition at engineered landfill sites at Nsakina, Kpone or Medie. Householders are then expected to pay for the services rendered by the solid waste companies” (PSP Officer 2, 2018).

Guerrero et al. (2013) asserted that the provision of waste bins relieves the burden of the poor in paying for it, thus, encouraging them to keep their solid wastes in the house for collection by the contractors (Mudzengerere & Chigwenya, 2012). This was the spirit behind the distribution of waste bins to households under the franchising agreement. The

contractors supported the free distribution of waste bins for householders' active participation in managing solid wastes from the generation centres. A happy householder opined that:

“Had it not been the free distribution, I would have kept my solid waste in polythene bags which would have tempted me to dump them in the gutter in front of my house. The largeness of the container (240 litres) meant it would be able to receive all my generated wastes for the week with the assurance that the contractor was to come for them at the end of the week” (SCR Householder 35, 2018).

5.3.2.2 The private informal sector

The presence of the informal private waste collectors has been regarded as essential in the waste collection efforts in AMA, especially, in the second and third tier residences of the city. There have been numerous informal sector players who contribute to picking solid wastes from homes in the Metropolis. These include those operating with wheel barrows, those using animals including donkeys/carts whilst others operates with baskets, head pans and sacks (at their backs) who go round homes to solicit for solid waste at a fee. The study did recognize the active role of tricycle operators in the solid waste collection category in the city of Accra. They play unique roles in the collection space despite the fact that their activities are largely unregulated and hardly recognized by AMA officials. An officer touting the unique role of tricycling operations in the city indicated that:

“They play a crucial role in the waste collection balance. They complement the collection efforts of the formal sector. What they are able to handle, if it were to

be left in the community, it would have been catastrophic. Yes, they provide valuable services upstream by collecting lots of solid wastes especially in areas where the assigned contractors could not go. So they provide great services to the communities they operate within” (WMD Officer 4, 2018).

Although their operations are not formalized, they have become strong competitors to the formal contractors, taking a chunk of their customers from them in the process. They gather a lot of solid wastes from households in the second and third class residencies by default. One officer, explaining why tricycling business has flourished in the Metropolis concluded that the formal contractors were to be blamed for that development (WMD Officer 2, 2018). He explained:

“The contractors have themselves to blame because of their professed inefficiencies in collecting solid wastes from homes. They pick the solid wastes from homes intermittently, at their convenience, a situation which the householders detest. They (householders) therefore resort to the use of tricyclers to solve their solid waste challenges. Fortunately, the versatility and availability of the tricyclers won them contracts from the householders who capitalized on the inefficiencies and lackadaisical work habits of the formal contractors to push them off. Worse of it all, the contractors usually want to be paid at the end of the month by the householders even when they fail to pick their solid wastes as expected” (WMD Officer 2, 2018).

In fact, the growth of the informal sector is strengthened by the market forces of demand and supply factors and catapulted by the inefficiencies of the formal contractors as explained above. Nonetheless, tricycling operations are mostly at the receiving end of harassment and accusations of indiscriminate depositions in the city. They are despised and hounded by Metropolitan authorities in the process. The role of the informal sector in solid waste management has widely been advanced in the literature (Oteng-Ababio et al., 2012; Linzner & Salhofer, 2014; Sandhu et al., 2017). These scholars have advanced for a need to regularize and effectively engage or monitor their activities as they remain crucial in the overall SWM process.

Other informal sector participants in the solid waste collection efforts are the NGOs and CBOs. Unfortunately, their roles were not very prominent in the Accra Metropolis even though these two bodies play active or prominent roles in managing solid wastes in Uganda (Tukahirwa et al., 2013). In the view of a senior officer:

“The contributions of these two entities (NGOs and CBOs) are negligible in the Metropolis’ stakeholder mix except an occasional clean-up exercise organized by some group members including religious bodies, corporate institutions and other benevolent associations who celebrate occasions with clean-up exercises. Their activities are not dominant as pertains elsewhere” (WMD Officer 1, 2018).

5.3.3 Role of householders

Householders, also called beneficiaries, are a third force to reckon with in the Metropolis’ attempt to manage its solid wastes. This is the population which is served by the

contractors and has crucial roles and responsibilities to honour in order to maintain an appreciable level of management of solid waste in the Metropolis. After all, these householders generate waste which requires attitudinal change by them (householders) to improve the overall effective (solid waste) situation in the Metropolis. It is quite disturbing that despite the potential roles and impact individual householders could bring to the table, their role is mostly ignored. Against that background, an official at the Metropolitan Assembly intimated that:

“We cannot do away with them (householders) this time. If we want a lasting solution to the urban crisis, we have to incorporate them. They are useful in the search for a lasting solution to the urban degeneration” (WMD Officer 3, 2018).

This sentiment was corroborated by another officer from the same department who said that:

“Householders play a unique role in managing wastes in homes; hence, their roles cannot be discounted in the successful execution of solid waste management in the Metropolis” (WMD Officer 5, 2018).

Fortunately, the franchising arrangement makes provision for the inclusion of householders as they are expected to register with the accredited contractors, hand over their solid wastes to them and above all, pay promptly for the services rendered by the assigned contractors in their zones. The payment is necessary to boost the finances and activities of the contractors in the zones.

Three major roles are identified under the franchising arrangement for householders in the Metropolis. Table 5.3 illustrates the householders' perception of their (own) responsibilities in the management of solid waste in the Metropolis. The respondents were asked to select one significant role that they were to perform under the PPP scheme. The outcome has been summarized below.

Table 5.3 Responsibilities of Householders

Roles	Responses	Percentages (%)
Registration with the Metropolitan Assembly	31	31
Handing over of wastes to accredited contractor	22	22
Payment of collection fees by residents	47	47
Total	100	100

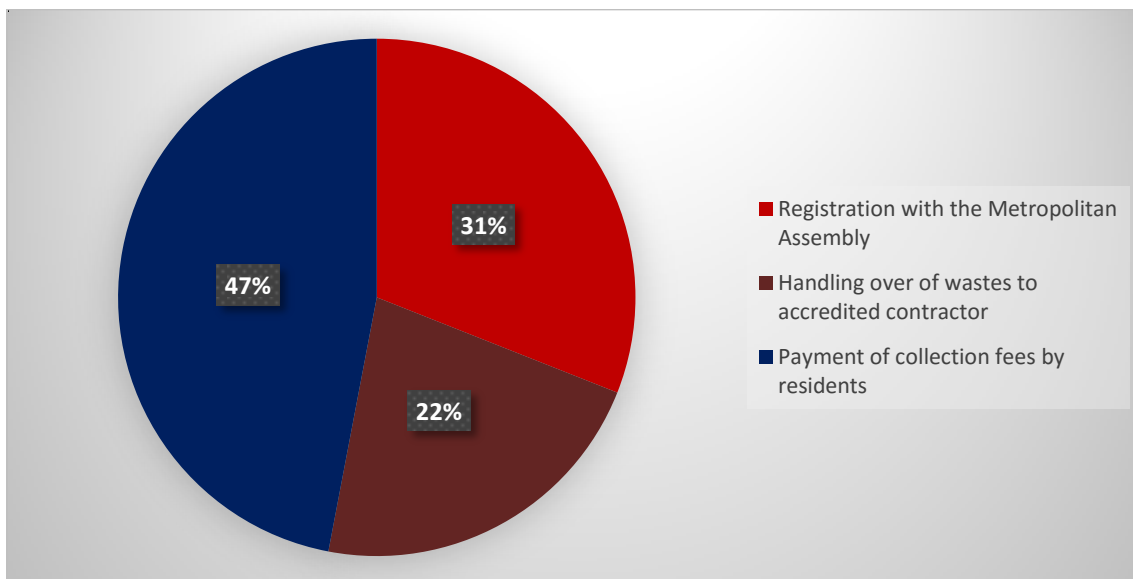
Source: Survey Data (2018)

Majority of the respondents (47%) considered payment of service fees for the municipal services received from the accredited solid waste providers as their responsibility. With this, the beneficiary householders are expected to pay for the services rendered in carting away their solid wastes to the landfill site. Unlike the previous dispensations where householders deposited their solid wastes in central containers without paying, the current practice calls for their active participation in the payment of service charges to the contractors through the polluter-pays module. A considerable number of householders (31%) said there was the need for them to register with AMA through the contractors so

that they could hand over their solid waste to them. That was the only sure way to ensure that their wastes leave their homes for its proper management.

Meanwhile, Table 5.3 has been used to plot a pie chart for illustration purposes below.

Fig. 5.3 Pie chart showing responsibilities of householders



Source: Survey Data (2018)

As indicated earlier, 63% did register with their contractors whilst 22% of them considered handing over their household wastes to the contractor as the most important aspect of the management process. One of the householders said that:

“I prefer handing over my solid wastes to an assigned contractor than these tricycle boys who dump them anywhere after taking them from us (homes). They behave irresponsibly and have contributed a great deal towards environmental degradation. I know the contractors cannot dump all these truck load of waste anyhow apart from the appropriate dumping site. It is this consideration that made

me remain with them notwithstanding their inefficiencies” (FCR Householder 20, 2018).

Scholars have stressed that efficiency of solid waste management improves drastically if citizens actively participate in finding solutions to the crisis through their involvement in the decision making process. This argument was stressed by Sharholly et al. (2008) that by creating societal awareness through their involvement in decision making, solutions are found to solid waste issues (Moghadam et al., 2009). Adequately engaging householders in the public-private partnership process goes a long way to improve the effectiveness of solid waste management. This was experienced in Zimbabwe according to Mudzengerere & Chigwenya (2012). It is in this regard that Ahmed & Ali (2006) consider people (householders) as critical partners in the solid waste management endeavours.

The structural arrangement of key actors and stakeholders in the SWM corroborates the institutional pluralism framework underpinning the study which explains the need to open up the space for the provision of public goods and services: through the government acting in concert with the market forces together with civil society and householders through partnership agreements (Glasbergen et al., 2007). In that regard, the interaction between the public actors, private contractors and individual householders hold the key to effective solid waste management, a belief espoused by Soltani et al. (2015). This has been given empirical support in this study.

5.4 Stakeholder interactions

5.4.1 Interacting with the Metropolitan Assembly

As part of their roles in the SWM process, private waste contractors engage in occasional dialogue with their employers in the Metropolis to enable them find solutions to common problems facing their operations. This sub-section therefore demonstrates the interaction between the key actors in the institutional pluralism framework towards urban solid waste management. All solid waste management companies including those from other Metropolises meet occasionally to share thoughts about waste management and related matters and how to overcome their challenges. This, an officer explained as:

“The issues discussed ranged from fee fixing, beneficiaries’ unwillingness to register and pay for services rendered and problems relating to the operations of tricyclers which pose serious threat to the survival of the main contractors. We therefore meet as a solid waste management body to discuss these at ESPA meetings” (PSP Officer 3, 2018).

This point was corroborated by an official from AMA who narrated that:

“AMA organizes meetings in the presence of the stakeholders to discuss matters of concern with them. The forums usually take place at the premises of the Assembly’s hall where all the stakeholders including the informal sector meet for briefings from AMA officials. At times, they are organized under the auspices of Environmental Services Providers Association (WMD Officer 3, 2018).

An officer from the WMD substantiated the above assertion by saying that:

“Such forums are used to discuss issues of common concern to all the parties/players” (WMD Officer 2, 2018).

During such occasional meetings and interactions, private contractors discuss the possibility of obtaining financial incentives to optimize their (solid waste management) activities. One of the contractors narrated:

“Even though we have not been successful yet, we have not given up lobbying the Metropolitan Assembly to facilitate the granting of tax exemptions and rebates to enable us procure equipment to augment our fleets. Other issues discussed at our meetings include financial instability, acquisition of soft, but long term loans to pre-finance operational activities and repayment of old loans owed us by the Metropolitan Assembly (under the old dispensation)” (PSC Officer 5, 2018).

Meanwhile, there are crucial issues that remain unresolved by AMA which have been problematic to the private solid waste contractors for a long time. Demonstrating their frustrations, one private waste collector indicated that AMA does little to mitigate their plight. He averred:

“The Assembly always pushes us to go strictly by our obligations, but for them, they do not want us to touch theirs, reminding us of the proverbial master - servant sort of relationship. If you try to challenge them, they always threaten to take our contract away from us. Meanwhile, they do little to help us solve our common problems as partners in the solid waste business” (PSP Officer 4, 2018).

According to this officer, the Assembly on countless occasions promised to help mitigate the plight of the contractors, yet, they have not been able to do so.

5.4.2 Interacting with fellow contractors

Besides occasional meetings with the AMA, private waste contractors do also engage in interactions with fellow contractors with a view to maximizing holistic Metropolitan-wide solid waste management practices. Under the auspices of the Environmental Service Providers Association, such interactions also suggest that they operate in some form of harmony, contrary to widely held perceptions that because they are rival companies, they would not open up to each other. In a discussion with them, the contractors expressed the spirit of comradeship among themselves. They mostly share opinions and concerns at their meetings. One of the officers explained in this manner:

“The spirit of unity that binds us together is as a result of the zoning concept which has eliminated the rivalry because none could encroach on the territory of the other officially so there is no controversy or enmity. We do meet as members of the same association with the same agenda to execute. Each after all, has his or her own jurisdiction to operate within” (PSP Officer 3, 2018).

This was given support by another private service provider who said:

“So it is like “rivalry for what?” The forums are organized under the auspices of ESPA, an association of environmental service providers in Ghana. ESPA is an organized association with elected leadership to oversee the wellbeing of her

members. Problems that are brought to their attention are amicably settled to the satisfaction of the aggrieving members. The association also arbitrates on behalf of the members, resolving conflicts which arise among the members” (PSP Officer 2, 2018).

Members within the private waste contractors’ did not, however, dismiss entirely the issue of occasional encroachment into other members’ assigned zones. They explained that such issues occur on rare occasions but members are able to address them without any physical conflict erupting because of effective mediation and arbitration by third parties who are assigned such roles. One of the members said that:

“Each contractor has religiously operated in her zone of operation, thus helping in reducing territorial encroachment and disputes, in spite of occasional skirmishes that do occur by greedy janitors. For instance, the map stipulates that Asadu Royal Seed operated from Abeka Lapaz whilst J. Stanley Owusu operates at Okaikwei South; Liberty Waste Services also is at Dansoman; Jekora operates at Osu Klottey whilst Zoomlion works in the Airport Residential Area. On a good note, no responsible contractor could go beyond his or her jurisdiction (encroach in the zone of the other). We respect each other so much so that we do not want to hurt each other” (PSP Officer 1, 2018).

Another contractor retorted:

“Even though contractors have been given zones to operate within, there are times when some janitors “play it fast” on the other. When such developments come to

the notice of the managers, they raise it at ESPA meetings where the arbitration committee intervenes. Through this, many problems that would have ended up in the law courts have been resolved by the association's arbitrators. Indeed, the service map has been of tremendous help in matters of this nature" (PSP Officer 2, 2018).

In discussing the benefits of ESPA, an officer indicated that its establishment has deepened the level of interactions among the environmental service providers. ESPA used her established structures to organize regular meetings with members to deliberate on issues that concern their well-being (PSP Officer 3, 2018). Such forums, according to the officer, were used to exchange ideas and overcome some of their predicaments. He alleged that:

"Ideas are freely shared at ESPA meetings. Every member was free to talk about what their worries were. There was no room for rivalry. For instance, if I had a strategy which had worked for me, when we meet, it becomes apparent that I share with my colleagues. Other people also tried to share freely their experiences with the members at the meeting. So the association has helped tremendously to the good of solid waste management in the Metropolis" (PSP Officer 3, 2018).

5.4.3 Interacting with householders

The contractors also engage in interactions with the householders who are the reason for their existence. The nature and levels of these interactions differ from company to

company. Whilst Jekora Company believed in closer collaboration with her clients, hence organized forums on regular basis, others saw it as the responsibility of the Metropolitan Assembly to organize such interactions for them to participate in. The chief officer from Jekora mentioned that he does not rely on his collectors to meet with the clients. He rather goes to meet them face to face with the regular durbars he organizes for his clients to find common grounds as far as waste management in their jurisdiction, Osu and its environs is concerned. It should be reckoned that Jekora, a believer of customer orientation, has been in the solid waste business for more than four decades and therefore see his clients as his greatest assets in the solid waste business. He explained:

“I meet them on a regular basis...they are the reason for my very survival as a company and reason for my wealth even though I have not yet gotten there yet” (PSP Officer 2, 2018).

He further explained:

“We at Jekora do not take for granted feedback from our clients. For us, constructive feedback and/or criticisms are necessary for us to render a world-class solid waste management service. We therefore embrace their concerns and factor them in our decision making efforts” (PSP Officer 2, 2018).

Same remarks were made by officials of Liberty Waste Services who also mentioned that they organize meetings to interact with the clientele on a regular basis (PSP Officer 3, 2018). Their principal officer explained:

“At such forums, emerging problems and pertinent issues of concern are mostly discussed. We do invite AMA officials and teams from the sub-metros to meet

our clients to encourage them to register and pay their bills regularly” (PSP Officer 3, 2018).

He further explained the genesis of such critical stakeholder interactions,

“... This was necessitated by the reluctance of the householders to register with Liberty but rather resort to tricycle operators to take care of their solid waste needs. Indeed, tricycling operations thrive here so much that it has collapsed the activities of Liberty Waste in the Dansoman area. We therefore use such forums to discourage them from using the services of tricyclers” (PSP Officer 3, 2018).

In sum, the contractors also use their revenue collectors to organize mini meetings and face - to - face encounters to discuss matters of common concern with their clients. One of the contractors said that:

“Our revenue collectors serve as interface for us. They are our face with the householders on a daily basis so we get the needed feedback from them. Whatever feedback we receive, we act on them. Some problems that are addressed include solid wastes not picked on schedule. When such occur, we quickly dispatch trucks to the affected areas to pick their unpicked solid wastes. We as the contractors also educate the householders on the need to use our services and also pay their fees to empower us in order to deliver efficient services to them” (PSP Officer 4, 2018).

The revenue collectors are used as liaison officers to inform clients about some decisions that are taken by the contractors. They include the inability of the contractor(s) to pick on

particular days and informing them about alternative arrangements made to forestall orderliness in service delivery, outstanding debts to collect from customers and any other health related precautions householders ought to take to stay healthy.

5.4.4 Householders' interactions with contractors

Households were surveyed to seek their views on the interaction between them (householders) and the contractors. The outcome has been demonstrated in Table 5.4 below.

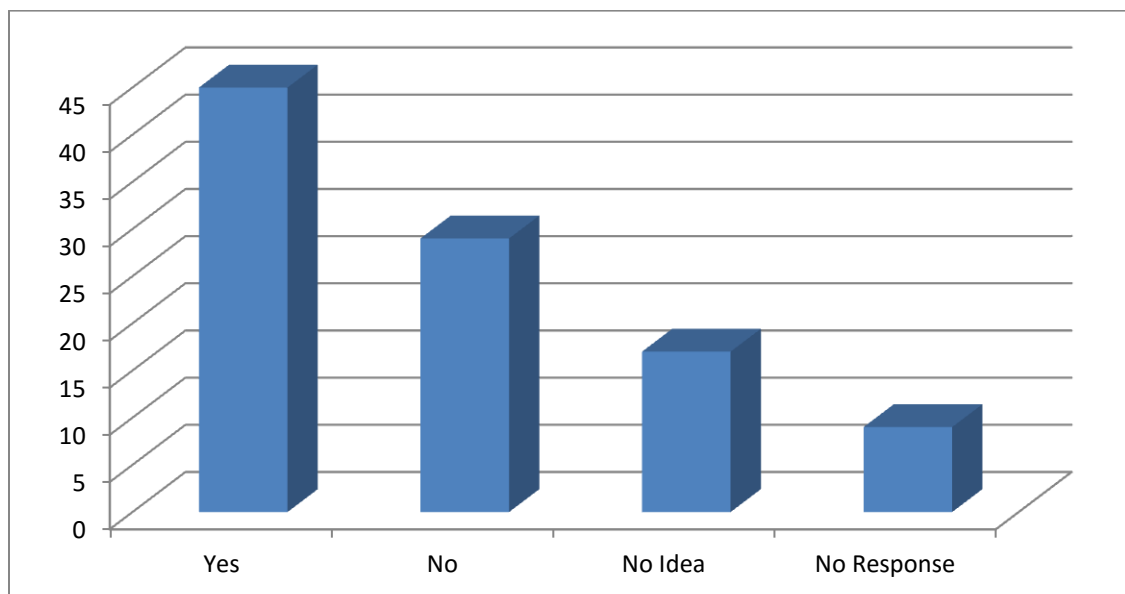
Table 5.4 Stakeholder interactions

Respondents	Frequency	Percentage (%)
Yes	45	45
No	29	29
No Idea	17	17
No Response	09	09
Total	100	100

Source: Survey Data (2018)

Out of the table above have a histogram been designed for a graphical presentation of the interactions that took place with the householders.

Fig. 5.4 Histogram showing generated responses of householders



Source: Survey Data (2018)

The study revealed that householders interacted with a variety of stakeholders including AMA officials, contractors and among themselves (householders) as beneficiaries of common service providers. The aggregate of responses from the graph gave an idea that 45% said there was a significant level of interaction within the stakeholdership arrangement whilst 29% said they did not hear of any intention of the contractor organizing such meetings. Again, Fig. 5.4 showed that 17% of householders indicated that the level of interactions was not discernible enough to attract their attention. Perhaps, there was poor publicity for the meeting hence, the residents' failure to attend.

The above data gives an indication of lack of interest in matters affecting solid waste management in the Metropolis. If all stakeholders were to come together to discuss issues

of common interest to them, the level of inefficiency in the system would be mitigated. A householder who said he hardly heard of meetings taking place had this to say:

“They hardly call us for meetings to discuss common concerns. These contractors fail to pick wastes at the scheduled times so they fear the bashings that would come, hence, their refusal to organize such meetings. The fact is that we cannot remember the number of times they called us to discuss their concerns. We would have attended to pour our hearts out to them” (SCR Householder 46, 2018).

Meanwhile, Ahmed & Ali (2004) have indicated that the closeness of interaction among parties is a good sign that the two parties are ready to work together to solve their common problems.

5.4.5 Restoring service failure

A key significant impact associated with stakeholder interaction is its ability to help restore solid waste services even where there had been reports of failures. In other words, stakeholder interactions help to intensify supervision, monitoring and service delivery. Whenever service failure occurs, AMA officials draw the attention of the relevant contractors to the incident for remedial actions to be taken to offset the occurrence. Officials of the inspectorate division rely mostly on feedback or calls received from households to know of such occurrence before acting. An officer at the AMA office explained in this way:

“The inspectors receive calls from the clients that filth had engulfed an area. The AMA official in turn calls the contractor operating in the area to go and work on the complaint” (WMD Officer 5, 2018).

This was further supported by a member of the ESPA. He explained:

“So when we (the contractors) receive complaints from our clients that our janitors did not pick their solid wastes on frequent basis, the officials from AMA would ask you why you are not picking so that if they can help, they come in to assist. Sometimes, the householder may be missed with no fault of theirs nor the fault of the contractors. In such instances, the sub-metro may call our office and enquire about the development. Their field supervisor would be called upon to investigate. We do apologize to the client for the occurrence and send a truck to pick the solid waste from the affected householder(s). If we experience shortage of trucks to do our usual pickings, we rent some from ZoomAlliance to do the recovering of services” (PSP Officer 3, 2018).

5.4.6 The Meeting environment

This sub-section discusses the environment within which meetings of the stakeholders (householders and private waste contractors) took place. This has been illustrated in Table 5.5 below.

Table 5.5 The nature of meetings

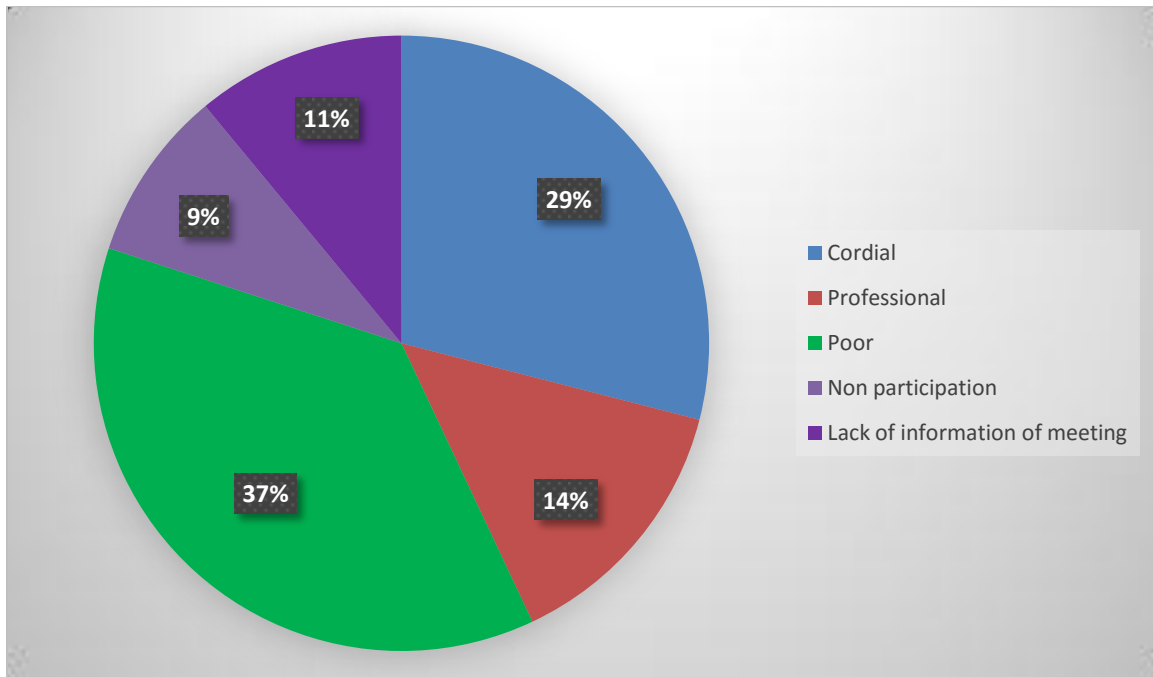
Nature of meetings	Response rate	Percentage (%)
Cordial	29	29
Professional	14	14
Poor	37	37
Non participation	09	09
Lack of information of meeting	11	11
Total	100	100

Source: Survey Data (2018)

Altogether, from Table 5.5 above, 43% of the respondents seemed to be happy with the environment within which the various meetings took place, describing them as cordial (29%) and professional (14%) whilst 57% complained about the organization of such encounters. The complaints ranged from poor organization (37%), non-participation (9%) and lack of information about purported meetings (11%).

The Fig. 5.5 below depicts the responses that were generated from the respondents during the interview.

Fig. 5.5 The nature of meetings



Source: Survey Data (2018)

A disappointed householder alleged that:

“Even if we attend their meetings, the same old story would be told by the officials: ‘we have heard your concerns, we will address them’. I will therefore not waste my time to go there to hear them tell me the same old story again” (SCR Resident 41, 2018).

The relatively poor nature of interaction between solid waste management contractors and householders has been one of the reasons attributed to poor solid waste (management) conditions in developing countries. The findings of this study confirm an observation by Chong et al. (2016) who disclosed an experience they had in selected

small cities in Indonesia where apathy resulting from non-involvement of residents in decision making led to the escalation in indiscriminate disposal of solid waste in the said cities. The observation reiterates a need to adopt prudent measures and a system’s approach to arouse the interests of householders in SWM processes. Ahmed & Ali (2004:467) put it that such “hybrid holds great promise for accountability, efficiency, public interest and planning in overall solid waste management effectiveness”.

5.5 Communicating with stakeholders

5.5.1 Perceived communication gap

The narration above indicates that there was a break in communication among the stakeholders, that is, between the contractors and the householders especially. The Table 5.6 depicts the views expressed by the respondents about the situation.

Table 5.6 Perceived communication gap

Communication gap	Response	Frequency
Yes	59	59
No	41	41
Total	100	100

Source: Survey Data (2018)

Table 5.6 gives a vivid picture of the extent of the gap in communication that exists between householders and their assigned contractors. Of the total one hundred (100) respondents, 59% responded in the affirmative to indicate a rather strained relationship in

communication (gap) between private waste contractors and their householder counterparts in the second and third class zones to the extent that the householders in most cases took unilateral decisions which ultimately affected the full implementation of the franchising agreement without consultations. In this regard, contractors were powerless in influencing some decisions of the householders because there was no effective forum to discuss them. These decisions have had serious effect on the sustainability, survival and efficiency of the contractors. For instance, some householders unilaterally decided not to register nor give their solid wastes to the contractors, let alone pay for the services rendered. If there were enough consultations among the stakeholders, they might have discussed the challenges confronting them at their meetings for possible solutions or conclusions to be drawn.

An upset householder in the third class zone said that:

“I am no more interested in joining your company. I will not give my solid waste to your company henceforth. I was appalled at the poor service delivery being rendered these days to this community by your company” (TCR Householder 76, 2018).

Poor communication between the householders and operating contractors has exacerbated dissatisfaction with service delivery as householders do not have any appreciable platform to advance their concerns. This has had an impact on the response levels and poor attitude demonstrated against waste contractors in terms of patronage leading to their dwindling financial fortunes. They are now seeking for measures to improve the

conditions that underpin the franchising agreement by the Assembly so that they would see improvements in their contracting life. This assumption cuts across the three levels of social standings (first, second and third classes) in the Metropolis. However, management experts including Rue & Byars (2003) and Jones & George (2004) emphasize that effective communication improve efficiency, responsiveness and relationships, thus, facilitating the achievement of organizational goals. Contractors are therefore expected to lead the discussions in order to influence the resolve of the householders in matters that affect their (contractors) wellbeing.

The resultant effect includes poor householders placing their solid wastes in front of the house; some householders failing to bring their solid wastes out and the failure to discuss payment plans with them (contractors). Because the revenue collector failed to call the householders before going on his/her errands, he may meet the absence of most of the householders who might have left for work before he/she (revenue collector) came around. The poor nature of communication between the contractors and householders more often than not result in the revenue collector sometimes knocking at the (outer) gates of householders with the intention of going into the house to collect service fees from them but normally to no avail because they (householders) had already left the house. The problem here has been that each of them (revenue collector and householders respectively) did not anticipate the movement of the other, hence, did not make provision for each other. This has been the trend, thus, affecting the collection of fees from householders. This has had a telling effect on the finances of the contractors. Unlike the

informal waste collector whose availability sometimes is by appointment, negotiation for the fees and carrying of the solid wastes away has been instant.

The revenue collectors seldom use phones to call the householders of their impending visit because of the inherent costs incurred in recharging their phone credits. Other poorly communicated information includes arranging or informing them of impending meetings, the use of cashiers as frontiers of communication and increment in collection fees.

5.5.2 Adopting mobile technology to improve communication

In this age of mobile telephony, one would expect solid waste contractors to optimize the use of such a platform or tool to step up their communication and interaction with householders. Table 5.7 below discusses the use of telephones by householders in their dealings with the solid waste contractors. The data reveals that majority of the participants were not contacted via telephones in their transactions with the assigned contractors.

Table 5.7 Connecting householders with mobile telephone

Connectivity	Frequency	Percentage (%)
Yes	44	44
No	56	56
Total	100	100

Source: Survey Data (2018)

Bamodu (2013) has suggested that mobile technology could be a powerful tool to revolutionize the face of solid waste in developing countries to ensure efficiency and responsiveness (Jones & George, 2004). Telephone communication can be used to bridge the gap among stakeholders in solid waste management in the developing world including Ghana. In this era and age of widespread use of telecommunication, almost every householder has access to mobile phone as its usage has seen a sharp increase in recent times.

Unfortunately, the Table above indicated that 56% of respondents said that they were not contacted through or reached via phones which amounted to a gap in communication. There is therefore the need to improve on its usage in the communication process by those involved directly in the solid waste chain for the generation of instant feedbacks, a necessity. By this understanding, the householders' desire to reach out to their service providers in times of need or crisis would be achieved. Thus, those who got into contact with the contractors (44%) said they were able to contact them in order to pick their solid waste, know the actual time they were coming and whether they were coming or not as well as to be doubly sure whether the monies paid to the accounts officer had reflected in the accounts in their names or not. It was therefore suggested that solid waste operators establish a customer service section or complaints unit with a professional in charge of affairs to serve as interface with the clients to find solutions to their predicament. This can be achieved if the solid waste companies establish database of their clients for possible interactions. As exists in other non-waste sector like the banks, water and electricity companies, databases are used a lot to transact business with their customers.

Banks have linked their customers' databases with their mobile phones so they communicate with them as and when the need arises by sending them information through text messaging. Ghana Water Company Limited (GWCL) and Electricity Company of Ghana (ECG) use databases of their clients to prepare bills for them, among other usages. Solid waste companies could adopt this innovation by using mobile telephony to send messages to their clients by adopting the bulk messaging model which mobile companies offer at a reduced cost. For instance in Ethiopia, the payment of solid waste bills were linked with the payment of water and electricity bills which are deemed as essential public good (Lohri, et al., (2014).

5.6 Conclusion

This chapter has discussed the tripartite nature of PPP in solid waste management in the Accra Metropolitan Assembly by highlighting the roles and responsibilities of each of these actors as well as their interactions. The study identifies that the main regulator which is the public agency (AMA) performs crucial roles including *mandating contractors and assigning zones to them; household registration; monitoring and supervision; assessment of performance for subsequent renewal or termination; fee determination and processing defaulting households to court*. These points are well discussed in the chapter and it was noted that although these tasks are executed, the crucial ones of monitoring and supervision which will be a yardstick for other subsequent tasks are not properly carried out largely due to logistical challenges.

The private actors (waste contractors), on the other hand, could be grouped into both formal and informal with the latter being less organized, unrecognized yet formidable in the second and third class residential areas due to their pragmatism in solid waste management. The formal private waste management companies are those who have officially been contracted by AMA and assigned operating zones. Their main roles and responsibilities are *household registration; provision of waste bins, solid wastes collection and waste disposal*. These actors are the main drivers of the public-private partnership in solid waste management. The study concludes that despite the enthusiasm of the private waste contractors to perform, they nonetheless require routine monitoring, supervision and regulation from the Metropolitan authorities; otherwise, lackadaisical attitude sets in.

A most critical set of stakeholders are the householders or residents who breed the solid waste and their attitudinal adjustment could either enhance or derail the PPP in SWM efforts. Despite the centrality of their roles in waste management, they are more often than not relegated to the background; less engaged and often not provided a congenial platform to meaningfully provide feedback on services received from private contractors. They receive unsatisfactory services yet the opportunities for redress are limited which even when reported do not yield much fruition. The study also observes that there were low level of interaction between the Assembly and private waste contractors, between contractors and householders but a level of engagement and interaction between private waste contractors through a bigger body, the ESPA. The study also notes poor and less institutionalized engagements and interactions between relevant stakeholders which in

most cases reduce the trust and confidence required for effective public-private partnerships. Residents or householders are not given proper or adequate means to advance their grievances and to seek decisive redress.

More so, the study concludes that logistical constraints hamper effective supervision of private waste contractors which makes vast portions of the Metropolis unmonitored by city authorities; as private contractors become aware that their activities are not adequately monitored, they tend to feel relaxed which makes residents to receive poor service in terms of waste disposal. Disgruntled householders who are also not given any proper platform for redressing their concerns tend to rely on an alternative, which has led to the increasing activities of informal private waste collectors in the Metropolis. The study concludes that poor supervision and monitoring on the part of the city authorities has forward linkage with poor service delivery on the part of private contractors and a further forward linkage with householders dissatisfaction which ultimately leads to the growth and patronage of the informal waste collectors.

It should be reckoned that these informal waste collectors pick the solid wastes from one household and later dump or dispose it of in unapproved locations and sites just like the “game of chess”, thereby only repositioning solid waste from one area to the other without any proper final disposal points. The chapter advances for a need to enhance effectiveness and frequency of monitoring and supervision in order to compel private actors to provide appreciable services. It is also crucial to regulate and license all informal waste collectors in order to monitor and harmonize their line of activities.

CHAPTER SIX

SUCCESS AND CONSTRAINING FACTORS TO MANAGING SOLID WASTE IN THE ACCRA METROPOLIS

6.1 Introduction

A crucial challenge facing city authorities in developing countries has been their rapidly growing populations (Awosan et al., 2018) which create greater demand for solid waste management services but remains a lingering problem as a result of poor response of city authorities due to limited capacities and resources (Minghua et al., 2009). Minghua et al. (2009) observe that rising population levels, booming economy, rapid urbanization and the increasing standards of living experienced by the people have vastly increased solid waste generation rates in developing countries beyond the capacity of (city) authorities. In other words, local authorities responsible for waste management in the cities face problems beyond their coping abilities (Sujauddin et al., 2008). They are confronted mainly with lack of organization, financial resources, complexity and other systemic constraints which are with the public sector (Burntley, 2007). This, time and again causes masses of solid wastes that remain uncollected in the open or streets which may later end its journey in drainage systems (Yeboah-Assiamah, 2015). This possibly causes obstructions to water courses with attendant health repercussions (Yongsi et al, 2008; Yang et al, 2018).

Despite the multi-faceted roles and responsibilities bestowed on local authorities, what is problematic is that a significant proportion of the total recurrent expenditure of cities in developing countries is channeled into solid waste management (Scheinberg et al., 2010).

This is given support by an observation made by the World Bank and USAID that many city authorities in developing countries spend between twenty to fifty (20–50%) per cent of their budgets on solid waste management, yet, such amount covers less than fifty per cent (50%) of the urban population with majority remaining uncovered and un-served (Henry et al., 2006). Consequently, a great deal of attention is needed to revamp the approach with which solid wastes are dealt with in urban centres of developing countries. The private sector has therefore been engaged to complement efforts of the public sector through what has become known as public-private partnership in solid waste management (Baud et al., 2001). Increasingly, PPP has been advanced as an alternative to improve solid waste service management in cities (Cointreau-Levine & Coad, 2000; da Zhu et al., 2008). PPP has been regarded as a more effective approach for enhancing effectiveness of solid waste management as this is expected to ensure customer responsiveness, efficiency, coverage, improved communication, injection of higher technology and cost effectiveness. It is important to do a stock-taking upon implementation to ascertain the strengths and success factors associated with PPP in SWM whilst observing the factors that militate against the realization of the full benefits of PPP.

This chapter discusses the successes and constraints encountered in the Public-Private Partnership arrangement in solid waste management between the Accra Metropolitan Assembly and private entities. The chapter is guided by these specific objectives: *benefits the Assembly has derived from the promulgation of the franchising agreement*

and the key success factors and constraining factors that militate against the effectiveness of solid waste collection in the Metropolis.

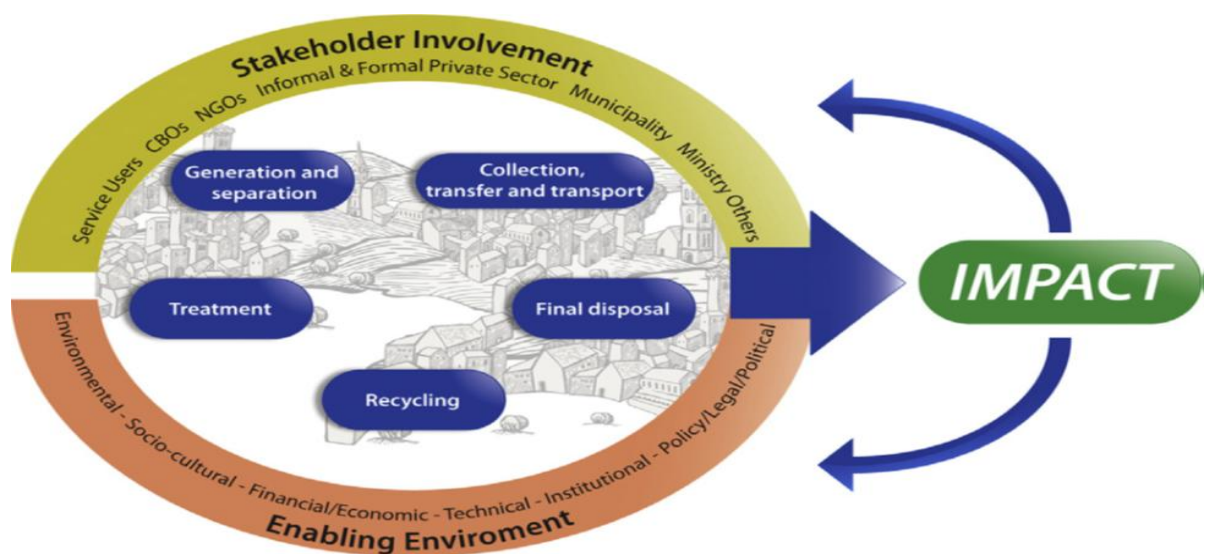
6.2 Conceptual framework

A main driver of solid waste management is the concern for health, environmental, aesthetic, land-use, resource and economic imperatives associated with poor solid waste disposal (Henry et al., 2006; Wilson, 2007). The idea of solid waste management has reached a phase where attention has shifted from ordinary carting of solid waste for disposal to landfill sites towards a more sustainable move which adopts an integrated approach towards the 3Rs of *reduce, reuse and recycle* (Shekdar & Tanaka, 2004; Shekdar, 2009). This new trend or paradigm pushes solid waste management towards a hands-on approach which is more integrated taking into account the involvement of all stakeholders including industry and product manufacturers, government agencies, private waste contractors, and householders towards what has become known as Integrated Sustainable Waste Management (ISWM).

ISWM is a model used for assessing complex and multi-dimensional systems in an integral way. The approach is deployed by ascertaining two key dimensions: (1) the interaction of relevant stakeholders in solid waste management and (2) the flow of waste materials as well as the interrelated processes from solid waste collection through treatment and final disposal (Müller & Scheinberg, 2002; Zurbrugg, 2003; Zurbrugg et al., 2005; Zuilen, 2006). ISWM is a policy shift away from a mere disposal of solid waste to landfills towards a broader perspective of waste management point of view. The

approach for a shift from reliance on exclusive technical solutions to solid waste management towards one that strikes balance between other relevant dimensions such as environmental effectiveness, social acceptability and economic affordability (Morrissey & Browne, 2004). This ISWM model is explained in Figure 6.1 below.

Fig. 6.1 The integrated sustainable solid waste management model



Source: WASTE (2004)

From the foregoing, ISWM pays attention to an integration of the manifold inter-related processes and entities that make up a waste management system. Morrissey & Browne (2004) stressed that even in a developed country contexts, prior to 2000, few PPP models considered the social aspects of SWM. The models focused exclusively on the economic and environmental spheres of solid waste management. Little attention was paid to the need to involve all relevant stakeholders from government agencies, industry and formal private sector service providers to local communities and scavengers. According to

Morrissey & Browne (2004), none really considered the full waste management cycle from prevention to final disposal. The main postulation of ISWM is to provide a congenial platform for the engagement and involvement of all relevant stakeholders in the waste management value chain to ensure effectiveness in the process. For example, in the case of AMA, there is a need to foster a closer interaction between city authorities, relevant departments and public health units of the Metropolis, relevant private solid waste contractors, informal waste collectors and householders. The goal of such engagements is to address an effective SWM from the perspectives of all relevant stakeholders in order to get valuable outcomes. A second aspect of the analysis should be to examine the interconnection and enabling factors from waste collection to final treatment or disposal. All the elements should be treated in a holistic or integrated manner. Interaction of effective stakeholders' deployment and the contextual factors (enabling environment) generate appropriate SWM outcomes or impact.

6.3 Success and constraining factors

This section aims at assessing the measures and mechanisms adopted by AMA to ensure its public-private partnerships in solid waste management become more effective as well as those constraining factors. This section also includes the benefits that the Assembly has chalked by implementing the PPP arrangement in SWM. Data for the chapter was gathered through in-depth interviews with key Assembly officials, private waste contractors and householders living in the Metropolis.

6.3.1 Enabling factors

A first objective was to ascertain those enabling mechanisms which inject effectiveness in the PPP process. The study identified the following as constituting the success factors in the course of interaction with key stakeholders. Thus, the themes below were the fulcrum that facilitated the successes of the franchising arrangement in the Metropolis.

6.3.1.1 Transparency and openness

A first mechanism that helps optimize success of the PPP process has been the transparency and openness in the tendering process. This was greatly expressed by respondents as a step in the right direction which enhances the process. The openness attached to the process through advertisements in the dailies allows all those interested in coming on board in the solid waste sector to be factored in. A senior officer at the Assembly averred:

“Provided the applicant qualifies, he or she is allowed to participate in an open tender prior to selection. The interviewing and selection processes follow the procurement law which is a guiding principle for the award of contracts” (WMD Officer 1, 2018).

The transparency and openness in the process to a large extent encourages congenial working relations among stakeholders who operate together in peace in the Metropolis as they go about their duties. They have common grounds to interact, engage in open discussions and share common concerns as well.

6.3.1.2 Clear territorial demarcation

Another success factor has been the demarcation of the entire Metropolis into zones for the efficient administration of solid waste in the Metropolis. Each contractor is given a service map to direct their activities and movements in the zones assigned. A Planning Officer intimated that,

“One of the key success factors has been the zoning of the city into solid waste collection points which automatically grants the solid waste company monopoly over the area of duty. This has prevented encroachment on a competitor’s zone of operation, thus, reducing conflicts in waste administration in the Metropolis. The Assembly is proud of that feat” (WMD Officer 4, 2018).

The zoning of the Metropolis ensures that the contractors are disciplined, knowing the repercussions of going overboard, that is, outside their jurisdiction. Conflicts that arise from intrusions are resolved using the zonal maps given to each of them. This has reduced infiltration into competitor’s jurisdictions, thus, curtailing protracted tensions and overlaps, and as a consequence, leading to amicable resolution of conflicts.

The relevance of service maps as efficacious in the PPP process was corroborated by the private waste contractors. One of the officers explained that:

“The possession of valid (franchise) contract, a zone of operation for the contractors, fair and transparent tendering process, polluter pays principle, financial independence, a willing clientele and the presence of ESPA (which serves as an arbiter) make the agreement stronger. What make it even strong is the

maps that are given to us to direct our movements in the zone. It has helped tremendously” (PSP Officer 3, 2018).

6.3.1.3 Financial encumbrance reduced through polluter pays principle

The Assembly has more or less empowered the contractors financially by declining to collect the 20% franchise fee due them which has gone a long way to improve on the finances of the contractors. It was noted that the inability of the Assembly to implement to the full, all the requirements of the franchising agreement including the collection of 20% franchising fee meant that the contractors received additional financial incentive, thus, increasing their financial base (WMD Officer 1, 2018). The direct payment was also an improvement over the previous system where the government was paying them. An officer said that:

“They are rather making money. We gave them the contracts which became a blessing to them; an additional source of income. They are keeping the 20% fees which they consider as bonus” (WMD Officer 2, 2018).

6.3.1.4 Involvement of stakeholders in franchising implementation

The Metropolitan Assembly is deeply involved in the implementation of the franchising contract because they had no contractual obligations to settle financially with the contractors. The deep involvement of the Assembly in the design, implementation and the execution of the programme has made it successful. This is in line with the principles borrowed from Strategic Management which indicates that the involvement of the strategist in the implementation process ensures the success of the programme

(Thompson et al., 2013). Even though the working environment is poorly resourced, it was observed that each staff member was doing something worthwhile to ensure the success of the franchising project. This observation was re-affirmed by one of the key officers who said that:

“Without the involvement of the Assembly, this great programme wouldn’t have seen the light of day. We were motivated by the desire to reduce waste drastically in the Metropolis, our conviction is that this programme must succeed and more so it relieves the Assembly of any financial commitment towards the contractors. All these called for the active participation of the entire workforce. We told one another to put in his or her hand to the wheel for its success. It was leadership and collective effort of the workforce that has brought us this far” (WMD Officer 3, 2018).

This was given support by a private waste contractor who averred that the successes his outfit has chalked could also be explained by the active collaboration between the AMA and householders. There is also a strong policy on segregation of solid wastes at the household level and close collaboration with the clientele. The CEO explained that:

“With collaboration with AMA, we have an implementable policy on segregation in both selected Junior High Schools and selected homes where we give them free solid waste bins marked or customized to hold specific waste. Through this, we have been able to establish an organic fertilizer factory, Fortifier, which we supply to farmers both locally and internationally at reasonable prices” (PSP Officer 2, 2018).

Zhang (2005) did not mince words when he said that PPP transactions benefit from strong representation when all the parties get involved in decision making at all levels. He contended that a number of projects failed because of the non-involvement of key stakeholders.

6.3.1.5 Co-operation from the partners

Again, the co-operation of the partners was also significant to the success of the agreement. The three parties were up to task in cooperating with each other in the successful implementation of the franchising agreement. As demonstrated in the ISWM (Fig 6.1) and its effective interaction between stakeholders, each partner depends on the other to survive in the system. The franchising agreement worked because of the tacit support received from all the partners with each playing its role to the best of their abilities and resources.

An officer explained that:

“The contract has travelled this far because of the support each partner received and gave to the other. The new system is interdependent where each party’s end product or service becoming the resource(s) needed by the other (dependent) party” (WMD Officer 2, 2018).

The point above was further explained by another officer who, corroborating said:

“The system supports each other, the Assembly has given her rights of collection to the contractors and the contractors also are doing their job of collecting from households, the householders are also expected to pay for the services (of the

service providers) rendered to them. This kind of arrangement can be likened to symbiotic living or association where each in the ecosystem depends on the other for survival” (WMD Officer 4, 2018).

In fact, it can be observed that the success of the franchising arrangement has been premised on the close collaboration with each of the actors even though there is room for improvements. The failure of one party to honour its obligation, thus, affects the entire system. For instance, the failure of AMA to assign a competent contractor with the requisite resources to a zone seriously disturbs the entire system of collection (contractors) and payment (by householders) in that zone. The Metropolis should ensure that this collaboration is deepened for the good of the franchising agreement and for efficient delivery of solid waste services. The study observed that the major strength associated with the PPP arrangement which also drives the agreement and ensures its success are mainly due to the openness in the bidding process; clear and territorial zoning; financial relief; integrated nature of the agreement and support from the stakeholders.

Table 6.1 below illustrates the premise on which the successes of the PPP arrangements hinged on. According to the householders, these sums up the success story of the franchising agreement.

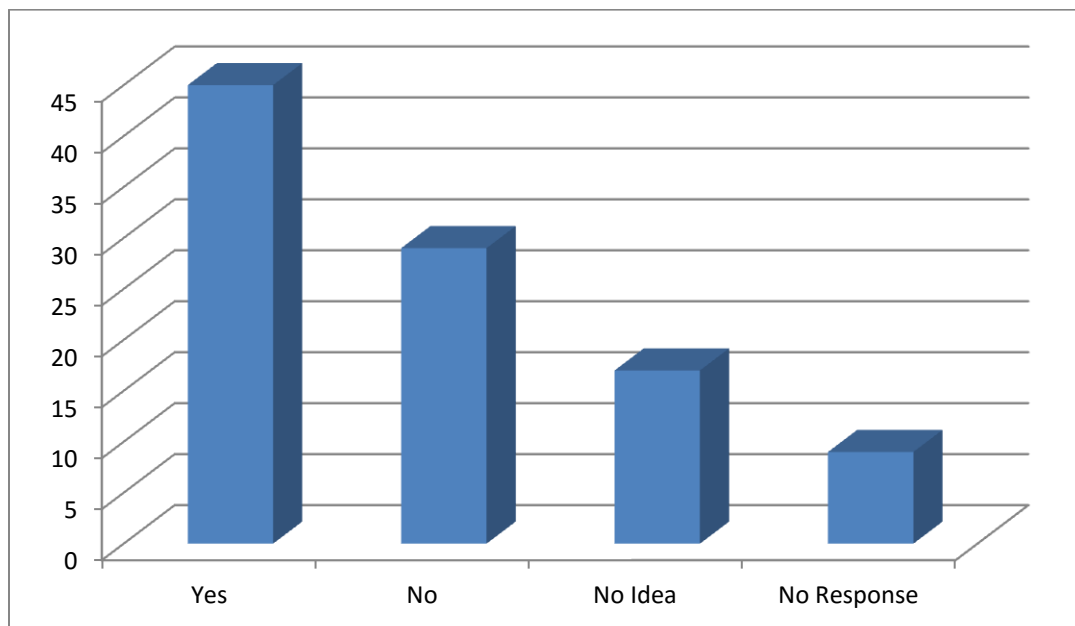
Table 6.1 Key success factors

Reasons for the success	Response	Percentage (%)
Reasonable fees charged	31	31
Regular Collection of garbage	20	20
Their punctuality	16	16
Regular Interactions	15	15
Provision of free bins	10	10
Bigger trucks to carry lot of waste	08	08
Total	100	100

Source: Survey Data (2018)

The factors that enabled the private contractors to achieve successes in the Metropolis, from the Table (6.1) have plotted on a bar chart (Fig. 5) below.

Fig. 6.2 Key success factors



Source: Survey Data (2018)

- i) The possession of bigger trucks which has the capacity to carry large amounts of solid wastes from homes to engineered landfill sites (8%);
- ii) The free distribution of solid waste bins helped a great deal in confining solid wastes in homes, thus, controlling the indiscriminate movement of household solid waste (10%);
- iii) Weekly collection and recovery rates (20%);
- iv) Reasonable fees charged by the contractors (31%);
- v) Regular interactions contributing to the success of SWM in the Metropolis (15%)

A resident in explaining benefits they have derived from the franchising agreement said that:

“The fact that we the residents do not have to worry ourselves about where to deposit our household waste again was good news for us. Even though the contractors may not come at the right time, in the end, they would show up to pick our solid wastes” (SCR Householder 40, 2018).

Another resident from the third class residential area shared her opinion:

“Now I do not have to think about how and where to deposit my household waste because the contractors would surely come for them. I can now concentrate on my profession so that I raise enough money to settle for the high collection fees charged by my solid waste contractor. My house does not smell any longer. The

household waste is now kept in a container which is not spreading any longer in the house as it used to be” (TCR Householder 81, 2018).

Yet another resident from the first class zone in contributing said that:

“Unlike the past when we used to deposit our waste at dawn or in the night, this time round, I just give instructions to my house help to release the waste bin to the janitors when they come around or when she hears the tooting of their horn. We do not struggle to dump our household waste of late because someone is taking good care of it. We also reward them adequately” (FCR Householder 14, 2018).

In sum, the positive rate of response was an indication that the franchising agreement seemed to have worked to achieve the objective for which it was brokered.

Thus, the 240 litre container is big enough to carry large volumes of household wastes which otherwise, would have found its way onto the streets. The containers filled with solid wastes are brought out on scheduled days, albeit weekly, for collection by the contractors. In the Accra Metropolis, janitors picked household wastes on scheduled days in the morning even though a section of the residents have complained about the poor timing of the collection. The residents explained that the waste bins supplied to them spared them the ordeal of purchasing same at exorbitant prices in the open market. The supply of the bins contributed significantly in reducing indiscriminate disposals and spread of diseases and sicknesses in homes as well as communities because there was a

container to keep household wastes in them to prevent spreading to other unauthorized places.

6.3.2 Benefits of the franchising arrangement

A second objective was to examine the implications of public-private partnerships in solid waste management in the Accra Metropolis. In other words, this was to ascertain how the PPP arrangement in SWM has led to successes and improvements in the household waste situation, using AMAs experience. The following benefits suffice:

6.3.2.1 Transfer of risk from the public to the private partner

PPP in SWM has brought about a number of benefits accruing to the Metropolis and the householders, thus, pushing the frontiers of the franchising agreement to higher heights. Respondents explained that the arrangement has brought about financial relief to the Assembly. One of the WMD officers bolstered his stance with the argument that:

“The type of PPP we are implementing has brought about countless benefits which have exonerated us for accepting this principle. At the end of it all, it has been far better implementing it than rejecting it. For, we like the franchising module because at the end of the day, the Assembly does not pay anything to the contractors; we still want to continue with it” (WMD Officer 1, 2018).

The officer affirmed that the partnership has led to the transfer of risk to the private sector which has the capacity to absorb the “heat”. He opined that:

“There has been a successful transfer of risk, responsibility and ownership of municipal solid waste issues to the private sector for its efficient management. I will say there has been a 60% achievement of the objective set for the PPP arrangement in the Metropolis. You see, before the inception of this programme, the government through the Metropolitan Assembly was handling all the household wastes and paying the contractors. This posed a huge financial stress on the Assembly’s budget annually. This arrangement enabled the contractors to take over the collection for the beneficiaries (householders) to pay for the collection” (WMD Officer 1, 2018).

A colleague officer dilated on the lifting of the financial burden on the head of the Assembly by saying that:

“A huge financial burden has been lifted off our heads. We don’t necessarily pay the waste contractors as was done under the previous dispensation (private sector participation) when we engaged them (private sector) to collect household wastes on our behalf. What we are now paying is the final disposal site which we pay 50% of the cost for them (contractors). It has taken a lot of financial burden from the Assembly to the beneficiaries under this polluter pays principle” (WMD Officer 5, 2018).

6.3.2.2 Increase in coverage of household waste collection

The PPP arrangement has also led to an increase in household waste collection coverage in the Metropolis to the extent that areas which were not served previously have now

been receiving attention under the new dispensation (franchising arrangement). The residents have a waste contractor they can entrust their solid waste to, which has come as a big relief to the householders. In spite of the delays, solid wastes do not stay in homes for too long a time. The arrangement has also led to a reduction of unauthorized disposal of solid wastes across the length and breadth of the city.

This has more or less resulted in a win-win situation for all the parties. One officer explained that the new solid waste model is pure business and so the contractors employ skilled and unskilled individuals who also put in their best to maximize their effectiveness in household waste collection. He put it this way:

“The franchising agreement has contributed to the employment of both skilled and unskilled staff with requisite academic qualifications as well as professional staff to enable the companies meet set targets. These professionals include drivers, accountants, environmentalists, engineers, administrators and mechanics who work with varied higher certificates including MBAs and PhDs holders” (WMD Officer 1, 2018).

A colleague officer explained further that:

“Due to the above, companies now have many clients; as many householders in the zones register to receive improved service delivery especially with those residents in the first class residential areas” (WMD Officer 2, 2018).

Even though there were still pockets of uncollected solid wastes in residential areas, at least 70% of domestic wastes had been removed (WMD Officer 3, 2018). Residents were full of praise for the contractors because in spite of their weaknesses, they (contractors) were able to reduce solid wastes by that margin (70%), which otherwise, could have returned into open spaces to cause harm. Majority of the residents (86%) affirmed that the franchising agreement has indeed been a blessing because it has helped to reduce domestic wastes in their homes.

In a quest to validate the relevance of the PPP in SWM from householder perspective, a survey of one hundred (100) households was conducted for their views. The outcome has been shown in Table 6.2 below.

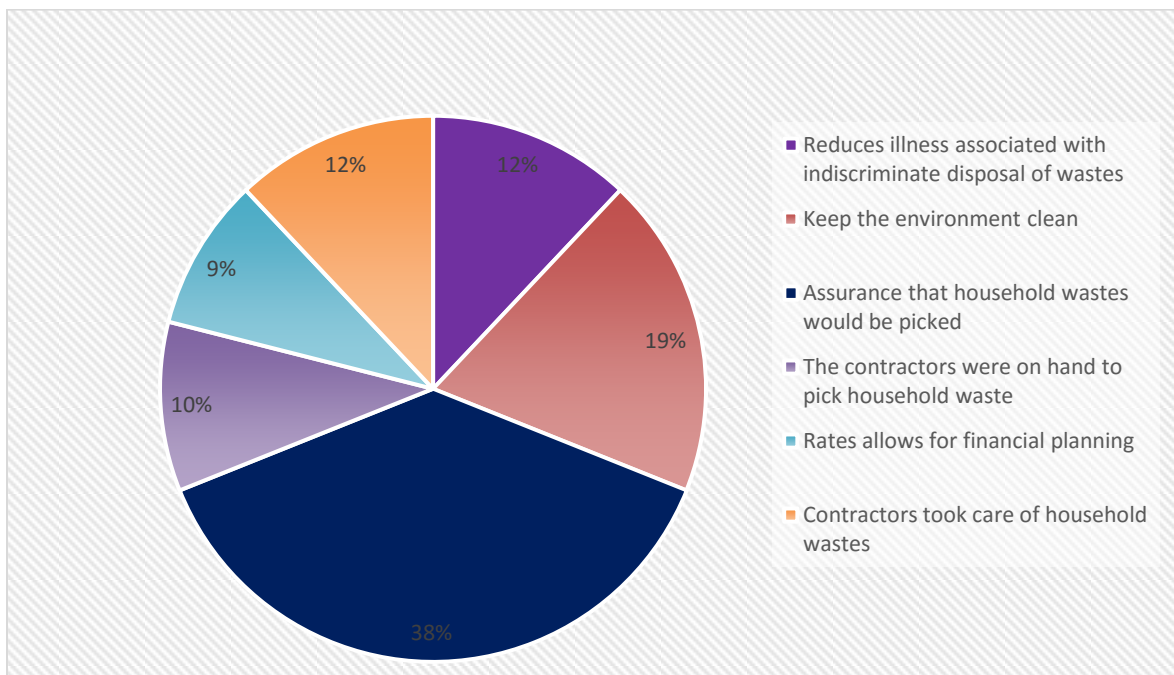
Table 6.2 Benefits of the franchise agreement

Benefits of the franchising contract	Frequency	Percentage(%)
Reduce illnesses associated with indiscriminate disposal of wastes	12	12
Keep the environment clean	19	19
Assurance that household wastes would be picked	38	38
The contractors were on hand to pick household waste	10	10
Rates allows for financial planning	09	09
Contractors took care of household wastes	12	12
Total	100	100

Source: Survey Data (2018)

Table 6.2 has been used to plot a Pie chart (Figure 7) below. It shows respondents expressions of the benefits they (respondents) have derived from the franchising arrangements. These benefits have been depicted on both the Table (6.2) above and the Pie Chart (Figure 7) below.

Fig. 6.3 Benefits of the franchising agreement



Source: Survey Data (2018)

Despite the teething problems faced by AMA with the franchising module, there were pockets of successes that were chalked in the Metropolis. An officer's assertion that it has reduced household wastes by 70% (WMD Officer 1, 2018) was confirmed by 86% of the householders who gave varied positive responses to the success of the franchising agreement in the Metropolis. A section of the householders held the belief that contractors discharged their duties appropriately by coming round to pick their household

waste, thus, making their homes clean of solid wastes, rodents and other pathogens which cause sicknesses and diseases. They were also happy that they have a waste bin which is big enough to receive all the solid wastes generated from individual homes which could be contained for at least one week. A resident had this to say:

“In those days, there were frequent outbreak of Cholera and other water borne diseases as a result of indiscriminate throwing away of solid wastes by residents because we did not have a place to deposit our household wastes. The central container was always full and poorly positioned. We were used to depositing our solid wastes in any empty space that we saw, including the drainage system. Sometimes, we burnt them and the heat and poisonous gases gave us cause for concern. But, at least for now, the confinement in containers has made the environment free of such interferences. We do not get sick so easily of late, hence, we are able to save part of our monies that could have been spent on our health” (SCR Householder 35, 2018).

The above narration paints a picture of how the new system (franchise) has helped in reducing to a minimum, the incidence of ill-health which was associated with poor handling of solid wastes in communities and how the franchising agreement helped to stem the storm.

6.3.3 Factors inhibiting the franchising agreement

According to the contractors, there are a lot of factors that have negatively affected their performance resulting in a deficit collection rate of 30% (WMD Officer 3, 2018). This

was well explained by an officer who explained the franchising arrangement has resulted in about 70% collection rate whilst about 30% (of household wastes) remain uncollected and poorly disposed. The main factors that have affected the full deployment of the PPP as a tool for the overall waste management success are as follows:

6.3.3.1 Refusal of householders to register

One of the constraining factors, according to an officer (WMD Officer 3, 2018), has been the inability of a section of the beneficiaries to accept registration according to the by-law of the Assembly. The by-law enjoins the contractors in assigned zones to register all households but in reality, it has not been easy achieving that objective. With the exception of the first class residential areas where almost all the households have registered with their assigned contractors, that has not been the same with the second and third class areas. A sizeable number of residents in there (second and third class areas) preferred handing over their household wastes to tricycle operators because of their relative operational efficiencies and relatively low charges.

The residents of these communities, therefore, failed to register because of two reasons: the cost factor and the delivery factor. On the cost factor, an officer said that:

“They see the amount fixed for their zone as expensive so they patronize the tricyclers who charge in bits because it suits their pockets. The tricyclers charge GHC2, GHC5 and GHC7 depending on the perceived weight of the solid waste which is economical and within their ability to pay. A section of householders are

therefore comfortable dealing with them (tricyclers) than the accredited contractors (WMD Officer 2, 2018).

The assigned contractors were not able to collect household wastes on schedule especially in parts of the second and third class zones. The ineffectiveness in collection as a result, was explained by a planning officer of the Department as:

“...the tricyclers have taken over the jobs of the contractors, they are competing keenly with them in the middle and lower income zones for which they (contractors) were not happy about, complaining bitterly about that development” (WMD Officer 1, 2018).

In the household survey, respondents explained the main difficulties with the private waste collectors as illustrated in Table 6.3.

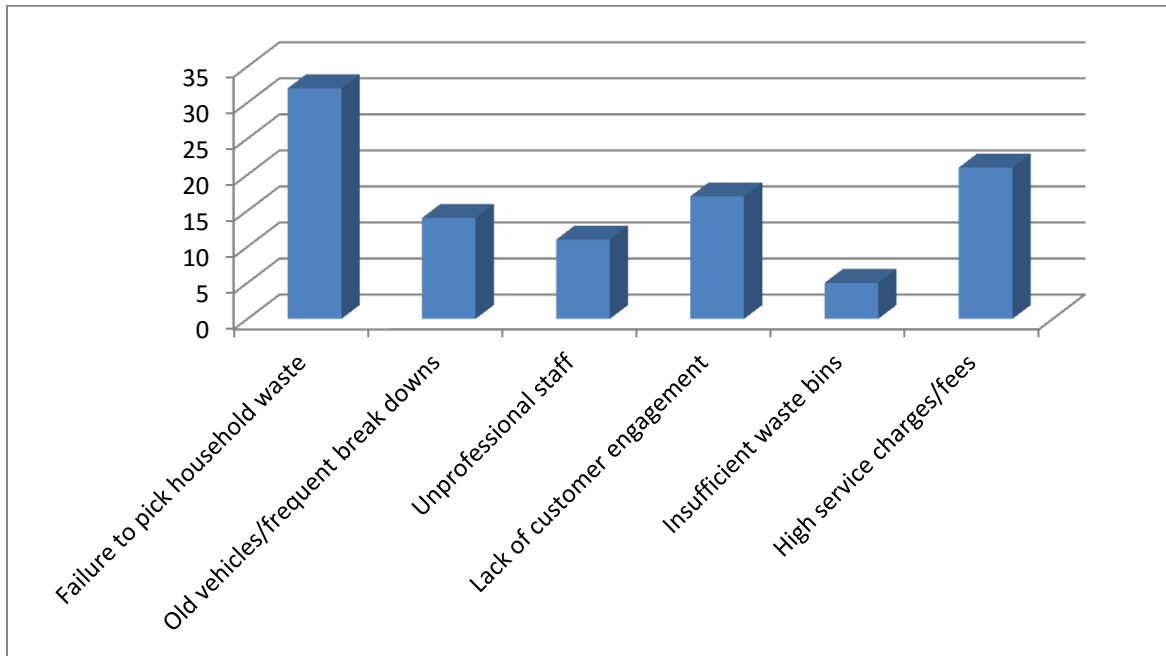
Table 6.3 Problems identified by householders

Identified problems	Responses	Percentage(%)
Failure to pick household waste	32	32
Old vehicles/frequent break downs	14	14
Unprofessional staff	11	11
Lack of customer engagement	17	17
Insufficient waste bins	05	05
High service charges/fees	21	21
Total	100	100

Source: Survey Data (2018)

The above Table (6.3) has been used to plot a histogram (Fig. 7) to enhance the discussions.

Figure 6.4 Problems identified by householders



Source: Survey Data (2018)

The histogram portrays that majority of the respondents (32%) were worried about the inability of the contractors to pick their household wastes on time. Their worry stem from the fact that their waste is composed more of biodegradables which begins to decay after sometime which then begin to release powerful stench into the atmosphere, which is a source of worry to them (householders). Other reasons assigned for the weakening of the franchising agreement included high service charges and fees (21%), inadequate customer engagement within the stakeholdership (17%) and the frequent breakdown of vehicles (14%) considering the old and rickety nature of such vehicles being used, among others.

6.3.3.2 Illegal dumping of solid wastes

Yet another constraining factor identified by the Metropolitan Assembly is the illegal dumping of solid waste by tricyclers in the open and in the zones of the accredited contractors. The reasons why the tricycle operators deposit illegally includes inadequate dumping sites within the Metropolis, the horse power of tricycling machines is not strong enough to travel for long distances, poor attitudes of the tricycle operators, competition and get-rich-quick attitude of the operators. The tricyclers were seen as keenly competing with the contractors in their assigned zones in the second and third class areas, thus, negatively affecting the contractors' overall performance. The contractors registered their hatred for this development.

To halt such incidence, some tricycle operators and householders have been hauled to the courts for solid waste offences. They were arrested and fined various sums of monies although the paltry fines have not been deterrent enough to scare them from repeating such practices and behaviour patterns. It is hoped that the renewed by-laws of the Assembly which would be promulgated in Lot 2 would be punitive and restrictive enough to discourage indiscriminate solid waste disposal in the Metropolis. It has been suggested that transfer stations should be popularized as a transit point to encourage efficiency in the solid waste sector. Transfer stations are collection centers which temporarily take custody of solid waste as it transits to landfill sites. The use of transfer stations to induce efficiency in the waste sector is common in some developing countries (Bernado, 2008; Tan et al., 2014). In Malaysia for instance, compaction is carried out at transfer stations before the solid wastes are carried away to landfill sites (Tan et al., 2014).

An officer stressed that:

“The contractors as well as tricyclers can deposit their solid wastes in there (transfer station) as the solid wastes are prepared to the final resting place which is the landfill site. Since transfer stations are established within cities, it becomes ideal in reducing turnaround time for the contractors as well as tricycle operators in order to increase collection rates and efficiencies” (WMD Officer 3, 2018).

The news that several transfer stations were to be established in the Accra Metropolis with the evidence of the Achimota transfer station holds promise for solid waste management in the Metropolis.

6.3.3.3 Lack of contractor-householder engagement

The study again observed inadequate engagement between the contractors and their constituents, the householders. The purported absence of client engagement among the parties implies that the householders did not have a forum to share their solid waste problems with service providers in their zones. This would have offered contractors and their agents the opportunity to identify with the challenges of householders in order to have common solutions to their concerns. One resident had this to say:

“They do not tell us anything. What happens is that the next moment, they are doing something, including increasing their charges or have changed the day for collection. It is a worrisome development. This explains why we do not engage them when we are taking any action including severing service relationship with

them when we are dissatisfied with their performance” (TCR Householder 87, 2018).

There is therefore the need to ensure commitment and accountability on the part of the contractors by engaging householders in regular discussions/meetings so that they would be responsible to the requirements within the zones. This encourages participation, ownership and accountability in the quest to eliminate household wastes from homes and within the Metropolis.

6.3.3.4 Failure to pick household solid wastes in time

The issue of disappointment in picking solid wastes on schedule has been nothing new in developing countries (Guererro et al, 2013). Some of the contractors fail to honour such commitments as a result of a number of factors that inhibit their picking on time. The householders complained that the failure to pick creates environmental challenges and/or hazards for the affected residents and adjoining neighbourhoods as the organic part begins to decompose. Residents therefore use the services of the informal sector to meet their household waste needs at extra cost, occurring at the second and third class residential communities.

Again, the search for food and recoverable materials from waste bins compel animals (including stray dogs and goats) and scavengers (looking for bottles, among other items) respectively to pour household waste (in front of houses awaiting to be picked) on the ground thereby creating insanitary conditions in front of the house, thus, engendering

pollution and given extra work to the householder concerned (Mudzengerere & Chigwenya, 2012; Rockson et al., 2013).

An angry householder lamented that:

“These people (private waste collectors) are not serious. They allow the household waste to remain in front of our houses for days without picking them. This allows stray animals and scavengers to scatter them(solid wastes) on the ground thereby given us additional work to do. I dislike that. They should be serious with their work” (SCR Householder 51, 2018).

These are examples of the frustrating moments some householders endure as their household waste awaits picking and subsequent transportation to dumpsites by the contractors. On the other hand, those in the first class residential vicinities did not go through such hallowing experiences. This was summed in the response gathered from one of the householders in the first class residence:

“In my view, the janitors are doing very well. They pick our household wastes on schedule and talk nicely with us. We are happy with them and hope they keep such attitudes up. As they say, there is ‘more room for improvements’ for them (FCR Householder 4, 2018).

This point of view is in line with the description Mudzengerere & Chigwenya (2012) gave about rich communities in Harare, Zimbabwe. They assert that the rich always enjoyed preferential treatment in solid waste collection in Zimbabwe because of their

socio-economic and political standings in the society. The same trend prevails in the first class areas in the Accra Metropolis because these places are occupied by the rich and well-to-do in the society. As their status required, residents of first class zones do not experience bad services as prevailing in the second and third class areas because of their ability to pay for effective municipal services irrespective of the fees charged.

In the face of difficulties in picking up solid wastes, householders normally were compelled to engage in emergency actions to overcome the problem. These emergency measures include indiscriminate disposal in the open, open burning (incineration), burying and reporting the contractor to the Metropolitan authorities. Others too keep their household waste in front of their houses, waiting for them (contractors) because they believe that at all cost, they would show up. A key householder had said that:

“If the collectors fail to come around, I bundle my household waste in polythene bags and throw them away in any empty space that I find. I usually do this in the heat of the night when no one is there to see me. I am compelled to do this because I cannot stand the stench and its accompanying ramifications. So the best option for me is to use this non-conventional approach to achieve my personal solid waste goal” (TCR Householder96, 2018).

These experiences were observed especially in the third class residential areas in the city. At the moment, it is a normal occurrence to witness solid waste in large polythene bags under traffic lights, road side, parks and drains in the Metropolis. The reasons for this development include failure of the contractors to pick on time, the desire of the

householder not to pay for municipal services and blatant disregard for environmental sustainability. It was observed at Abossey-Okai that some unscrupulous residents spread their household wastes on the road in the night with the intention that vehicles would pass on it the following day to neutralize its effect. This action may stem from the reluctance of the residents of Abossey-Okai to pay for municipal solid waste services.

It was against this backdrop that a task force from AMA in conjunction with the Police Service arrested eleven residents at Odorkor for throwing away their household wastes on the street in the night (between the hours of 9pm and 4.30am the following day). As indicated earlier, the by-laws were not deterring enough, requiring offenders to pay a paltry fine of GHC180 and normally told to “go and sin no more” by the Sanitation Court (Ofori, 2018). These offenders (above) were sent to the Sanitation Court and fined. One resident said that:

“We the householders get worried when our household wastes are not picked on time. Because we do not separate our solid wastes, the rate of deterioration becomes faster thereby promoting pollution with serious effects on our health. We do recall the incidence of the recent cholera outbreak which killed over 200 people in 2014 in Ghana because of poor solid waste management by the residents. We get worried about the poor service delivery of the contractors” (SCR Householder 42, 2018).

6.3.3.5 Challenges with fee fixing

The issue of fee fixing and its payment also came up. Because the Assembly does not involve the other partners in the fixing of fees and charges, it becomes difficult for its acceptance and implementation by the other stakeholders. This stems from two angles: the amount charged is seen as low to the contractors thus, hampering their efforts to break even financially to meet operational costs. Whilst the contractors are complaining that the service fees charged is low, some residents in the second and third class zones also complains that the charges are exorbitant, hence, were reluctant to pay. The contractors, according to an officer said that:

“They cry over the low fees being charged which to them is not enough to encourage them to remain in business. This has hindered their efforts at investing further in the solid waste sector because they are not getting the needed returns” (WMD Officer 3, 2018).

The householders or beneficiaries on the other hand were not enthused in paying the fees because the services they received from the contractors were not in tandem with the payments. They therefore expressed disgust about the poor services rendered, especially when contractors infrequently pick their household wastes. The non-involvement of all stakeholders in decision making is against the spirit of ownership, commitment and accountability espoused by Zhang (2005). Scholars including Beukering et al. (1999) and Mudzengerere & Chigwenya (2012:232) have all spoken about the need for stakeholders “to be involved in the decision making process because they contribute to the

sustainability of solid waste management through the identification of problems, evaluation of the system and the recommendations for improvements of service”.

The promulgation of the second phase of the franchising agreement (Lot 2) should take into consideration the views of stakeholders for its successful implementation to ensure ownership, accountability and commitment for the sustainability of the franchising programme. There is the likelihood that the participation of all stakeholders promotes a win-win situation for all involved as was used to strengthen local governance provisions for sanitation in Indonesia (Chong et al., 2016). AMA therefore is encouraged to rally all the stakeholders together including the informal sector to discuss the way forward as far as managing solid waste in the Metropolis is concerned.

In Lagos, Nigeria, the residents expressed sentiments about the poor performance of janitors so they took the decision that until they improved on their services, they would not pay the approved fees (Anestina et al., 2014). The situation is akin to Accra’s experience where residents of second and third class zones used boycotts of their services to protest against the ill-treatment meted out to them by the contractors.

6.3.3.6 Inadequate dumping sites

The distance of dumping sites away from residential areas may be explained by factors such as competition for land use, closeness to cities, associated health implications and the general impact of leachates on ground water, among others. However, the location of landfill sites outside Accra/Tema is a bother to the solid waste management companies.

They are located too far away and are even few in number serving the entire Metropolis and the adjoining districts. For instance, the sites at Adjen Kotoku and Kpone are far distances from the Metropolis, thus, creating travel inconveniences for the contractors as far as transporting solid wastes in the Metropolis is concerned.

According to an officer, the distance that his company located at Dansoman covers per trip to Adjen Kotoku or Kpone are 40km and 47km respectively (PSP Officer 3, 2018). The contractors have therefore been complaining bitterly about the impact of distance on their operations in recent times. This long distance to landfill sites decreases turnaround time cost of transportation and efficiency levels of the contractors. If a contractor had fewer trucks, then his woes become accentuated. One officer of the waste management company said that:

“For us, one major challenge facing us as a corporate entity has been the issue of inadequate dumping sites and the distance to and from the site. We have very few of these sites and are privately owned. This means that contractors depositing solid wastes there have to pay tipping fees (GHC18 per trip) before being allowed to deposit. All the solid waste companies in Accra/Tema and its environs use these two sites, hence; it is overstretched and is reaching its full limits fast. This is a worrying development which is affecting the quest to ensure efficiency in solid waste collection. There must be a place closer to Accra for the deposition to encourage efficiency of waste management in the Metropolis” (WMD Officer 1, 2018).

Another officer expressed concern that;

“The issue of landfill site is affecting us big time. Imagine you have trucks that transport solid wastes all the way to Adjen Kotoku or Kpone from Dansoman, a distance of about 40 km and 47 km respectively per trip to these sites. It is a lot of stress, high fuel consumption, the traffic jams and the queues, among others. You realize that you buy one truck to work with and if the landfill is very near, you can do two or three trips a day. You do not need, say, nine trucks to start with. But because of the distance and the way the landfill site is moving away from the city, you require time to beef up your trucks to meet requirements” (PSP Officer 3, 2018).

According to the contractor (PSP Officer 3, 2018), it costs about GHC332 and GHC596 (at current (27th April, 2018) price of GHC4.540 per litre of gasoline) of fuel to make a return trip to landfill sites at Adjen Kotoku and Kpone respectively. In the case of J. Stanley Owusu which operates from Mallam, the distance they cover to its landfill site in Nsawam is 43km and at a cost of GHC550 per trip (PSP Officer 4, 2018). The problem of landfill site is a stumbling block to achieving efficiency in waste collection in the Metropolis. There is therefore the need to look for alternative strategies to treat solid wastes in the Metropolis. Meanwhile, transportation cost is subject to change as a result of the flexibility in the fuel pricing policy which causes variations in the cost of assessing fuel in the country at any giving point in time.

It is suggested that solid waste should be treated as a resource so that alternative approaches such as sorting, segregation and recycling would be encouraged to reduce their (solid wastes) transportation to landfill sites as pertains in advanced countries. Municipalities and governments in collaboration with the private sector own landfill sites in some ASEAN countries, according to Tan et al. (2014). Solid waste companies in these cities deposit at the landfill site at a reasonable fee. The government of Ghana in collaboration with the private sector could own an engineered landfill site for the use of contractors who do not have their own in order to reduce their financial burdens and also boost efficiencies.

6.3.3.7 Poor road networks

Another issue that cropped up was poor road networks within the communities in which the contractors operate. The poor nature of the roads facilitates the frequent breakdown of vehicles thereby increasing wear and tear, high operational costs and high fuel consumption for the transportation of collected wastes to the landfill sites. The net effect has been that it discouraged regular picking, thus, been responsible for the failure to pick in time. There were negative developments that do occur, including the bursting of tyres and sometimes vehicles not able to move because of the bad nature of the road. During rainy seasons, the vehicle may stick in the mud unless it is pulled at an extra cost. For example, coastal Dansoman with places such as Gbegbeyise, Opetekwei, Mpoase and Glefe all have bad road networks which becomes muddy and difficult to use during the rainy seasons. Abeka Lapaz as well as Sakaman all has bad road networks which impede easy movement of the trucks. All these serve as disincentive to efficient collection of

household wastes from homes in these areas, especially those in the second and third class areas whose road networks are mostly not tarred.

A private waste contractor intimated that:

“The road network that passes through the communities is so bad that it affects our operational efficiencies. We have to endure with the bad roads which impair vehicular movements, increase wear and tear, weaken our engines and increase our cost of operations. The Assembly must fix the roads to give us respite. We are suffering too much” (PSP Officer 2, 2018).

The situation is akin to what prevails in Wa (Amoah & Kosoe, 2014) and other cities where road development is at its worst, a bother to the contractors because of its implications on their performance and cost of doing business. This is not different from the situation in other developing countries where bad roads seriously impair efficient collection of solid wastes in major cities. The wish of the contractors was that road networks in the second and third class residential areas are improved to encourage effective collection of solid waste in the Metropolis. This problem cuts across developing countries and affects the effectiveness of household collections.

According to these researchers (Henry et al., 2006; and Guerrero et al., 2013), the poor nature of roads in developing countries have had serious effect on the efficiency of the contractors. The problem has been that the governments of developing countries are constrained by inadequate resources to improve and reconstruct roads within

municipalities to encourage effective solid waste collections. It is suggested that there could be cooperation with the tricycle operators to take over household collections in places where the trucks cannot go or coverage is poor.

6.3.3.8 Non-enforcement of by-laws

A major problem observed from the study was the non-enforcement of some key by-laws of the Assembly which was being flouted by the householders, thus, affecting the overall success of the PPP process. Per the agreement, the Assembly is the only institution which has the jurisdiction over issues of enforcement of by-laws on registration and compliance in the Metropolis. In the second and third class residential zones, some residents with impunity flout the rules by reneging on the registration and payment for municipal services. The resort to the use of the informal sector to solve some household waste problems stems from the Assembly's inability to enforce by-laws on solid waste management including tricycling activities. A concerned private waste contractor quipped:

“One area that needs improvement for us in the private sector is enforcement of by-laws in the Metropolis. We can do our part by collecting the solid waste from homes but we cannot enforce the law on punishing people, especially the recalcitrant ones who ignore registering with assigned contractors. The one who employed us under the franchise agreement is the one who can enforce her own by-laws” (PSP Officer 3, 2018).

Another officer supported the above assertion of his colleague by saying that:

“Because of that, we are losing territory to the tricycle operators and losing monies to them as well because of the failure of some residents to register with us. It is a serious issue which bother us a lot” (PSP Officer 1, 2018).

This has been a major concern to all the service providers because on their own, they cannot enforce the registration of householders and prevent tricyclers from picking waste from the householders concerned in their assigned zones. AMA’s inability to enforce the implementation of her by-laws is akin to what pertains in the Southeast Asian Region where lack of enforcement led to insanitary conditions in most of the major cities including Tien Giang, Chau, Doc and Go Cat (Tan et al., 2014). AMA must compel householders to register and institute punitive actions against them if they fail to comply.

6.3.3.9 Ineffectiveness of Sanitation Courts

Sanitation Courts have been established in the city, yet their judgments have not been deterrent enough to prevent illegal disposal by unscrupulous residents. These residents are motivated in their actions because there has been the problem of “who watches over the watchman”. In other jurisdictions, security men were assigned to check these practices in order to engage in citizens’ arrest for offences including solid wastes infractions. But this has not been the case in Ghana and for that matter, the Metropolis, hence, giving rise to such impunities. The practice is accentuated by the low charges imposed by the law courts for offenders when they are caught. According to the 1975 Act/Law, a culprit after prosecution pays GHC200 only as a fine (LGB, 2018). This is not deterrent enough to prevent its future occurrence.

Since this is nuisance by-law, it is the considered view that the changes that would be introduced will deal with the problem of enforcement to make dumping illegal and punishable by a heavy fine in order to make it deterrent enough to thwart unbridled disposal of solid wastes in the Metropolis.

6.3.3.10 Financial constraints

Service providers in the Metropolis complained about financial constraints which have had serious effects on their operations. The financial challenges emanate from three angles: loss of grounds to tricyclers; non-enforcement of by-laws (on registration) and non-payment of fees and charges. Some residents in the second and third class residential areas were not prepared to pay the charges because they would not register with their accredited contractors. Again, the intrusion into the market by the informal sector has become a worrying development. The financial challenges have thwarted efforts of the contractors in efficiently managing solid waste in the Metropolis.

A worried officer fumed:

“They are picking our solid waste which ought to have given us lots of monies to finance our activities. We cannot stop them from operating in our domain because we do not have the power to arrest or stop them. It is the Assembly which can do that, hence, they have taken advantage of their (AMA) inaction to destabilize us” (PSP Officer 1, 2018).

Solid waste management is a capital intensive venture which requires multiple sources of funding rather than leaving it in the hands of only the householders to do so through the payment of fees. For instance, the US government propped up the solid waste sector with tacit support from the (American) Congress; thus, going a long way to help clear heaps of solid waste from most (American) cities (Black, 1973). This shows the extent to which some governments attached importance to the sector because of its impact on the environment, health and wealth of the people. Countries such as Venezuela (Ramos et al., 2012), Zimbabwe (Mudzengerere & Chigwenya, 2012), Ethiopia (Lohri et al., 2014) and Czech Republic (Soukopova et al., 2016) all receives support from central government in the form of subsidies to cushion their solid waste sector.

Ramos et al. (2012) explained that in Venezuela, the rich in society are taxed to pre-finance the poor's solid waste requirements. It is imperative to observe that quite a number of scholars (Zhang, 2005; Guerrero et al., 2013) have advocated for funds from outside the municipality to be brought on board to support the solid waste sector. It is in this vein that Zhang (2005) suggested that the financial sources such as equity, low financial charges, high equity-debt ratio, low interest rate financing and purchase credit and sureties among others, should be made available to the solid waste contractors, without which PPP in SWM will be in shambles, especially in emerging countries. Guerrero et al. (2013:225) concludes that "the financial support of the central government appears to be a solution to the lack of financial resources" in the solid waste sector. In Ghana, it would serve the interest of the sector well if the two parent bodies, the Accra Metropolitan Assembly and the Ministry of Local Government & Rural Development

(MLGRD), the mother Ministry, could look for alternative funding so that the contractors would shore up their own finances whilst the central government offer the required guarantees so that they procure the needed equipment to support their activities to boost their efficiencies and create a balance in the collection of solid wastes.

6.3.3.11 Competition from the informal sector

The taking over of space in solid waste collection by the informal sector is not limited to Accra and for that matter Ghana alone but in other developing countries as well. Due to the inefficiencies in service delivery by the private formal contractors, the private informal household collectors, called the waste pre-collectors (WPC) in Ivory Coast (Andrianisa et al., 2016) and “Aboboyaa” in Ghana (Amoah & Kosoe, 2014), surfaced and developed hastily as a stop gap measure through the collection of wastes from households which originally belonged to the private contractors for a fee. It has been a worrying development since the informal sector have occupied every space available in their attempt to outwit the formal contractors especially in the second and third class residential areas. They are meanwhile, pushing their frontiers to the first class residencies in the Metropolis. Reports from Nigeria (Anestina et al., 2014), Uganda (Tukhahirwa et al., 2010), Ivory Coast (Andrianisa et al., 2016), Venezuela (Ramos et al., 2012) and Zimbabwe (Mudzengerere & Chigwenya, 2012) indicate that the informal sector with their unregulated activities have taken over the space in urban cities and are doing quite well in transporting household wastes to landfill sites at the expense of the accredited contractors. In Abidjan (Ivory Coast) alone, for instance, it is estimated that the informal sector carries over 70% of household wastes (Boka, 2009).

The informal waste collectors' activities have reduced the market for the assigned contractors who were expected to enjoy monopoly in their zones allocated to them by the Metropolitan Assembly. These developments have had negative financial implications on the contractors. According to the planning officer of the Waste Department (WMD Officer 1, 2018), the formal contractors should be blaming themselves because of their non-responsiveness to the solid waste needs of householders. A senior officer corroborated the assertion of the Planning Officer by averring that:

“The contractors must be blamed because they are not up to the task. They are simply inefficient. They do not pick household waste on schedule and since the householder wants solution to his household waste needs, he would by all means call the tricycler who are “ever-present” to assist in carrying his/her solid waste away. They (tricyclers) have taken over their (contractors) market and we (AMA) cannot do much to assist them because of the extent of their ineffectiveness” (WMD Officer 4, 2018).

The battle to sustain solid waste management in the Accra Metropolis would not be successful without the involvement of the informal sector players. The Metropolitan Assembly should therefore incorporate them in the mainstream collection chain so that they assist the main contractors especially in “difficult to reach places”. By coming out with a policy to regularize their activities, they would have been organized into a strong force to play a role to improve urban household wastes collections. Like it or not, they would always have a constituency of dissonant householders who prefer or vouch for their services than dissonant householders going back to the contractors. It is therefore

the considered view of Andrianisa et al. (2016) that the tricycle operators should be allowed to cover short distances to transfer stations to complement the efforts of the main contractors. The informal sector should not be prevented entirely because of the role they play as avenue for employment to the youth and filling the void left by the formal contractors. The Assembly should therefore help them to be better organized, directed and propped up to play their roles conscientiously and efficiently in the Metropolis.

6.3.3.12 Inability to segregate solid waste at source

Another challenge confronting waste contractors has been the issue of putting all types of solid wastes together at the household level into the waste bin without any attempt to separate them. The contention is that there is no policy to back or enforce separation by the Metropolitan authorities as far as the study was concerned, to promote waste reduction through segregation from homes to the landfill sites. Because there has not been any such policy or legal declaration to that effect, its implementation has been erratic. Some of the interviewed solid waste contractors on their own volition have implemented their versions of the concept whilst others expect AMA to initiate it through public education and sensitization so that residents would be encouraged to implement the strategy at the household level.

One of the companies which have made advances in solid waste segregation is Jekora Ventures. According to the Chief Executive Officer, they have employed over three hundred clients to do the separation at source for them (PSP Officer 2, 2018). Even though the rolling out of the Second Lot of the franchising agreement encourages solid

waste contractors to segregate as a requirement, its implementation is seen as discretionary. There are issues with space to keep the separated wastes, markets for them and the cost of engaging in this practice. One of the key officers at the Waste Department said that:

“Look, I am using my yard to do my separation – plastics, bottles, metals, among others. If I don’t get buyers for them and my premise gets chocked or filed-up with the recoverable wastes, do I continue to do it? The answer would be a big No, thus, destroying the good intentions of segregation that I have conceived” (WMD Officer 1, 2018).

It was observed during a visit to the yard of the Waste Department at Kaneshie with the premise inundated with cardboards and plastic containers which were kept in the open, thus, buttressing the point raised by the Administrative Officer (WMD Officer 1). To address such a challenge, the private waste contractors unanimously suggested that government must institute a policy on segregation, create space for the segregated waste and provide ready markets as well for the sorted materials. This would encourage full participation at all levels, especially at the household level since it would be a source of additional income to them (householders). Providing support to the foregoing discussions, an AMA official indicated that:

“It is a holistic approach which requires that we sit down as stakeholders to think through how we would go about the segregation as a waste reduction strategy whilst at the same time, lead to the springing up of related industries in order to slow the depletion of virgin resources. The Government must therefore come in

with concrete measures to promote segregation to improve the solid waste value chain” (WMD Officer 2, 2018).

If AMA is able to legislate and enforce separation at source, the Metropolis will be the greatest beneficiary. It would engineer a revolution in the setting up of secondary industries through recycling (Veils et al., 2012; Moh & Manaf, 2017). The benefits from segregated solid wastes include drastic reduction in solid wastes disposal at landfill sites, creation of healthy environments, reduced reliance on virgin resources and getting extra income from the sale of recyclable materials, among others. Jekora and Zoomlion are doing well in the recycling business; both have recycling plants that convert biodegradables into fertilizers for the agricultural sector. J. Stanley-Owusu also has advanced in converting solid waste into energy resources in Kumasi. The promotion (of segregation) therefore requires public demonstration of segregation of solid wastes, public education and ready markets for the recyclables. Interestingly, all the private (formal) waste contractors involved in this study started educational programmes to sensitize school children about the need to segregate solid wastes from homes. Not quite long, Qualiplast, a leading plastics producing firm in Accra, in collaboration with Accra Metropolitan Assembly, donated one hundred (100) colour-coded waste bins for distribution to Junior High Schools in the Metropolis (Graphic Report, 2017) as a first step towards popularizing waste separation among school children.

A clarion call has therefore been made to the government to give it a deeper thought and support by coming out with a policy on segregation at the national or local level to drive

efforts across the country or respective MMDAs. It was learnt that the Metropolitan Assembly has intentions to incorporate waste segregation in Lot 2 of the renewed franchising agreement which is yet to be implemented. To kick-start this drive, the solid waste contractors would have to donate three or more customized waste bins to householders for that purpose. As a pilot strategy, the Accra Metropolitan Assembly together with the contractors must find innovative ways of providing the solid waste bins at subsidized prices to households as their widow's mite towards the diffusion of this novelty.

6.3.4 Sustaining the success story

According to the officials of the Assembly, various strategies have been put in place to sustain the success story of the implementation of the franchising agreement in the city. The strategies include effective synchronization of the roles of the waste department and the public health units for efficiency and effectiveness, strengthening of interactions (engagements) with the stakeholders including incorporating them in major decision making efforts. A principal officer from the WMD said that:

“We have to strengthen monitoring and supervision of our departments to sustain the gains chalked. We are engaging in more public education, adopting segregation as a policy in homes, schools and at the work place and reviewing and enforcing by-laws of the Assembly. We are also promoting PPP in recycling of solid waste. All these would be the focus of the second face of Lot 2 of the franchising agreement that would be signed (with solid waste contractors) soon” (WMD Officer 2, 2018).

The concept of solid waste management has moved beyond traditional waste collection to effective management which includes the recycling of recovered (solid waste) materials. The submission of the city official above was given support by private contractors, an indication that the PPP arrangements in the Metropolis are yielding results not only in terms of waste disposal but also in segregation and recycling.

One of the officers of the waste company said that:

“My company is sustaining our successes through the implementation of segregation policy which has led to a vibrant recycling venture where organic wastes are recycled into organic fertilizer called the Fortifier. We have employed about three hundred people (called clients) working on our waste segregation programme. By this, we have been able to prevent about 700m³ (per month or 8400m³ a year) of solid wastes from entering into landfill sites. We have also taken our waste separation activities to public places including the Ministries and in basic schools in our zones of operation. Some of the fertilizers are exported to foreign countries to earn hard currency. They are in high demand” (PSP Officer 2, 2018).

This was corroborated by another contractor who explained that:

“We have been able to expand our frontiers financially to support our activities. We also honour our responsibilities by collecting solid wastes on schedule. We have in addition employed hundreds of people who do waste separation on our behalf to support the recycling industry” (PSP Officer 3, 2018).

Another officer said his company is also implementing efficient strategy of shortening the time of collection by using three janitors at the same time as they move into households to pick their solid wastes for onward transportation to landfill sites. This is what was said by him:

“We use three janitors in our collection drive in residential areas. By this, our janitors are able to operate faster than our competitors, thus shortening collection time. We have also started public education on waste segregation in Senior High Schools (SHS) using customized bins which we donate to them. We also use school children as resource people to educate their peers and parents on solid waste management in homes, schools and churches/mosques” (PSP Officer 1, 2018).

Continuing, the officer went on to say that,

“The school children are being used as change agents to teach and educate parents on the need to embark on solid waste separation in homes. We also have a 48-hour turnaround time which our clients appreciate so much. By this, we do not allow solid wastes to remain in homes for more than the turnaround times (48 hours) after the agreed date of collection” (PSP Officer 1, 2018).

On the part of J. Stanley Owusu Wastes, the officer said,

We have been in business since 1975. We therefore have the experience which we are using to our advantage. We have the technology, committed staff and sound financial base in addition to having our own landfill sites in both Accra and

Kumasi. Lastly, we have a waste-to-energy conversion facility at Kumasi where the energy generated would be added to the national grid to improve on the energy requirements or supply for both domestic and industrial patronage in the country (PSP Officer 4, 2018).

According to the officer from Zoomlion, their sustainable factors include,

“Our trump cards include the ownership of two landfill sites (Kpone and Adjen Kotoku) and the employment of highly skilled personnel including Masters and PhD graduates. We pride ourselves as been the only solid waste company with lots of them (graduates). We also possess state of the art technology and have the requisite machines for our operational activities. Again, we have waste-to-energy facilities for both solid and liquid wastes. We are effective and efficient and have enough financial resources at our disposal. Again, we are in collaboration with our parent company, Zoomlion (China) to do more for the country. We do recycling a lot and are leaders in the solid waste management in the country currently” (PSP Officer 5, 2018).

6.4 Conclusion

From the observations and discussions above, the study derives the following conclusions. To begin with, the key drivers of success at the Accra Metropolis involve the multi-stakeholder approach adopted in the solid waste management process. The interactions between the Assembly, private waste contractors and householders, to a large extent, contribute to the running of the franchising programme. Additionally, the

processes involved in the contracting phase of the PPP arrangement remains very crucial to the overall subsequent success of the program. In the case of AMA, the engagement of various prospective private waste contractors through openness and transparency in the bidding process contributes immensely to the successes chalked.

Moreover, the contracting process involves a phase where the Assembly sets all records straight by clearly delineating the territorial limits and zones for each private waste contractor in order to avoid possible encroachment, unhealthy competition, bickering and losses. It was observed from the discussions that through cooperation and interaction between actors, inter private waste contractors' conflicts were reduced drastically. As a result of these structural measures, AMA has chalked modest successes in the SWM arena which is demonstrated by financial relief to the Assembly through transfer of risks to the private actors, increase in coverage of household registration and waste collection to at least 70%.

In spite of the positive footprints made by PPPs in SWM in the Metropolis, the study observed major structural measures which constrained the full realization of successes associated with public-private partnerships. Firstly, it is noted that measures are not in place to prevent private waste contractors-informal waste collectors' conflict and unhealthy competition. In other words, the unhealthy competition for solid waste by the informal waste collectors tend to obstruct the operations of formal private waste contractors who have been mandated by the Metropolis to have monopoly over waste collection in specified zones. Yet, the Metropolitan Assembly has not done much to

address the situation to the advantage of the contractors. Secondly, there are setbacks with the rate at which waste contractors collect solid waste, especially, in the second and third class residential zones which tends to frustrate householders in these areas. Such operational constraints have made many people resort to other alternatives such as engaging the services of the informal waste collectors (tricyclers) and illicit waste disposal tendencies. This experience has also led to disengagement with the private contractors with new householders refusing to come on board. In addition to the above, the study noted that most of the constraints encountered emanated from challenges with the final disposal site which has led to delays in transporting solid wastes from the communities.

CHAPTER SEVEN

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

The chapter presents a summary of the findings, conclusions and recommendations of the study. It also highlights the study's contributions to knowledge and suggests possible areas for further research. The chapter has been organized into seven sections; an introduction; summary of the study findings; conclusions, recommendations; contributions to knowledge, suggestions for further studies and chapter conclusion respectively.

7.2 Summary of findings

The study sought to assess public-private partnership in solid waste management in Ghana using the experience of Accra Metropolitan Assembly. The study was underscored by three main objectives which were to assess: *the institutional arrangements for solid waste management in the Accra Metropolitan Assembly; examine the roles and responsibilities of stakeholders in the PPP arrangement; as well as the identification of successes and constraints encountered in the public-private partnership arrangement between the AMA and the private formal entities.* The study adopted the case study design within qualitative research approach and the main research instrumentation was in-depth interviews with key respondents and questionnaire administration for householders. This section provides the key findings from each of the study objectives which are highlighted in themes below:

7.2.1 Institutional arrangements for SWM in AMA

The issue of PPP in the Ghanaian context and for that matter, AMA, is top-down driven propelled by national policy guideline although such arrangements are locally adapted. The AMA adopts the franchising typology of PPP underpinned by the polluter pays principle due to its experience with a previous centralized system which posed colossal financial burden on the Metropolitan Assembly. The new arrangement with its financing structure enables recouping of moneys directly from clients for services rendered by private waste contractors unlike the previous regime where they had to wait on the Metropolitan Assembly for a longer period. Moreover, the institutional framework details some stipulated guidelines that structure how PPPs in SWM are carried out. The PPP franchising process is structured by transparency, accountability and fairness which in most cases influence the selection by the Metropolitan Assembly of private contractors with adequate capital outlay, proven competence and assortment of waste management equipment.

To ensure orderliness in the execution of their solid waste collection activities, private waste collectors are allotted to specific (zoned) jurisdictions to avoid inter-jurisdictional conflicts and confusion among householders and private contractors. However, issues of power play and poor engagement with relevant stakeholders at times lead to disgruntled feelings among private contractors which does not auger well for effective solid waste management services. Due to previous experiences and high indebtedness that had accrued at the AMA, it has consequently adopted the franchising arrangement as the best option for the Metropolis to involve private actors in solid waste management and the

financing or payment model through the polluter pays system which is regarded as more sustainable and a relief to the Metropolitan Assembly.

From the study, it was observed that AMA possesses numerous agencies and structures for solid waste management, yet, the structures were found to be ineffective due to under-funding, inadequate resources from Metropolitan tax revenues, insufficient user fees and mismanagement of funds culminating in under-funding of solid waste activities in the Metropolis.

7.2.2 Roles and responsibilities of stakeholders

The study identified that the main regulator which is the public agency (AMA) performs crucial roles including *mandating contractors and respective zoning for them; household registration; monitoring and supervision; assessment of performance for subsequent renewal or termination; fee determination and processing defaulting householders to court.*

The private actors on the other hand, could be grouped into both formal and informal (contractors) with the latter being less organized, unrecognized, yet, formidable in second and third class residential areas due to their pragmatism in solid waste management. The formal private waste management companies are those that have officially been contracted by the Accra Metropolitan authorities and assigned operating zones. Their main roles and responsibilities are *household registration; provision of waste bins, solid wastes collection and waste disposal.* These actors are the main drivers of the PPP in

AMA's solid waste management. Another most critical set are the householders or residents who breed the solid waste and attitudinal adjustment and could either enhance or derail the PPP in SWM efforts. Despite the centrality of their roles in waste management, they are more often than not relegated to the background; less engaged and often not provided a congenial platform to meaningfully provide feedback on services received from private contractors. They receive unsatisfactory services, yet, the opportunities for redress are limited which even when reported, do not yield much fruition.

The study also observes that there is less effective interaction between the Metropolitan Assembly and private solid waste contractors, between contractors and householders but a somewhat engagement and interaction between private waste contractors through a bigger body, the Environmental Service Providers Association. The study also noted the poor and less institutionalized engagements and interactions between relevant stakeholders which in most cases reduce the trust and confidence required for effective PPP. Residents or householders are not given proper or adequate means to advance their grievances and to seek decisive redress.

7.2.3 Successes and constraints encountered in the PPP process

First, the key drivers of success of the PPP involve the multi-stakeholder approach adopted in the SWM process. The interaction between the Assembly, private solid waste contractors and householders in an extent contribute to the running of the program.

Additionally, the processes involved in the contracting phase of the PPP arrangement remains very crucial to the overall success of the program. In the case of AMA, the engagement of various prospective private waste contractors through openness and transparency in the bidding process contributes immensely to the successes attained. Moreover, the contracting process involved a phase where the Assembly sets all records straight by clearly delineating the territorial limit and zones for each private waste contractor in order to avoid possible encroachment, unhealthy competition, bickering and losses. It was observed from the discussions that through cooperation and interaction among actors, inter-private waste contractor conflicts get resolved amicably. As a result of these structural measures, the Metropolitan Assembly has chalked modest successes in the solid waste management arena which is demonstrated by financial relief to the Assembly through transfer of risks to the private actors, increase in coverage of household registration and waste collection to at least 70%.

7.2.4 More room for improvement

In spite of the positive footprints made by PPPs in SWM, the study observed that there were major structural measures which constrained the full realization of successes associated with public-private partnerships.

Firstly, it is noted that measures are not put in place to prevent private waste contractors-informal waste collector conflict and unhealthy competition. In other words, the unhealthy competition for solid waste by the informal waste collectors tend to obstruct the operations of formal private waste contractors who have been mandated by the

Metropolitan Assembly to have monopoly over solid waste collection in such zones, yet, the Assembly does not do much to address the situation. Secondly, there are setbacks in the rate with which waste contractors cart and dispose of solid waste, especially, in second and third class residential zones which tend to frustrate householders in these areas. Such operational constraints have made many people resort to other alternatives such as engaging the services of the informal waste collectors (tricyclers) and illicit solid waste disposal tendencies. This experience has also led to either deregistration with the formal private contractors or new householders have refused to even come on board or failed to register.

In addition to the above, the study noted that most of the constraints encountered emanated from challenges with the final disposal site which could lead to delays or non-carting of household wastes from households or homes. Poor road network, distant location of landfill sites coupled with challenges encountered with disposal sites are key to the issues which currently confront the sustainability of solid waste management in the Accra Metropolis.

7.3 Conclusions

In view of the foregoing observations and discussions, the following conclusions have been derived:

First of all, the issue of PPP in the Ghanaian context and for that matter the AMA, is a top-down driven approach propelled by national policy guideline although such

arrangements are locally adapted. Moreover, the institutional framework details some stipulated guidelines that structure how PPPs in SWM are carried out. The PPP franchising process is structured by transparency, accountability and fairness. Mostly, private contractors with adequate capital outlay, proven competence and assortment of waste management equipment are selected for contracting. Effective execution of PPP in SWM in the Accra Metropolis is powered by administrative mechanisms and organizational structure supportive of effective solid waste management. These, however, require adequate resource revamping in order to step up their legally mandated responsibilities. The study notes that logistical constraints hamper effective supervision of private waste contractors which makes vast territories or zones go unmonitored by city authorities. As private contractors become aware that their activities are not adequately monitored, they tend to feel relaxed which makes residents receive poor services in terms of waste disposal. Despite the enthusiasm of the private waste contractors to perform, they nonetheless require routine monitoring, supervision and regulation from the Metropolitan authorities; otherwise, lackadaisical attitude sets in.

Stemming from the above, disgruntled householders who are also not given any proper platform for redressing their concerns tend to rely on an alternative, which has led to the increasing activities of informal private waste collectors. The study concludes that poor supervision and monitoring on the part of the city authorities has a forward linkage effect with poor service delivery on the part of private contractors and a further forward linkage with householders' dissatisfaction which ultimately leads to the growth and patronage of the informal waste collectors. It should be reckoned that these informal waste collectors

pick the solid wastes from one household and later dump or dispose it in another side of the city or even gutters which is just like the ‘game of chess’, only repositioning solid waste from one area to the other without any proper final disposal points.

7.4 Recommendations

From the above conclusions, the study makes the following recommendations:

7.4.1 Tripartite participation in fee fixing

The study recommends for effective participation and involvement of all key stakeholders in major decisions on solid waste management. In other words, the individual householders, private contractors as well as city authorities should be the tripartite entity that would make major directives such as fee fixing so that actual implementation becomes relatively easy.

7.4.2 Policy on solid waste segregation

The policy on segregation must provide incentives for the citizens to participate fully in segregation at source or the household level. By this, they should be provided with about three customized bins to hold different solid wastes in the house. Again, there should be ready markets for the segregated wastes. This would encourage the householders to continue to keep the segregated wastes which would bring them additional cash to fund other activities including mainstream solid wastes collections. An effective segregation policy encourages fewer solid wastes to landfill sites, the growth of allied recycling industries and above all, improvements in solid waste management in the Metropolis.

This means people would stay in healthy environments thereby affecting their life span and increasing their wealth.

To start with, it is suggested that the policy must be piloted in selected households in every zone and then extended to all other places after its assessment. Encouragement should be given to institutions that have started on a pilot basis especially at the school level. The customized bins should reflect the content in the container. For instance green can be used for biodegradables, blue for recycling items and black for all other solid wastes (Pattnaik & Reddy, 2010). A good segregation policy has the tendency of generating employment (especially for pickers, scavengers and those directly and indirectly involved in recycling), reduces youth unemployment and also help reduce the use of virgin resources, thus, adding value to solid wastes. It would also generate additional revenue and foreign exchange to the companies involved and the government through the payment of taxes, among others.

7.4.3 Availability of engineered landfill sites

As observed from the study, a major challenge is the sustainability of final disposal system which in contemporary times causes delays, increased transportation cost, frustration and poor solid waste management. It is therefore prudent to have a more sustainable system or landfill site which will be well managed with appropriate technology. It is a welcome observation as many of the private waste contractors have advanced plans to own their own landfill sites with a view to reducing operational cost in

the long term. At a meso level, the MMDAs within Accra and adjoining areas could collaborate to have one ultra-modern landfill site to serve their common interest.

7.4.4 Provision of landfill sites in the hinterlands

So far, all the landfill sites that receive the solid wastes from the Metropolis and the outlying municipal and district assemblies have neared their maximum capacity. There is therefore the need to replace these. Considering the competition for land use and the value placed on it, the study recommends that solid waste is transported to mining centres to refill valleys and holes humanly created through mining activities in the hinterlands. Even though this could work under efficient rail system, attempts must be made to transport solid wastes to the sites at the cost of the mining company. This would serve the purpose of reducing solid wastes piled up in the urban areas which would be used to fill vacant lands created by both legal and illegal mining activities. By this, the process of regeneration of vegetative cover would have been enhanced for use by the agricultural sector in the future. The system would work well with an efficient and reliable transfer station system.

It is again recommended that lands should be acquired in areas/vicinities which should be located at a distance which would not be inhabited in the near future. Such a location should not be in contention for at least, the next fifty (50) years. Such sites must be well engineered to reduce the impact on the area especially on groundwater and the generation of leachates. There is the need to conduct regular compaction of the land and regularly cover with clay to reduce environmental impact on the adjoining lands.

7.4.5 Enforcement of by-laws

It was established that loopholes in the enforcement of sanitation by-laws affect effectiveness of PPPs in SWM which also encourage bad attitude including encroachment, householder non-registration with waste contractors and unlawful disposal of solid wastes. It is important for AMA to step up in the enforcement of its by-laws. There is a need to equip and resource its various units and departments to enhance the monitoring role so as to bring culprits to book. More especially, those tricyclers who engage in encroachment need to be engaged and made to form organizations to be registered and be made subsidiaries to the formal private waste contractors for their activities to be regularized and monitored keenly.

Other by-laws requiring immediate attention include compulsory registration by householders, innovative ways of fixing and paying for service charges and stern punishment for refusal to hand over household wastes to assigned contractors. Those by-laws on illegitimate waste disposal (such as those that impose fines) which are not deterring enough should be reviewed upwards to scare people from such practices or tendencies. The punishment could include prison terms and compulsory communal work to tidy the urban environment.

7.4.6 Partnership with academia

SWM has increasingly become scientific and integrated which makes it imperative to factor research findings into industry to advance solid waste service delivery (Bentil, 2017). A disconnect between solid waste industry and research/academia mostly

constrain efforts at finding appropriate strategy and technology applicable to the contextual solid waste challenges of AMA and Ghana. It is important to collaborate in this regard to figure out the prevailing solid waste constraints in specific context as well as the most appropriate intervention and not a wholesale approach as witnessed in contemporary times (Ranga & Eitzkowitz, 2013; Guerrero et al., 2013).

It is therefore refreshing to note the establishment of a waste management research institute by Zoomlion to produce skilled personnel and professionals as well as embarking on scientific studies on solid waste management. This will help in advancing the sophistication of waste management approaches and effectiveness. It is in light of this that a proposal is made for the infusion of academic institutions into the PPP equation so that academia would do the research before handing over the research-outcome to the private sector to implement. It is therefore suggested that the triple helix model be incorporated into the PPP policy to make it Public-Private Academia Partnerships (PPAP) to reduce the rate of failures associated with the adoption of PPP as a vehicle to achieve socio-economic development. This is premised on Zhang et al.'s (2010:428) postulation that "... careful ground work and preparation including comprehensive feasibility study and economic evaluation for each potential partnership project" needed to be carried out before the implementation of PPP projects. The need for the incorporation of academia is given credence when Miraftab (2004) likened PPP to the "Trojan Horse", a story which required an in-depth investigation(s) of PPP projects before implementation.

Finally, there is a need for social education and sensitization of the general public on the need to reduce waste generation, re-use products such as plastic and polythene bags and also encourage recycling of products in order to reduce the rate of final disposal. When this is done, the challenges associated with landfill sites will be reduced drastically. More related, there is a need for active sensitization on the need to educate people on dangers associated with illicit waste disposal by householders. This will help reduce such habits of throwing solid waste into gutters or on the streets.

7.4.7 Catch them young

One laudable strategy for sustaining the clean environments has been the involvement of the youth as role models in the fight against indiscriminate disposal (of solid waste) in the Metropolis. This is imperative because the children are the future leaders (hence must be conversant with clean environmental practices) as well as change agents. It is therefore refreshing to observe that some private waste companies roll out attractive programmes to engage school children to do the education to that effect. It is important to liaise with schools to educate them on how to reduce and re-use solid waste materials. It is also crucial to introduce them to the need to segregate solid waste so that when they grow, it would become part of their way of life and also to become change agents in homes and among their peers by admonishing them to modify their ways towards the environment.

7.4.8 Financial support

The reliance of contractors on householders for their financial requirements has been a worrying development in developing countries. Since solid waste management is a

capital intensive venture, over-reliance on only service charges from householders spells doom for the companies involved if they do not have other reliable revenue stream to support their activities. As discussed earlier, the contractors require regular stream of funds to make their activities sustainable. But this franchising agreement does not support the raising of huge funds to support their activities, more so when the contractors had their hands tied and are prevented from taking part in decisions on fee fixing by the Assembly. Thus, the expensive nature of loan acquisition and the difficulty of accessing it contribute in no small way to the inefficiencies experienced by the contractors. It is the expressed belief that enough funds are injected into solid waste management because of the unique role it play in the socio-economic lives of the people, thus, buttressing the saying that the health of the people is the wealth of the nation.

Solid waste management should be seen as a public good and as such must be giving adequate funding or support. The study admonishes authorities at the AMA, the MLGRD and the government as well as donor agencies to come together to pump enough funds in the sector so that the efficiency levels of the contractors in managing solid wastes in the Metropolis would be improved tremendously. Again, as is done elsewhere including the Czech Republic (Soukopov et al., 2016), Egypt (Ibrahim & Mohammed, 2016) and Ethiopia (Lohri et al., 2014), special purpose tax or funding system can be instituted to raise enough revenue specifically for the solid waste sector.

The Assembly can do this by putting a percentage of tax on the numerous corporate institutions and properties that are found in the Metropolis as solid waste tax to support

the clearing of solid waste in the city. Provided they are briefed and have knowledge about the purpose of payment (of the tax), there is the likelihood that they would comply with it (the payment). They would then see it as their social responsibility towards cleaning the city. Again, a percentage of revenues generated from socio-economic activities in the Metropolis could be allotted to the solid waste sector to support contractors so that all residential areas, irrespective of its socio-economic stance, may receive equal attention in the collection of solid wastes from homes.

7.4.9 Establishment of a Waste Bank (WB)

The solid waste sector has grown over the years to cover the entire country and even beyond. The actors too have increased over the period with many of the participants in the sector contributing their quota to make cities and towns conducive for human habitation. There is therefore a large market to serve and a clientele base that requires funds to support their various solid wastes activities. But there is limited access to available funds to be used by the entire solid waste sector players. These sector players complain bitterly about restricted access to soft loans to fund their activities, thus, hampering their efforts at achieving efficiency in solid waste collection. It is against this background that the study recommends the establishment of the Waste Bank to serve the interests of sector players so that they have access to soft loans to procure needed equipment and logistics to improve on their effectiveness in solid waste collections.

By the coming into being of the bank, the solid waste sector would have joined the comity of institutions that have established banks to seek the interests of their numerous clientele. These institutions include Agricultural Development Bank ADB, National Investment Bank (NIB), the EXIM Bank and the recently established Construction Bank (CB). Two major sources can be used to provide the seed money for the WB – the sanitation fund and levies on plastic importation. The goal of the establishment is to ameliorate the financial sufferings of the waste sector players so that they would have access to unimpeded money to fund solid waste activities.

7.4.10 Improved payment system for fee collection

Currently, the collection of solid waste fees is through house to house collection by the revenue collectors of the companies in question who go round everyday from house to house to collect to take the fees. Sometimes, they meet the absence of the householder, thus, compelling them to go back again and again till they eventually meet and collect (the moneys) from their clients. This routine is repeated every month. This is laborious, costly and risky. The solid waste companies should therefore borrow and adopt best practices existing in other utility service sectors to improve on the collection of service charges and fees. Just as it exists in the GWCL and ECG, clients are directed to “pay points” to settle their indebtedness. By this, the solid waste companies would have safeguarded their monies and to prevent pilfering so that the entire proceeds go to them directly.

The solid waste companies can therefore prepare bills (perhaps, with three months cycle) for their customers to pay at any available “pay point” as is done by GWCL and ECG. This innovation would enhance effective mobilization of funds and also eliminate physical handling of cash by their revenue collectors who sometimes bolt away with the collected monies. An added advantage of this adoption is the establishment of a database which the companies could use to interact with their customers, plan and take decisions in improving client services.

7.4.11 Charging by weight/volume

Managing solid waste in the developing world including Accra Metropolis has become a daunting task to the contractors especially in the areas of household waste collection and transportation. The cost involved is so much that alternative sources of funds must be procured for the contractors in order to enhance their efficiencies. Considering the low rate of payment by the householders, contractors look to alternative sources of shoring up their finances. One innovative way, supported by technology, is the charging system in which householders in the Metropolis would be charged based on the weight or volume of solid waste generated as persists in the Asian countries including Sri Lanka and South Korea (Welivita et al., 2015).

This innovation is being encouraged in developing countries to promote householders’ practice of the 4Rs (recycling, re-use, recover and reduce). The move away from the flat rate (to volume-based or weight-based charging system), all things being equal, would augment the finances of the contractors which would resonate in efficiency in service

delivery. This way, households which generate large amounts of solid wastes, more than what the 240-litre container would hold, would pay extra (money) to support the activities of contractors. This system is vigorously enforced by the tricycle operators in the Metropolis. This means the contractors, with education, would not encounter major difficulties in implementation.

7.4.12 Improvement in road networks

Most of the road networks that pass through large portions of the second and third class zones where there are copious amounts of solid wastes to be collected are in poor state of affairs. This makes transportation of collected solid waste through these corridors very laborious. The problem becomes accentuated during the rainy season when vehicles get stuck in the muddy and waterlogged portions of the road leading to delays in collection and incurring extra cost in pulling the affected truck(s) out of the mess. The nature of road system at the dumping sites is also in deplorable state; getting worse during the rainy season thereby leading to the formation of long queues during tipping. All these impair the efficiency and timely collection of household wastes to dumping sites, thus, reducing turnaround time for collection.

To overcome this challenge, it is recommended that the roads in the Accra Metropolis must be improved for easy transportation of collected solid wastes from homes to landfill sites. Those in waterlogged areas like Gbegbeseye, Glefe and Mampongten; all in the Dansoman zone and Abeka-Lapaz, (with potholes) must be filled with laterite prior to the onset of the rains to facilitate easy movement by the heavy trucks. Since waste

management is a multi-sectorial activity, it requires collaborative efforts from other sectors to improve the networks. The Waste Department needs to liaise with the Ministry of Roads and Highways (MRH), Ministry of Local Government and Rural Development as well as the Department of Urban Roads (DUR) to facilitate the improvement of road networks in the Metropolis to enhance effective and timely collection and transportation of solid wastes across the length and breadth of the city. When this is done, it would as well reduce the frequent breakdowns and repair of vehicles in order to reduce the cost of contractors.

7.4.13 Subsidies on importation of equipment and logistics

Currently, any solid waste contractor who imports equipment to support his/her solid waste activities has to pay fully, import duties on them. These duties are so high that the contractors complain that it drains their limited financial resources. The clarion call from these contractors has been governmental interventions but this is not forthcoming. Considering the fact that the sector is capital intensive and the benefits to be reaped are in the long term, it becomes necessary that the Executive and Legislature come together to extend tax rebates to them as is done to other companies. This would enable the contractors to procure new trucks to augment their existing fleets since the returns that they are expected to get from their investments from the sector are low to allow for that.

It is on this note that the study recommends the lobbying of Parliament to waive the payment of import duties on equipment and because it is to be used for the provision of socio-economic infrastructure for the good of the citizenry. This would enable them to

replace their old and rickety trucks which serve as impediment to efficiency in solid wastes collections in the Metropolis. Again, the study propose that a PPP arrangement in procurement could be entered into so that contractors who do not have the ability to purchase fleets of equipment can rent or pay on hire purchase so that they, in the long run, they procure equipment to improve on their own performance and also increase their fleet of trucks. Currently, contractors who have problems with their trucks rent some from ZoomAlliance at exorbitant fees. In the end, they pay so much without owning them. But with this arrangement, the contractors would be able to own their trucks. This would enable those who do not have the initial capital to use this medium to acquire needed logistics to enter into the solid wastes market.

It is also suggested that contractors own more “mini-trucks” which because of its size, can enter every nook and cranny of the community with ease to pick household wastes. These trucks move faster and can be used to serve on all roads, irrespective of the season. They are also not expensive to acquire. The use of these types of vehicles has been behind the success story of Jekora Ventures. In all, the availability of trucks to pick solid wastes from households would strengthen the resolve of the actors to be efficient to the delight of householders.

7.4.14 Regularization of the activities of the informal sector

One problem which contractors especially those operating in the second and third class zones complained about was the inundating role of tricyclers taking over their market for solid waste collection in their spheres of operations. The menacing roles have reached a

crescendo in which some of the contractors have been pushed out of business. For instance, Liberty Wastes has been pushed out of operations at the SSNIT neighbourhood of Dansoman by the tricyclers. Considering the unique roles that the informal sector plays in the solid waste value chain, it would be appropriate for the authorities to regularize their operations so that they play official roles in solid waste collection in the Metropolis (Veils et al., 2012; Yang et al., 2018). By so doing, they would be the face of AMA in places where the assigned contractors cannot reach as is done by the *mochileros* in Venezuela (Ramos et al., 2012).

By regularizing the operations of the informal sector by registration, the Metropolitan Assembly can be collecting taxes from them to shore up their finances and also regulate their activities so that they become responsible to the Assembly and the Metropolis. By registering them, the Metropolitan Assembly can build their capacities to be responsible and sustain their careers. Through this, the Metropolitan Assembly would have increased the employment rates in the country and also improve waste collection and cleansing. Again, their menacing movements on highways would have been restricted so that they no longer impair traffic flow and becoming tools for accidents on the roads.

7.5 Contributions to knowledge

The following are the contributions that study has added to knowledge.

7.5.1 Openness, transparency and communication

The study brings out the essence of opening up the bidding process through transparency and effective communication. This holds the key for recruiting and engaging private solid

waste contractors with the requisite equipment, experience and capital structure to partner the public sector for effective solid waste management.

7.5.2 Harmonizing operations of Private Waste Contractors (PWC)

The study brings out the need for the public agency or Metropolis to effectively streamline operations of PWC after engaging them. This is done through effective assignment of zones, operational areas and service maps which are known to all contractors to avoid encroachment and acrimony.

7.5.3 Interaction between the PWC to influence policies

The study espouses the relevance of regular interaction among private waste contractors to discuss issues of common interest to them. This is a way of developing effective bargaining and lobbying powers to deal with the Accra Metropolis or public sector. This is because their concerns mostly seem mutual and with a common voice could obtain attention and could influence policy or by-laws such as fee fixing, tax rebates etc. in their interest to enhance their operations.

7.5.4 Effective engagement between PWC and householders

The study demonstrates a need for private waste contractors to actively engage householders in the solid waste management process and regularly update them on events especially when there are increases in fees or when they will not be able to cart solid waste as scheduled. This could be facilitated by optimizing the use of technology as well as mobile technology to engage clients in real-time.

7.5.5 Enhancing monitoring, redress and sanctions

The study drives home the importance for the public agent (Metropolis) to effectively and regularly monitor the activities of private waste contractors. A hotline for householders to get in touch with solid waste inspectors is quite important so as to seek redress and report defaulting waste collectors to the authorities. There is also a need to sanction defaulting contractors to serve as disincentive to take householders for granted since it has wider implications on overall poor solid waste management and poor attitude towards solid waste collection.

7.5.6 Regularizing the activities of the informal waste collectors

The study notes the positive contributions made by the informal sector in solid waste management especially their ability to move into remote communities which brings out a need to integrate them and regularize their activities under supervision of the main contractor legitimately assigned. This requires a by-law which will be well communicated and sanction those who fail to allow themselves to be regularized. When left unregularized, these actors themselves could be a source of poor solid waste disposal when they collect solid wastes from households and transfer them to other areas including gutters at the blind side of authorities.

7.5.7 Integrated solid waste management

A greatest insight from the study is a need to enhance integration between actors in the solid waste management process. This means the public agency (AMA), private waste contractors and householders or their representatives should be actively involved in all

major decisions that would have implications on waste management in their areas. For example, the study draws link between non-involvement and unwillingness to pay for fee increase as well as uncertainty with which a contractor is duly assigned to an area at a point in time which suggests a need to keep all relevant actors on the same page at any point in time.

7.5.8 Changing the PPP nomenclature to PPAP

Miraftab (2004) has described PPP as a “Trojan Horse” because of the failures associated with its adoption as a result of the absence of or inadequate research carried out prior to the implementation of projects. Her description of it (PPP) as a “Trojan Horse” implies that there is the need to conduct thorough research into proposed projects before its final implementation. In line with the Triple Helix (industry, academia and government) model of Ranga & Etzkowitz (2013) and the clarion call by Zhang et al. (2010) for a comprehensive feasibility studies and economic evaluation of PPP projects, the study advocates for the inclusion of research (by academia) to PPP policy implementation in order to ensure effective discharge of (PPP) projects and for value for money especially in developing economies. Based on the forgoing, the study recommends for a change in nomenclature in the PPP taxonomy to PPAC, with policy and theorization implications.

7.5.9 Charging household waste by weight rather than the existing flat rate

The study has been able to suggest that instead of adopting the flat rate of charging for municipal services which is the practice in vogue in AMA, the Metropolitan Assembly

should encourage discriminatory pricing strategy whereby solid waste will be charged by weight to reflect the amount of solid waste generated by each household. In this case, it would be the householders who will determine the amount they would pay to the contractors at the end of the billing cycle as is done in the water and electricity sectors. The fact is that some householders generate more solid waste than others, hence, the need for such corresponding charges. This would encourage contractor efficiency because they would be benefitting from additional revenues through the extra charging of householders. It would have been the solution to the AMA fee fixing which both householders and contractors alike have expressed disquiet about. This had encouraged the adoption of the 4R's (re-use, recycle, reduce and recover) and segregation in areas where charging by weight is practiced.

7.5.10 Tripartite arrangements in solid waste management

Private sector participation in solid waste management was premised on the involvement of the public sector and the private sector (contractors) were performing services on behalf of householders who were in active in the search for efficient service delivery in the Metropolis. This study examined the role of householders in the scheme as a relevant body whose involvement is significant to the success of solid waste collection efforts of the Metropolis. The study concludes that householders should be involved actively in the search for an efficient solution to the solid waste management crisis in urban Accra. The study therefore proposed a tripartite arrangement involving AMA, solid waste contractors and householders for an enhanced SWM practice in AMA and beyond.

7.6 Suggestions for further research

This study has examined the public-private partnership in solid waste management using the experience of the Accra Metropolitan Assembly. Based on the observations, the study identifies new directions for further study. Further study on PPP needs to be broad based adopting a comparative perspective in order to assess how different PPP models yield different outcomes in different context within the country. This will help for a step towards generalization and theory building. Further study needs to pool greater sample sizes from many householders and to subject the conclusions to statistical test analysis for generalization.

Finally, to assess the ‘dark side’ of the informal sector in waste management, it becomes important for a further study to concentrate more on the activities of the informal waste pickers and to explore avenues for optimizing their operations in a way that would effectively contribute to overall solid waste management.

7.7 Conclusion

In conclusion, it is observed that efficient management of solid waste in the Accra Metropolis would be achieved if AMA is effective in discharging its responsibilities as the overlord of solid waste in the Metropolis, maintaining its supervisory role over the contractors and householders, organizing regular stakeholder meetings to prop up the system; with resilient contractors who have the requisite resource base and are ready to dialogue with residents. There must be cooperative householders who are ready to register and honor their obligations towards the contractors and a fair system where solid

waste management in the Metropolis is supported by central government because of the significant role Metropolitan Accra plays in the affairs of the country.

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APPENDIX 2 (ABBREVIATIONS)

FA	Franchising Arrangement
SW	Solid Waste
WM	Waste Management
LD	Legal Department
SA	Stakeholder Analysis
SF	Sanitation Fund
WB	Waste Bank
CB	Construction Bank
AMA	Accra Metropolitan Assembly
PPP	Public-Private Partnerships
ppp	Polluter Pays Principle
ADB(G)	Agricultural Development Bank (Ghana)
AfDB	African Development Bank
ADB	Asian Development Bank
CBD	Central Business District
CBO	Community-Based Organization
CSO	Civil Society Organization
DCO	District Cleansing Officers
ECG	Electricity Company of Ghana
FCR	First Class Residence
GPS	Global Positioning System
KSF	Key Success Factors
EPA	Environmental Protection Agency
SCR	Second Class Resident
NGO	Non-Governmental Organization
DUR	Department of Urban Roads

MSW	Municipal Solid Waste
TCR	Third Class Resident
NSP	Non-state Service Provision
MRH	Ministry of Roads and Highways
NIB	National Investment Bank
PWC	Private Waste Contractors
PHU	Public Health Unit
SWM	Solid Waste Management
EXIM	Export Import Bank
GWCL	Ghana Water Company Limited
MSWM	Municipal Solid Waste Management
ISWM	Integrated Solid Waste Management
ESPA	Environmental Service Providers Association
MMDA	Metropolitan, Municipal District Assemblies
MSWR	Ministry of Sanitation and Water Resources
MLGRD	Ministry of Local Government and Rural Development
MZICD	Ministry of Zongo and Inner City Development

APPENDIX 3 (STATUTORY MAP OF ACCRA METROPOLITAN AREA)

Figure 3

SHOWING STUDY AREAS



APPENDIX 4 (INTERVIEW GUIDE FOR AMA OFFICIALS)

UNIVERSITY OF GHANA BUSINESS SCHOOL

**INTERVIEW GUIDE FOR OFFICERS OF ACCRA METROPOLITAN
ASSEMBLY**

This interview guide is a research instrument to facilitate a semi-structured interview to carry out a study on the topic: Public-Private Partnerships (PPP) in Solid Waste Management (SWM), the case of Accra Metropolitan Assembly (AMA). This is in partial fulfillment of the requirements for the award of a Doctor of Philosophy (PhD) degree in Public Administration and Policy Management. The data elicited from participants shall be used for academic purposes only. Respondents are therefore assured of the strictest confidentiality.

Section A: Background of respondent

1. Designation of respondent.
2. Position of respondent.
3. How long have you been in this position?
4. Gender of respondent

Section B: Solid waste situation

5. a) What prevented the Assembly from handling effectively the solid waste situation in the Metropolis?
6. a) What factors influenced the decision to involve the private sector in the management of solid waste in Accra?
b) Do you think it is worth the involvement?

Section: C Institutional arrangements for solid waste management in the Metropolis

7. a) What requirements or institutional arrangements did the Assembly put in place to attract private sector participation in SWM in the Metropolis?
- b) How transparent and fair were the tendering and selection processes at the Assembly?
- c) What would compel the Assembly to terminate or extend the contract of your clients?
- d) Which form of agreement did AMA sign with the contractors and why?

Section D: Stakeholder interactions

8. a) Who are the key stakeholders in the PPP arrangement in the Metropolis and what roles do each play in the arrangement?
- b) Does the informal sector have a role to play in the collection efforts of the Assembly?
- c) Is there any form of interaction among the partners spearheaded by your outfit?
- d) What is the level of engagement with actors?

Section E: Supervision and monitoring roles

9. a) How do you monitor the activities of contractors in the performance of their assigned roles?
- b) How does AMA monitor and check the activities of contractors in the performance of their duties.
- c) What measures have you put in place to check excesses of the contractors in the performance of their duties?

Section F: Critical success factors and challenges facing solid waste management in the Metropolis

10. What factors are critical to the success of the PPP arrangement in the Metropolis?

11. Are there some benefits to be derived from the arrangements in the Metropolis?

12. What factors constrain the efforts of AMA in managing household solid waste in the city?

13. How can these challenges be overcome?

APPENDIX 5 (INTERVIEW GUIDE FOR PRIVATE CONTRACTORS)

**UNIVERSITY OF GHANA BUSINESS SCHOOL
INTERVIEW GUIDE FOR PRIVATE CONTRACTORS IN ACCRA
METROPOLITAN AREA**

This interview guide is a research instrument to facilitate a semi-structured interview to carry out a study on the topic: PPP in SWM, the case of Accra Metropolitan Assembly. This is in partial fulfillment of the requirements for the award of a Doctor of Philosophy (PhD) degree in Public Administration and Policy Management. The data elicited from participants shall be used for academic purposes only. Respondents are therefore assured of the strictest confidentiality.

A. Background of respondent

1. Name of Waste company
2. Area(s) of operation of contractor.
3. Position of respondent.
4. How long have you been in the employment of this company?
5. How long has your company been in partnership with AMA?

B. Historical perspective of solid waste in the Metropolis

- 6 a) How would you describe the waste situation in Accra prior to the involvement of the private sector in waste collection in the Metropolis?
- b) What factors compelled your company to partner AMA to managing waste in Accra.

C. Public-private partnership arrangements

- 7 a) What is your general assessment of the relationship between the public and private sectors in managing solid waste in the Metropolis?
b) What form of agreement did your company sign with AMA?

D. Tendering and selection process

8. a) What factors went into the selection of your company as one of the successful companies?
b) Was the tendering process and selection fair and transparent to all participants?

E. Roles and responsibilities

9. a) What are the roles and responsibilities do you carry out as a company?
b) What challenges do you face in the performance of your duty?
c) Do your clients cooperate with you in the discharge of your duties?

F. Level of interactions

10. a) Is there any level of interaction between you and other stakeholders?
b) How do you see the interaction among the stakeholders in the franchising agreement in the Metropolis?
c). What problems did your company encounter in your interactions with them?

11. a. Has there been any conflict(s) between your company and the following actors in the discharge of your duties?
i. Households
ii. Competitors
iii. Accra Metropolitan Assembly
b. How were these conflicts resolved?

G. Supervision and monitoring roles

12. a) How effective is the supervision/monitoring of your activities by AMA?
b) If you are not able to collect waste from homes as scheduled?
i. What recovery measures have you put in place to solve the problem?
ii. What action(s) were taken against your company by AMA for not picking on time or regular basis?

H. Key success and constraining factors

13. a) List and explain briefly, the factors responsible for the successes that your company has chalked in the solid waste sector in the Metropolis
b). What measures have you put in place to sustain these successes?

14. a) Discuss the problems that impede effective collection of solid waste in the Metropolis.
b) How are these challenges being addressed by the management of your company?

15. Comment on how the following, as it affect your routine operations:
 - i. Impact of landfill sites on your operations
 - ii. Staff motivation
 - iii. Waste separation at the household level
 - iv. Funding of waste management activities

APPENDIX 6 (QUESTIONNAIRES FOR HOUSEHOLDERS)

UNIVERSITY OF GHANA, BUSINESS SCHOOL

QUESTIONNAIRE FOR HOUSEHOLDERS

This questionnaire is a research instrument to facilitate an interview to carry out a study on the topic: Public-Private Partnerships in Solid Waste Management, the case of Accra Metropolitan Assembly. This is in partial fulfillment of the requirements for the award of a Doctor of Philosophy (PhD) degree in Public Administration and Policy Management. The data elicited from participants shall be used for academic purposes only. Respondents are therefore assured of the strictest confidentiality.

Section A: Background of respondents

1. Gender of respondent: A. Male

B. Female

2. Age of respondent

A. 18 – 23 years

B. 24 – 29 years

C. 30 – 35 years

D. 36 – 41 years

E. 42 – 47 years

F. 48 and above

3a. Name of suburb

b. How long have you lived in this suburb?

A. 0 -5 years

B. 6 – 10 years

C. 11 – 16 years

D. 17 years and above

4. Occupation of respondent: A. Private sector
 B. Public sector
 C. Student
 D. Unemployed
 E. Others (Please state)
5. Educational background: A. Basic education
 B. Secondary/technical
 C. Tertiary
 D. Others

Section B: Institutional arrangements for PPP in solid waste management

6. Are you using the services of private waste contractors operating in your community?
A. Yes
B. No
7. Were you consulted before the said contractor was told to operate in your area?
A. Yes
B. No
8. i. Are you aware that you have to register and deliver your solid waste to the assigned contractor in your community as required by the by-laws of AMA?
A. Yes
B. No
- ii. Have you registered with your assigned contractor?
A. Yes
B. No
9. What type of arrangement has AMA signed with you the residents?
A. Service contract
B. Franchising arrangement.
C. Management contract
D. Others (please state)

10. i. Are you aware that by this arrangement, the households are expected to pay the required fees to the assigned contractors on a regular basis for them to carry your household waste away?

- A. Yes
- B. No

ii. Do you regularly pay your service fees to your contractor?

- A. Yes
- B. No

iii. Give reasons for your answer (ii) above?.....
.....

11. Under what circumstance would you terminate your agreement with the contractor in your community?

- A. When the company fails to collect the waste regularly
- B. When the charges become unbearable
- C. When all the above situations occur
- D. Any other reason (please state)

12. Have you reported the contractor to AMA before for poor performance?

- A. Yes
- B. No
- C. Any other reason (State)

Section C. Roles and responsibilities of Households

13. i. Who is the main stakeholder of solid waste management in the locality/Metropolis?

ii. Select one major role or responsibility that households are expected to play in the Metropolis:

- A) Registering with AMA/assigned contractors

- B) Handing over solid waste to the contractor
- C) Payment of charges for waste collection
- D) Not depositing waste indiscriminately
- E) Others (indicate)

14. i. Do the stakeholders in SWM interact with each other?

- A. Yes
- B. No

ii. What is the level of interaction within the stakeholdership?

- A. Cordial
- B. Professional
- C. Poor
- D. Non-existent

iii. Is there any form of interactions between households and the stakeholders where issues of common interest are discussed?

- A. Yes
- B. No

b. Briefly explain your point above

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.....

15. i. Is there a communication gap between you and your assigned contractor?

- A. Yes
- B. No

- ii. Briefly explain your answer
- iii. Do you use telephone to connect with your waste collectors?
 - A. Yes
 - B. No
- b. Kindly explain your answer

Section D. Key success and constraining factors

- 16. Has the private contractors helped improve sanitation in your home?
 - A. Yes
 - B. No

- 17. Select one benefit(s) that you have gained from the franchising agreement.
 - A. Reduced illness associated with indiscriminate deposition
 - B. Keeping environment clean
 - C. Residents have the assurance that their solid wastes would be collected by all means.
 - D. They collect as per their (contractors) schedule
 - E. Fixed rate helps in financial planning
 - F. Others (please state)

- 18. Which of the following factors do you think are responsible for the successes chalked by contractors in the Metropolis?
 - A. Their punctuality
 - B. Regular collection of solid waste
 - C. Reasonable fees charged
 - D. Regular interactions with households
 - E. Provision of free waste bins
 - F. Possession of bigger trucks

19.i. Has your waste collector ever disappointed you before by not picking your household wastes as scheduled?

A. Yes

B. No

ii. What did you do with your uncollected solid waste as a result?

.....
.....

20. What problem do you see as challenging to you as far as solid waste collection is concerned in your area?

A. Disappointments in picking wastes in time

B. Old vehicles which generates noise

C. Unprofessional staff

D. Lack of customer engagement

E. Frequent breakdown of the contractors' vehicles

G. Others (please state)

21. Which of these recommendations would you make to improve the services of the companies in the Metropolis?

A. Improvements in the times of collection

B. Segregating solid waste from the source/households

C. Improvements in client services

D. Increase in their fleet of vehicles to enhance effective collections

E. Should use tricyclers in areas they cannot reach

F. Should continue with free replacement of waste bins

G. Others (please state)