INTEGRATED SUSTAINABLE HOUSEHOLD SOLID WASTE MANAGEMENT USING SOLID WASTE MINIMISATION APPROACH IN SHAH ALAM, SELANGOR

NOR EEDA BINTI HAJI ALI

A thesis submitted in fulfilment of the
requirements for the award of the degree of
Doctor of Philosophy (Urban and Regional Planning)

Faculty of Built Environment
Universiti Teknologi Malaysia

MARCH 2017

This dissertation is dedicated to my beloved Abah "*Almarhum Haji Ali Bin Bakar*" who died on 30 September 2014, for all the encouragement, support and prayer he gave me during my studies. He was such a wonderful dad and will always be a great dad for my entire life. "*Al-Fatihah*"
I am also grateful to my beloved Mak "*Hajjah Rawiyah Binti Haji Ali*", a phenomenal woman who has given me strength, fortitude, and love.

ACKNOWLEDGEMENT

"In the name of Allah, the most merciful and the most compassionate"

First and foremost, I would like to express my deepest gratitude to Allah S.W.T. for giving me strength and patience in completing my thesis. A special appreciation also goes to my supervisor Prof. Dr. Ho Chin Siong for his effective guidance throughout the course of this research. He was always around to offer advice and suggestions. I benefited immensely from working under him, and I sincerely appreciate the painstaking thoroughness and promptness with which he read the drafts of this thesis. I cannot thank him enough for the role he has played in my life. My sincere appreciation goes to members of staff of the Faculty of Built Environment for their assistance at all times. I wish to acknowledge also Assoc. Prof. Dr. Mohammad Rafee Bin Majid and Assoc. Prof. Dr. Rashid Embi and a host of other lecturers in the faculty, who provided all the necessary guidance during my registration in 2011.

I would like to thank all the official organisations - municipalities, councils, schools and non-governmental organisations - for giving me the opportunity to conduct my fieldwork. Special thanks are due to the Ministry of Education in Malaysia's (KPM) for sponsoring the study. Furthermore, I am grateful for the invaluable support and encouragement of my employer the Universiti Teknologi MARA (UiTM) during my studies. Finally, I would like to thank everybody who extended their support to help me complete this thesis successfully, and I apologise sincerely for not being able to mention them personally one by one. Many individuals have provided the moral and intellectual support that I needed to go through the doctorate programme. To all of them, I wish to express my deepest appreciation. This doctorate programme could not have been completed without the support and encouragement from everyone.

Thank You!!

ABSTRACT

Good solid waste management has emerged as a vital element in creating cities that offer a healthy and comfortable environment for living. Municipal solid waste poses an environmental problem particularly in cities that have experienced rapid growth. Solid waste minimisation is a way of reducing the amount of solid waste generated by households. This study investigates solid waste minimisation practice among urban households in Shah Alam, Selangor and provides insight on the roles of various stakeholders involved in waste management. The study also examines the influence of households socio-demographic characteristics on psychological factors, knowledge and behaviour affecting solid waste minimisation and the quantity and composition of solid waste generated monthly per household. The study employed both inferential and descriptive analyses. Findings revealed that knowledge on solid waste minimisation has statistically significant associations with 5 socio-demographic characteristics, namely age [$F(4, 295) = 2.36$, $p = 0.05$]; race [$F(2, 297) = 2.84$, $p = 0.05$]; marital status [$F(2, 297) = 2.83$, $p = 0.05$]; monthly income [$F(3, 296) = 2.86$, $p = 0.037$] and home ownership [$F(2, 297) = 5.01$, $p = 0.007$]. Results also showed that behaviour towards waste minimisation is significantly associated with marital status [$F(2, 297) = 3.51$, $p = 0.031$], gender [$F = 7.328$, $p = 0.00$] and home ownership [$F(2, 295) = 7.57$, $p = 0.001$]. In terms of solid waste generation, the results showed that 0.46 kg of waste generated per capita per day with a composition of 45.51% recyclable materials, 33.98% food and 20.51% non-recyclable materials. The study found that the various stakeholders (waste contractor, household, junkshop, local authority, Non-Government Organisations (NGOs), Community Based Organisations (CBOs), educational institution, scavenger) act independently and there was no proper coordination existed among them in solid waste management. Therefore, local authorities should work on the collaboration with other stakeholders in providing systematic education to enhance solid waste minimisation. Based on the results of the study, a conceptual framework of Integrated Sustainable Household Solid Waste Management (ISHWM) was developed taking into account the current regulations.

ABSTRAK

Pengurusan sisa pepejal yang baik telah muncul sebagai salah satu unsur penting dalam penciptaan bandar-bandar yang sihat dan persekitaran yang selesa untuk didiami. Sisa pepejal perbandaran merupakan punca kepada masalah alam sekitar terutamanya di bandar-bandar yang telah mengalami pertumbuhan yang pesat. Peminimuman sisa pepejal adalah satu cara untuk mengurangkan jumlah sisa pepejal yang dijana oleh isi rumah. Kajian ini mengkaji amalan peminimuman sisa pepejal dalam kalangan isi rumah bandar di Shah Alam, Selangor dan menyarankan pandangan mengenai peranan pelbagai pihak berkepentingan yang terlibat dalam pengurusan sisa pepejal. Kajian ini juga meneliti pengaruh ciri-ciri sosiodemografi isi rumah ke atas faktor psikologi, pengetahuan, dan tingkah laku yang melibatkan pengurangan sisa pepejal serta kuantiti dan komposisi bulanan sisa pepejal yang dihasilkan setiap isi rumah. Kajian ini menggunakan kedua-dua teknik inferens dan deskriptif dalam penganalisisan data. Hasil kajian menunjukkan bahawa pengetahuan tentang peminimuman sisa pepejal mempunyai hubung kait statistik yang signifikan dengan 5 ciri sosiodemografi, khususnya umur [$F(4, 295) = 2.36$, $p = 0.05$]; kaum [$F(2, 297) = 2.84$, $p = 0.05$]; status perkahwinan [$F(2, 297) = 2.83$, $p = 0.05$]; pendapatan bulanan [$F(3, 296) = 2.86$, $p = 0.037$] dan pemilikan rumah [$F(2, 297) = 5.01$, $p = 0.007$]. Keputusan kajian juga menunjukkan bahawa tingkah laku terhadap peminimuman sisa mempunyai hubung kait yang signifikan dengan status perkahwinan [$F(2, 297) = 3.51$, $p = 0.031$], jantina [$F = 7.328$, $p = 0.00$] dan pemilikan rumah [$F(2, 295) = 7.57$, $p = 0.001$]. Dari segi penjanaan sisa pepejal, keputusan kajian menunjukkan bahawa 0.46 kg sisa dijanakan per kapita sehari dengan komposisi 45.51% bahan boleh kitar semula, 33.98% makanan dan 20.51% bahan tidak boleh dikitar semula. Kajian mendapati bahawa pelbagai pihak berkepentingan (kontraktor sisa pepejal, isi rumah, kedai barangan terpakai, pihak berkuasa tempatan, Badan Bukan Kerajaan (NGO), Organisasi Berasaskan Komuniti (CBO), institusi pendidikan, pengaut sisa pepejal) bertindak secara bebas dan tidak ada penyelarasan yang betul wujud dalam kalangan mereka dalam pengurusan sisa pepejal. Oleh itu, pihak berkuasa tempatan perlu bekerjasama dengan pihak-pihak berkepentingan lain untuk menyediakan pendidikan secara sistematik bagi mencapai peningkatan dalam peminimuman sisa pepejal. Berdasarkan hasil kajian, satu rangka kerja konsep Pengurusan Mapan Bersepadu Sisa Pepejal Isi Rumah (ISHWM) telah dibangunkan dengan mengambil kira peraturan semasa.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ABC	-	Action Plan for a Beautiful and Clean Malaysia
ANOVA	-	Analysis of Variance
BMA	-	Bangkok Metropolitan Administration
CBOs	-	Community-based Organisations
CPH	-	Census of Population and Housing
CPU	-	Central Processing Unit
EPA	-	Environmental Protection Agency
GHG	-	Greenhouse Gas
GOM	-	Government of Malaysia
GW	-	Gigawatt
HHW	-	Hazardous House Waste
IMWM	-	Integrated Municipal Waste Management
ISHWM	-	Integrated Sustainable Household Solid Waste Management
ISWM	-	Integrated Sustainable Solid Waste Management
JCPRA	-	Japanese Container and Package Recycling Association
JKP	-	Residents Committee
JMB	-	Building Management Committee
KPIs	-	Key Performance Indicators
LA	-	Local Authority
MBSA	-	Majlis Bandaraya Shah Alam
MHLG	-	Ministry of Housing and Local Government
MPP	-	Majlis Perwakilan Penduduk
MRF	-	Materials Recovery Facilities
MSW	-	Municipal Solid Waste

MUHLG	-	Ministry of Urban Well Being Housing and Local Government
MW	-	Megawatts
MWM	-	Master Plan on National Waste Minimisation
MWC	-	Municipal Waste Combusters
NGOs	-	Non-governmental Organisations
NSP	-	National Strategic Plan
OPP	-	Third Outline Perspective Plan
PBC	-	Perceived Behavioral Control
PCD	-	Public Cleansing Department
PET	-	Polyethylene Terephthalate
RMK8	-	Rancangan Malaysia Ke-8
RMK9	-	Rancangan Malaysia Ke-9
RMK10	-	Rancangan Malaysia Ke-10
RMK11	-	Rancangan Malaysia Ke-11
RRC	-	Resident Representative Council
SOP	-	Standard Operating Procedures
SATS	-	Shah Alam Transfer Station
SPSS	-	Statistical Package for the Social Sciences
SWM	-	Solid Waste Management
TPB	-	Theory of Planned Behavior
TRA	-	Theory of Reasoned Action
UMEP	-	Urban Waste Expertise Program
UNDP	-	United Nations Development Programme
UN-Habitat	-	United Nations Human Settlements Programme
US	-	United States
UWEP	-	Urban Waste Expertise Program
3Rs	-	Reduce, Reuse and Recycling

LIST OF APPENDICES

CHAPTER 1

INTRODUCTION

1.1 Introduction

Urbanisation is a phenomenon caused by population increase that provides employment and economic opportunities to countries; nonetheless environmental, social and economic problems are also associated with the process. Solid waste management (SWM) is one of the major issues related to the existence of urban areas where large numbers of people congregate in a compact area in pursuit of livelihoods (Ahmed and Ali, 2004). The increase in development, population densities, and per capita waste generation in urbanised areas resulted to decrease in land available for waste disposal and the cost of establishing new landfill sites extremely high. Urban households generated more than twice as much solid waste as compared to rural residents (EASUR, 1999). Currently, municipal solid waste minimisation has many problems in developing countries, some developed countries struggled to manage the process, yet others are still finding it problematic.

Wastes are materials that are rejected or considered undesirable arising from human and animal activities. Waste can be categorised as solid or liquid. Solid waste is anything solid that is not used; such materials can be classified in terms of organic, paper, glass, plastics, metal, clothing/textiles, aluminium, rubber and others. Liquid waste is anything containing water that is unused (UNICEF, 2006). It also consists of hazardous and non-hazardous waste. In Malaysia the housing sector generates more solid waste (Saeed *et al.,* 2009) than the commercial, industrial, municipal, agriculture, and institutional sectors. Therefore, solid waste management

should be treated effectively, as failure to do so could have a disastrous effect on the environment and public health. Thus, the emergence of solid waste minimisation as a sector is particularly important for keeping cities healthy and comfortable and liveable places.

Many countries have major problems regarding the management of solid waste. Currently, in Asia, the waste generation rate is approximately 760,000 tons per day, and it is estimated that this will increase to about 1.8 million tons per day by 2025. Local governments in urban areas currently spend about US$25 billion on SWM per year and this is expected to increase to at least US$50 billion in 2025 (EASUR, 1999). This is only a conservative estimate of the expenditure; the true cost may be higher. Therefore, the government or local authorities should deal with waste quickly, efficiently, and progressively. If no action is taken to reduce the amount of solid waste, it will lead to other sanitary and health problems.

In recent years, SWM has attracted worldwide attention as waste generation has had increasing impacts on environmental and health services and waste management issues that are important for the sustainable development of a city. Thus, a SWM system should include elements to deal with waste generation, waste storage, waste collection, waste transfer and transportation, waste processing, and waste disposal in urban or development areas. This is because the health implications of poor SWM system can be destructive to the people exposed to unsanitary conditions and can be the cause of several diseases. Diseases such as cholera, typhoid, dysentery, and malaria are all related to poor waste management practices.

Minimisation of solid waste is one way of reducing waste generation. Waste minimisation is the process of reducing the amount of waste produced by a person, household or society. The waste minimisation hierarchy is fundamental to any waste minimisation methodology. There are several definitions of waste minimisation hierarchy. Waste minimisation hierarchy should have elements of reduction, reuse, recycling, treatment, and disposal. Each country attempts to minimise the amount of waste going to landfill because of environmental, health, and cost issues and limited land availability. Most developed countries have succeeded in using this method to

reduce waste. Developing countries are also in the process of adopting this measure. Therefore, this thesis focuses on urban household solid waste minimisation using the empirical case of the fastest growing city in Klang Valley, Shah Alam, in the state of Selangor, Malaysia.

1.2 Background of the Study

Many local authorities in developing countries recognise the difficulty in managing solid waste minimisation. However, rapid population growth coupled with the development of the city has made it difficult for them to manage waste minimisation (JICA, 1997; Choguill, 1996). The efforts of local authorities are habitually focused on solid waste pollution and improve health, but tend to overlook the elements of resource conservation and protection of the environment. Furthermore, solid waste minimisation, especially in infrastructures and treatment/processing, is a major problem facing developing countries. Solid waste minimisation in cities requires efficient management to reduce further the risks to the environment and to human health in order to make it more sustainable. In developing countries, the issues and risks related to SWM are more alarming than in developed countries (Zerbock, 2003). Some efforts have been made to address the problem of solid waste minimisation in several cities in developing countries, but most of these are at the early stage.

In the 21st century, the scenario of modern SWM, such as waste minimisation, services delivery systems, and public awareness, presents challenges for both environmental and urban planners (Yahaya, 2007). One of Malaysias targets for 'Vision 2020' is to enhance environmental protection from pollution and develop an integrated system of SWM. However, the Malaysian government has major challenges to achieve Vision 2020 in SWM. In 1998, Malaysia generated about 5.5 million tons of solid waste, a quarter of which was generated in Klang Valley, the most affluent area in Malaysia. Some urban areas in the country have already generated municipal solid waste levels as high as 1.44 kg per person per day (MHLG, 2012). This rate is expected to increase significantly as the Malaysian

economy grows in 2020; as such the Malaysian government needs to spend more towards achieving sustainable solid waste minimisation.

The main problem for local authorities across the world is related to the management of these wastes. Rapid population growth, increasing urbanisation, changing lifestyles, and improved economic conditions have increased the rate of both waste generation and composition. Along with these conditions, improving existing SWM systems, further outlines for waste management policies and strategies, and increasing public awareness exerts more pressure on the limited resources for all stakeholders in waste management (Mensah, 2006). The minimisation of household solid waste through recycling and treatment has been one of the most problematic and demanding environmental solutions in Malaysia. To recognise the potential of waste minimisation, the government of Malaysia needs to consider suitable options for policies, strategies, laws, regulations, frameworks, models, and programs with regard to financial-economic constraints, the existing situation, laws, facilities, and regulations, as well as institutional, environmental, socio-cultural, and technical issues.

Legally, SWM is an issue for the national government while the main agencies implementing waste management are the local authorities. Related agencies include the Departments of Environment, Town and Country Planning, Engineering, Urban Services, and Parks and Recreations. The Local Government Department in the Ministry of Housing and Local Government (MHLG) provides policy and technical guidance to local authorities. There are only a few Acts concerning SWM, specifically, the Local Government Act, 1976; Environmental Quality Act, 1974; Streets, Drainage, and Building Act, 1974; and Town and Country Planning Act, 1976. The National Strategic Plan for Solid Waste Management (NSP) was launched in 2005 while the Master Plan on National Waste Minimisation (MWM) and the National Solid Waste Management Policy was introduced in 2006. However, these plans failed to enhance and improve the existing SWM. Up to date, there is no comprehensive legislation on SWM in Malaysia.

Essentially, Malaysians are more focused on services for SWM, such as waste collection and waste transfer stations and lack awareness on solid waste minimisation. Though, this is caused by lack of infrastructure, inefficient institutional setup, and lack of initiative on solid waste minimisation activities by the government. To reduce the burden and improve management by the local government, the privatisation process was initiated in 1996 with the aim of achieving an integrated management system to improve environmental and health quality through recycling (3Rs) and solid waste minimisation of resources. The objective of waste minimisation is to achieve a national solid waste hierarchy towards 2020. The aim of the Malaysian solid waste hierarchy is to shrink the nation's solid waste generation through reduction, reuse, recycling, treatment, and disposal strategies. Many stakeholders are involved in the Malaysian waste minimisation strategy. They include the Ministry of Well Being, Housing, and Local Government (formally known as MHLG), National Solid Waste Management Department, Solid Waste and Public Cleansing Management Corporation, local authorities, concessionary companies, collectors and manufacturers, non-governmental organisations, private resident associations, education institutions, private household waste recycling, and scavengers. The important issue in solid waste minimisation is how to organise all the stakeholders to acquire the best results in each element of the SWM system. The most common economic benefits derived from solid waste minimisation are cost avoidance, recycling revenue, reduced raw material costs, reduced energy costs, increased sales, and increased productivity (Matthew, 2009).

MHLG (2009) official survey reported that people achieved scores of 100% regarding knowledge, attitudes, and behaviour on solid waste minimisation yet, the 3Rs are rarely practised. Malaysia launched the first official 3Rs strategies in 1988 with the Action Plan for a Beautiful and Clean Malaysia (ABC) with campaigns aimed to increase recycling activities but their percentage output on solid waste minimisation is very minimal. As noted previously, many factors contributed towards the failure of solid waste minimisation in Malaysia. The main factors include the country's lack of an efficient institutional framework, the lack of regulation, such as policies and strategies to promote the 3Rs, and the lack of infrastructure to encourage the use of recycling. A study by Rousta (2008) noted

that there is a need for such a system to be implemented within a society, training be given to show people how to separate their wastes, selection of the best technology for the treatment of wastes, and the control of environmental impact of waste. However, achieving this requires a complicated system.

Identifying the most important factor among these depends on how local governments improve their waste minimisation by learning from the success of other local governments and in-depth studies. The major focus is to gain an insight into the policies and strategies on waste minimisation. Another focus is household knowledge, attitudes, and behaviours regarding the service delivery system of solid waste minimisation and for stakeholders to be involved at the household level. Thus, the institutions concerned with SWM in Malaysia should develop an initiative to solve the problem and improve the strategies to achieve sustainable development in the country so that it matches the achievement of developed countries. Given the above background, this study aims to identify ways to improve solid waste minimisation.

Solid waste minimisation can provide an opportunity to regain some valuable materials, and reduce the amount of natural resources required to achieve sustainable development. If this can be achieved successfully, it can save fuel and money and reduce environmental degradation. The main task of this study is to examine the influence of household socio-demographic characteristics on solid waste minimisation and SWM system, to evaluate the roles of stakeholders in a SWM system, and to develop a framework for an Integrated Sustainable Household Solid Waste Management (ISHWM) system in the housing sector.

1.3 Problem Statement

SWM in Malaysia is becoming an important problem due to a number of factors: growth in population coupled with rapid urbanisation as well as changes in lifestyles with the use of more modern materials and disposable products (Hamid *et*

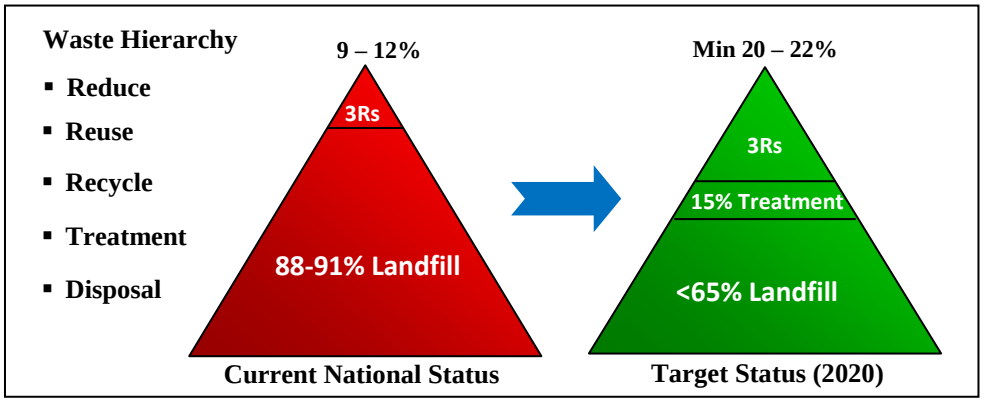
al., 2004; Agamuthu *et al*., 2009; Johari *et al*., 2014). As a developing country, Malaysia is also facing a significant increase in the amount of solid waste generated and has a major problem regarding solid waste minimisation (Hamid *et al.*, 2004; Agamuthu *et al*., 2009; Moh and Manaf, 2014).

The Solid Waste Management and Public Cleansing (Act 673) of 2007 had transferred the executive power of local authorities to the federal government for managing solid waste and public cleansing throughout Peninsular Malaysia. The National Solid Waste Management Department and the Solid Waste and Public Cleansing Management Corporation were established to manage all the issues related to SWM at the federal, state, and local levels. Unfortunately, several states, such as Selangor, Penang, Kelantan and Terengganu, have not implemented the act instead they use the local authorities legislation, because these states are under the control of the state administration and not the federal government.

According to Agamuthu *et al.* (2009), municipal solid waste generation in Malaysia has increased by more than 91% over the last 10 years, of which 65% was produced by the urban communities. In order to increase environmental awareness, the government has begun to encourage efforts in solid waste minimisation and is offering support to concessionary companies (Hezri, 2010; Hashim et al., 2012). Malaysia has launched the National Strategic Plan in 2004, the Waste Minimisation Master Plan (2006), and the National Policy on Solid Waste Management (2006) to increase solid waste minimisation but there are many barriers. These include lack of policies and strategies to promote solid waste minimisation and recycling systems, poor coordination between the stakeholders responsible for implementing solid waste minimisation systems, no details of legislation, and lack of indicators to measure solid waste minimisation including recycling systems in Malaysia. This may be due to lack or the vulnerability of the solid waste minimisation framework or model in the hierarchy of waste management systems.

To date, Malaysia has been generating between 0.45 to 1.44 kg of waste per capita per day, though this varies according to the economic status and lifestyle of each area. This corresponds to 17 million tons of domestic waste per day and it is

expected to increase to 31 million tons per day by the year 2020, while Malaysia's target for recycling is 22% of the total solid waste generated by the year 2020 (MHLG, 2013). In Figure 1.1 shows approximately 88-91% of the waste is collected and brought to final disposal in landfills and the remaining 9-12% was diverted to the 3Rs process (MHLG, 2013). Is it possible for the government to achieve the target of 10% solid waste minimisation within the next four years? While it seems doubtful, with thorough and meticulous research, this target can be achieved successfully.



Source: Ministry of Housing and Local Government (2015)

Figure 1.1: National waste minimisation – 3Rs target

By 2020, the government will have spent about RM 860 million annually on waste disposals and according to projections, this amount will increase to RM1.6 billion if measures are not taken to reduce the quantity of waste requiring disposal (MHLG, 2009). Hezri (2010) supports this statement, and states that Malaysia also faces the same financial problems as other developing countries. Hassan *et al.* (2000) found that out of the entire waste management budget, 70% was spent on waste collection.

Serious attention should be given to increasing solid waste minimisation. Many factors contribute towards the failure of solid waste minimisation but implementation of the 3Rs seems to produce the best results in most developing countries including Malaysia (Agamuthu *et al.*, 2009). The lack of policies and strategies to promote solid waste minimisation means the majority of Malaysians still do not realise the importance of the 3Rs; however, policy drives by institutions

could encourage public participation in this activity (Agamuthu *et al*., 2009). Hezri's research (2010) has shown that the public participation is still low, although since the late 1980s, the Malaysian government has held various public information campaigns to create awareness among the public. Similarly, the Ministry of Urban Well Being Housing and Local Government (MUHLG) has occasionally made efforts to increase solid waste minimisation in addition to raising public awareness of recycling to effect a change in the behaviour among the public towards recycling, the response to such campaigns has been insufficient. Furthermore, a survey revealed that 59% of respondents have some basic knowledge regarding solid waste minimisation and were slightly aware of this issue (Hassan *et al*., 2000), so why is there still lack of participation from them?

Consequently, a solid waste minimisation framework or model needs to be built for the overall factor in achieving this target. As stated previously, many stakeholders are involved in waste recycling: households, local authorities, scavengers, waste contractors, NGOs, CBOs, junk shops, private companies, educational institutions and end-users to mention a few. Therefore, collaboration and networking among the stakeholders will help to increase the efficiency of recycling and will open new avenues for recycling (Suresh and Vijayakumar, 2006; Chhun, 2012; Mugagga, 2006; Medina, 2005). Having this kind of partnership is very important in realising the role of recycling in SWM in Malaysia.

These policies and strategies focus only on SWM, especially in the services delivery system (Key Performance Indicators - KPIs). Currently, there is no strong policy, framework, and model on solid waste minimisation. Therefore, it is difficult to measure the level required to achieve the solid waste minimisation target in Malaysia. However, with four years to go before the target date of 2020, how is this goal of 22% waste minimisation feasible in Malaysia? Therefore, a comprehensive study needs to be carried out to determine the level of household solid waste minimisation and the strategies for improving it. Identification of the factors influencing the current household solid waste minimisation in the city is important, as it would help in developing a framework or model that would help policy makers,

the government, local authorities, and urban planners to facilitate the design of environmental policies, strategies, and programs in the future.

1.4 Research Questions

For the purpose of the study, based on the four key questions above, the following research questions are examined:

i. What are the household socio-demographic characteristics on psychological factors that influence solid waste minimisation in the city?
ii. What are the processes involved in household SWM system?
iii. What are the roles of stakeholders in household SWM system?
iv. What is the framework involved in achieving a solid waste minimisation policy and strategy?

1.5 Research Objectives

The aim of this study is to investigate urban household solid waste minimisation in Shah Alam City, Selangor, Malaysia; with a view to enhance understanding of the problems and key issues affecting urban solid waste minimisation; and to identify possible solutions to this problem. In line with this, the specific objectives that guided the study are as follows:

i. To examine the influence of households socio-demographic characteristics on psychological factors in solid waste minimisation;
ii. To examine the various stages that are involved in a household waste management system before waste gets to the recycling plant (services recycling systems);
iii. To identify the roles of stakeholders in household waste management system; and

iv. To develop a framework for an Integrated Sustainable Household Solid Waste Management system.

1.6 Research Hypotheses

In order to address these objectives, the research considers the following hypotheses:

H_0 There is no significant relationship between the demographic characteristics (gender, age, race, marital status, monthly income, occupation, education level, home ownership, and type of house) and knowledge and behaviour on SWM.

H_1 There are significant differences between the demographic characteristics and knowledge and behaviour on SWM.

1.7 Scope of the Study

The solid waste generated from urban areas, especially in Shah Alam City, increases proportionately with population growth, which is posing a serious threat to the SWM system. This makes a study to minimise solid waste in the Shah Alam city of Selangor indispensable. The best way of solving this problem is to make a detailed study of the current SWM system and to identify and understand the causes or failure of solid waste minimisation strategy. Shah Alam City of Selangor is very wide and the study area is focused only on the Shah Alam Central district, comprising sections 1 to 24 (see Figure 1.2). This area was chosen because it is an area with systematic approaches to economic development planning. A random sample of houses in this district included all three categories, namely, low-cost, medium cost, and high cost housing.

Currently there is no study to investigate the effects of socio-demographic level of households on solid waste minimisation. The objective of this study is to gather valuable household feedback on solid waste minimisation, which will lead to the quantification and composition of the waste, influence of household socio-demographics on knowledge and behaviour towards solid waste minimisation. The study also assessed the SWM systems, and the role of stakeholders in SWM. This will therefore help to identify problems and future prospects regarding solid waste minimisation.

Solid waste minimisation involves three major agents: consumer/generator, processor, and re-manufacturer. This study conducts surveys among consumer/generator (households) based on socio-demographic characteristics, knowledge, participation, and action from the LA. In addition, interviews were held with stakeholders (local authority, waste collectors, scavengers, etc.). Apart from the survey, observation and interviews were also needed to identify the solid waste minimisation process from the origin (household) until the destination (recycling plant). This enables researchers to understand and examine the current situation and problems.

1.8 Significance of Study

A study on urban household solid waste minimisation is necessary considering the important role it plays in human development. This was seen in the concept of integrated solid waste minimisation in the housing sector. In this regard, this research examines the socio-demographic characteristics of households that influence their psychological factors regarding solid waste minimisation. To achieve this, it is crucial to assist the relevant parties, especially the government/local authority, to increase the level of participation, or to engage the public in solid waste minimisation.

This finding will guide the formulation of the operational SWM system and help policy makers to facilitate their decisions. It will also provide a clear understanding of the nature of the problem and will identify and evaluate strategies that can be adopted by the LA and related parties to solve the problem. These improvements will also lead to a better waste management system in the future and create awareness among the community about SWM system. This study also aims to provide new insights into the role of planners in waste management. This study also shows existing patterns of interaction between stakeholders. It will identify areas of conflicts and find ways to resolve them through the implementation of an action plan.

Consequently, this study explores the strategies and appropriate recommendations to improve solid waste minimisation, in order to achieve sustainability in cities. The household solid waste minimisation framework derived from the findings will be useful for researchers, policy-makers, practitioners, and institutions interested in the field of solid waste minimisation in Shah Alam City and in other cities in developing countries.

1.9 Study Area

Shah Alam City is the capital of the State of Selangor Darul Ehsan, Malaysia. Shah Alam City is currently the fastest growing district in Selangor. The city was inaugurated in 2000 and is the seventh largest city in Malaysia. Shah Alam is about 20 km west of the capital city, Kuala Lumpur. The total population is 646, 890 people in 2010 and this figure further increased to 700 000 people in 2014 after several developments had taken place (MBSA, 2012). In the 1980s, Shah Alam was known as the 'Industrial City' because of the formation of many industrial areas, which have various factories and multinational corporations providing employment and economic opportunities, especially for Selangor and Malaysia. Shah Alam City is presently divided into north zone, central zone, and south zone (see Figure 1.2). North zone and south zone still have many areas that have not been developed. North zone consists of 18 sections, whereas central zone is part of the essential

because it is the most developed area in Shah Alam. It consists of Section 1 to Section 24. South zone consists of 12 sections, including Sections 25, 30, 31, and 32.

1.9.1 Rationale of Shah Alam as the Study Area

The selection of Shah Alam City of Selangor as a study area was due to several factors. In year 2005, the state was identified as one of the most developed and fastest growing after Kuala Lumpur and Pulau Pinang, as shown in Figure 1.3. Shah Alam City grew and developed as a centre of industrial park, employment, places of interest for tourists, and educational institutions. Selangor also contributed to the largest share of Gross Domestic Product at 23.00% in 2005 with the manufacturing and services sectors accounted for the largest proportion of 53.5%. Between 2001 and 2005, Selangor had 1,517 manufacturing projects with a total of 105,422 employees with RM29, 245.3 million of capital investment, making it the most advanced and developed state in Malaysia (the Ninth Malaysia Plan, 2010).

Furthermore, Shah Alam is one of the largest cities in Klang-Langat Valley. This indicates that the urbanisation process is rapidly concentrated around the developed areas of the Klang-Langat Valley (Zikri *et al.*, 2010). Table 1.2 shows the rates of urbanisation of states in Malaysia. Selangor has the highest urbanisation level of 89.1%, followed by Pulau Pinang (80.0%), Melaka (73.4%), and Johor (67.7%) in 2010. This rapid urbanisation process and increase in population is the main contributing factor for household solid waste generation.

Table 1.1: Population and urbanisation in Malaysia

State	Population (Million)		Urbanisation rate (%)	
	2000	2010	2000	2010
Selangor	**4.19**	**5.31**	**87.7**	**89.1**
Johor	2.76	3.46	64.8	67.7
Perak	2.09	2.44	59.1	59.3
Kedah	1.67	2.04	39.1	40.3
P.Pinang	1.33	1.60	79.7	80.0
Kelantan	1.36	1.67	33.5	33.3
Pahang	1.30	1.57	42.0	44.6
Terengganu	0.90	1.12	49.4	50.3
N.Sembilan	0.87	1.03	54.9	57.4
Melaka	0.65	0.79	67.5	73.4
Perlis	0.21	0.25	34.0	35.9
Malaysia	23.49	28.96	62.0	63.8

Source: Ninth Malaysia Plan (2010)

According to Beigl *et al.* (2003), and Mavropoulos (2011), the amount of solid waste generated is largely determined by two main factors: first, the population in any given area, and second, its consumption patterns. Both factors are controlled by individuals monthly income or lifestyle. In 2004, the highest mean monthly income was recorded in Selangor at RM 5,175.00, followed by Kuala Lumpur (RM 5,011), Pulau Pinang (RM 3,531), and Johor (RM 3,076) (Ninth Malaysia Plan, 2010). High-income states produce almost twice as much solid waste per capita when compared to low-income countries. Generally, the greater the economic prosperity and the higher the percentage of urban population, the greater will be the amount of solid waste generated (EASUR, 1999).

Household income is the most significant factor affecting the quantity of solid waste generation (Richardson and Havlicek, 1974). Similarly, Visvanathan and Trankler (2003) reported that in a household with rich socioeconomic conditions, daily waste generation rates are generally higher than those in lower socioeconomic households. Medina (2002) also reported that a positive correlation tends to exist between a community's income and the amount of solid waste generated. Thus, wealthy individuals produce more solid waste than those of low income. The quantity of waste generated in Selangor has been increasing every year because of the increase in the population and urban urbanisation. Table 1.2 shows that Selangor

generated the highest amount of solid waste. According to MHLG (2010), Selangor state showed the greatest increase as the quantity of municipal solid waste increased from 2,827 tons per day in 2000 up to 3,904 tons per day in 2009.

Source: http://selangorforyou.blogspot.com

Figure 1.2: Map of Shah Alam City, Selangor

Table 1.2: Solid waste generation in Peninsular Malaysia

States	Solid waste generated (tons/ day)					
	2000	**2002**	**2004**	**2006**	**2008**	**2009**
Johor	1915	2,093	2255	2430	2578	2655
Kedah	1324	1,447	1559	1680	1782	1835
Kelantan	1034	1,131	1213	1302	1382	1423
Melaka	515	563	605	650	690	711
N. Sembilan	757	828	890	957	1015	1046
Pahang	957	1,046	1125	1210	1284	1322
Perak	1527	1,669	1795	1930	2048	2109
Perlis	196	214	230	247	262	270
Pulau Pinang	1088	1,189	1278	1375	1458	1502
Selangor	**2827**	**3,090**	**3322**	**3573**	**3790**	**3904**
Terengganu	883	965	1038	1116	1184	1219
Kuala Lumpur	2520	2,755	3025	3322	3525	3631
Malaysia	15,587	21 452	23073	24969	26489	27284

Source: Compiled from Ministry of Housing and Local Government (2010); Agamuthu and Hamid (2011); Johari *et al*. (2014).

Thus, Selangor generated the highest amount of solid waste among of all states in Malaysia, and Shah Alam City is an urban area and is actively developing. Sections 1 – 14 are the Central Zone in Shah Alam and represent a residential area within the city. These areas have various facilities and a variety of housing types (low, medium, high cost) and so were considered a suitable area for study to achieve the objectives of the research. Therefore, study of the integrated SWM using a solid waste minimisation approach in Shah Alam City has become a major challenge to achieving the national target by 2020, especially given the need to increase solid waste minimisation.

1.10 Thesis Organisation

To gain insight into how to develop the most efficient urban household solid waste minimisation, this thesis is organised into eight chapters, starting with the introduction (Chapter 1). The literature review is provided in Chapter 2; it provides an exploration of the terminologies of solid waste, integrated SWM, best practice of SWM, and factors influencing integrated SWM. In Chapter 3, a conceptual

framework is presented of the concept that guides this study. Chapter 4 discusses the details of the methodological approach used in the research, including the research methods and data analysis methods. The chapter also explains the methodology used in achieving the objectives of the study, including the design of the survey instruments and the validation, sampling, and statistical techniques. Chapter 5 presents the results regarding the influence of socio-demographic characteristics and psychological factors on solid waste minimisation.

Chapter 6 analyses solid waste minimisation system in the study area followed by a discussion on the institutional analysis of SWM in the municipalities, which is presented in Chapter 7. Chapter 7 also analyses the role of stakeholders in a solid waste minimisation system and identifies the weaknesses of their role compared to the best practice in other countries. The final chapter, Chapter 8, presents the result from the research questions, objectives, and research findings based on empirical survey and interview discussions. The findings of the study, recommendations, and discussions, the contribution of the study to the body of knowledge and to policy making by the government are also discussed and explained. In addition, a conceptual framework for household integrated SWM using a solid waste minimisation approach is developed. This framework captures all the various factors that are likely to increase solid waste minimisation in the city (see Figure 1.3).

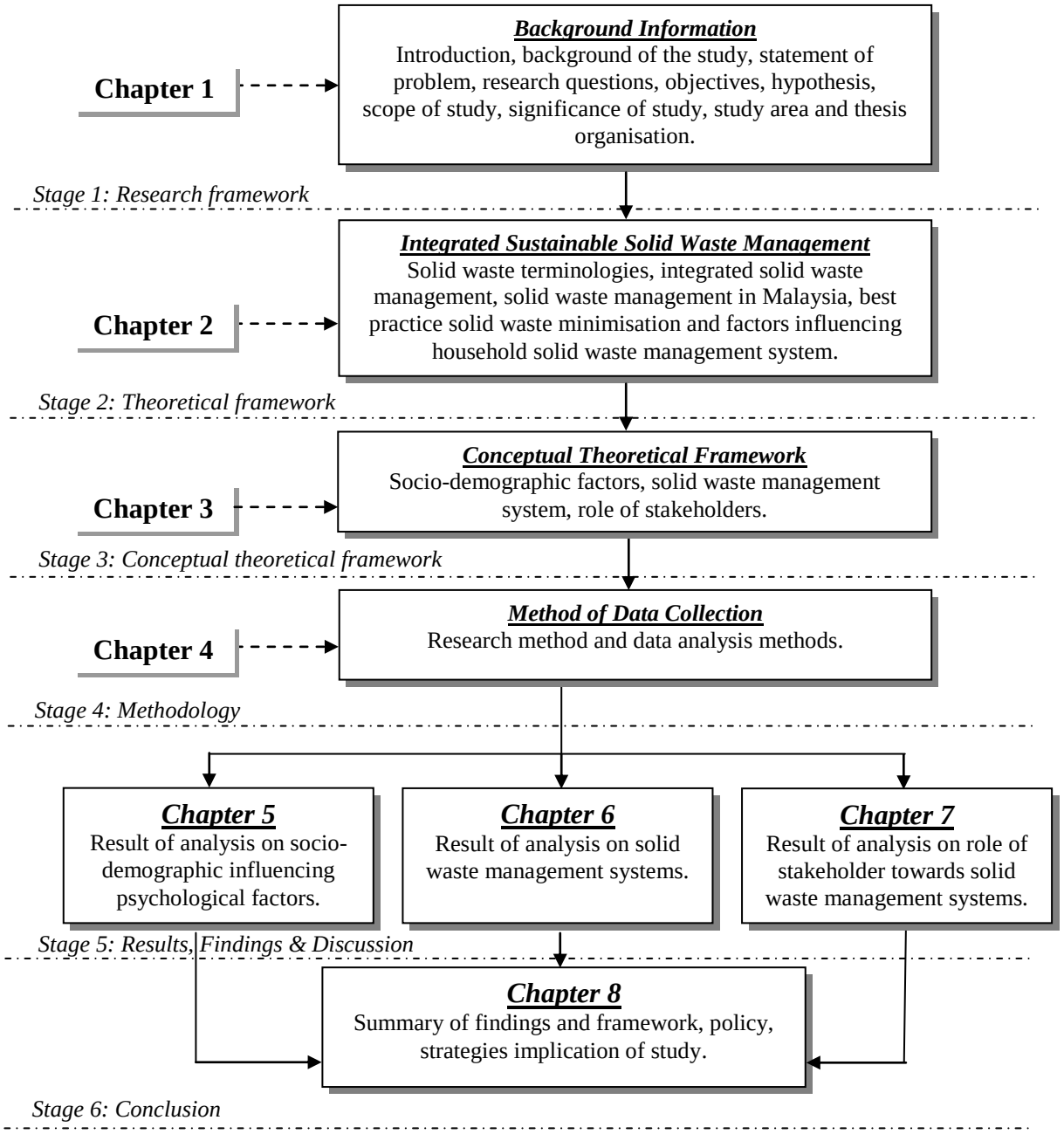


Figure 1.3: Flow chart of research

REFERENCES

Aadland, D. and Arthur, J.C. (1999). Household Valuation of Curbside Recycling, *Journal of Environmental Planning and Management*, 42(6), 781-799.

Abdelnaser, O., Mahmood, A. and Aziz, H.A. (2006). Study on Households Attitude toward Solid Waste Recycling in Perlis State. In Omran, A., Mahmood, A., Aziz, A.H., and Robinson, G.M., Investigating Households Attitude towards Recycling of Solid Wastes in Malaysia: A Case Study, *International Journal Research*, 3(2), 275-288.

Adenso, D. and Gonzalez, P. (2005). Influence of Distance on the Motivation and Frequency of Household Recycling, *Journal of Waste Management*, 25(1), 15-23.

Agamuthu, P. (2001). Municipal Waste Management. In Trevor, M., Letchner, A., and Daniel, A., Vallero (Ed.) *WASTE: A Handbook for Management*, Ed. Elsevier.

Agamuthu, P. and Hamid, F.S. (2007). Recent Issues in Solid Waste Management in Malaysia: The Solid Waste Bill, *Journal of Material Cycles Waste Management,* 11, 96–103.

Agamuthu, P. and Hamid, F.S. (2007). Sustainable Management of Wet Market Waste, *Proceedings of the 2007 International Conference on Sustainable Solid Waste Management*, September 5 – 7, 2007. Chennai, India. 2007. 239-243.

Agamuthu, P. and Hamid, F.S. (2011). Challenges and Issues in Moving towards Sustainable Landfilling in a Transitory Country-Malaysia, *Journal of Waste Management and Resources*, 29(1), 13-19.

Agamuthu, P., Hamid, F.S. and Kahlil, K. (2009). Evolution of Solid Waste Management in Malaysia: Impacts and Implications of the Solid Waste. *Journal of Material Cycles Waste Management*, 11, 96-103.

Agwu, M.O. (2012). Issues And Challenges of Solid Waste Management Practices in Portharcourt City, Nigeria- A Behavioural Perspective, *American Journal of Social and Management Sciences*, 3(2), 83-92.

Ahmadi, A., Ibrahim, D. and Marc, A.A. (2012). Exergo-Environmental Analysis of an Integrated Organic Rankine Cycle for Trigeneration, *Journal of Rosen Energy Conversion and Management*, 64, 447–453.

Ahmadi, M., Nikoo, B., Ali, A.B. and Pari, T. (2013). Sludge Characterization of a Petrochemical Wastewater Treatment, Iranian, *Journal of Health Sciences,* 1(2), 10-18.

Ahmed, S.A. and Ali, M. (2004). Partnerships for Solid Waste Management in Developing Countries: Linking Theories to Realities. *Journal of Habitat International,* 28, 467-479.

Ahorlu, W. K. (2006). *Managing Waste in Africa – A Look at Institutional Constraints, Hazardous Waste and Public-Private Partnership Options.* Retrieved on February 11, 2012, from http://www.unitar.org.

Ajit, P.S.R. (2010). *Knowledge, Attitude and Practice on Disposal of Sharp Waste, used for Home Management of Type-2 Diabetes Mellitus in New Delhi, India*, Doctor Philosophy, Chulalongkorn University.

Ajzen, I. (1991). The Theory of Planned Behaviour, *Journal of Organisational Behaviour and Human Decision Processes,* 50(2), 179-211.

Ajzen, I. and Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior*. Englewood-Cliffs, NJ: Prentice-Hall.

Albert, P.A., Jamaica, A., Deriquito, P. and Meliza, A.F. (2001). *Ecological Solid Waste Management Act: Environmental Protection through Proper Solid Waste Practices,* Retrieved on February 14, 2012, from http://ap.fftc.agnet.org.

Alexis, M.T. and James, R.M. (2009). Sustainable Recycling of Municipal Solid Waste in Developing Countries, *Journal of Waste Management,* 29(2), 915–923.

Ali, M., Cotton, A. and Snel, M. (1999). *The Challenges Ahead. Solid Waste Management in the Next Millennium.* Retrieved on April 21, 2012, from http://www.sanicon.net.

Al-Khatib, I.A. and Arafat, H.A. (2010). A Review of Residential Solid Waste Management in the Occupied Palestinian Territory: A Window for Improvement? *Journal of Waste Management,* 28, 481–488.

Anand, P.B. (2000). Co-operation and the Urban Environment: An Exploration, *Journal of Development Studies*, 36(5), 30-58.

Ancheta, A. and Arlen, A. (2004). Strengthening Partnership Between a Local Government Unit and an NGO towards Ecological Solid Waste Management, A case study, Res Socialist, *Journal of UST Social Research Center,* 2(1-2), 308-318.

Andrew, M.K., Stuart, C.B., Winnie, I. and Chris, A.M. (2006). Reducing Waste: Repair, Recondition, Remanufacture or Recycle? *Journal of Sustainable Development,* 4, 257–267.

Anonymous, (2000). Waste management and recycling in Bangladesh, *Journal of Aborjona O. Paribesh,* 4, 22–23.

Anschutz, J., Ijgosse, J. and Scheinberg, A. (2004). *Integrated Solid Waste Management to Practice Using the ISWM Assessment Methodology*. Netherlands: WASTE.

Anthony, S.F. (2010). *The 3Rs and Poverty Reduction in Developing Countries*, Institute for Global Environmental Strategies (IGES). Japan: Ministry of the Environment.

Antonia, V.H., Timothy, E.L., Jennifer, L.E. and Daniel, M.K. (2001). Renewable Energy: A Viable Choice, *Journal of Environment,* 43(10), 9-20.

Aprilia, A. and Tezuka, T. (2011). *GHG Emissions Estimation from Household Solid Waste Management in Jakarta, Indonesia.* Proceeding of the 4th International Conference on Sustainable Energy and Environment.

Aquino, J.T. (1999). MSW Collection: A History. *Journal of Waste Age,* 30(2), 24-31.

Armah, N.A. (1993). Waste Management. The Future of Our Cities. *Proceedings of the Ghana Academy of Arts and Sciences,* January 28, 2013, Kumasi, Ghana, 78–83.

Arnold, V.K. and Justine, A. (2001). *Integrated Sustainable Waste Management - the Concept,* United States: John Wiley and Sons, Inc.

Arthur, D. (1999). *Waste Management in the Next Millennium Future Directions,* Environment Resources Management, Hong Kong.

Asim, M., Batool, S.A. and Chaudhry, M. N. (2012). Scavengers and Their Role in the Recycling of Waste in South-western Lahore. *Journal of Resources, Conservation and Recycling*, 58, 152–162.

Assaad, R. (1996). Formalizing the Informal? The Transformation of Cairo's Refuse Collection System, *Journal of Planning Education and Research*, 16, 115-126.

Atienza, R. and Vella, A. (2008). A Breakthrough in Solid Waste Management through Participation and Community Mobilisation: The Experience of Los Baños, Laguna, Philippines. *Journal of Asian Review of Public Administration,* 1(2), 82-98.

Attahi, K. (1999). Managing the Monster: Urban Waste and Governance in Africa; by Onibokun, *Journal of International Development Research Center,* 3, 11-48.

Aung, M. and Arias, M.L. (2006). Management of Environmental Quality. *Journal of International*, 17 (740), 34-52.

Awopetu, M.S., Awopetu, R.G., Sample, E.D., Olufiropo, A.O.C., Awokola, S.F., Booth, C.A. and Hammond, F.N., (2014). Municipal Solid Waste Management and the Role of Waste-Pickers in Nigeria, *Journal of International Journal Educational Research*, 2, 1–12.

Barr, S. (2003). Strategies for Sustainability: Citizens and Responsible Environmental Behaviour, *Journal of AREA*, 35(3), 227–240.

Barr, S. (2007). Factors Influencing Environmental Attitudes and Behaviours, A UK Case Study of Household Waste Management, *Journal of Environment and Behaviour*, 39(4), 435- 473.

Barr, S., Ford, N.J. and Gilg, A.W. (2003). Attitudes towards Recycling Household Waste in Exeter, Devon: Quantitative and Qualitative Approaches, *Journal of Local Environment*, 8(4), 407-421.

Barr, S., Gilg, A.W. and Ford, N.J. (2001). Differences between Household Waste Reduction, Reuse and Recycling Behaviour: A Study of Reported Behaviours, Intentions and Explanatory Variables, *Journal of Environmental and Waste Management*, 4(2), 69-82.

Beck, M. and Walters, C. (1997). *The Secret Life of Compost: A "How-To" and "Why" Guide to Composting-Lawn, Garden, Feedlot or Farm. Acres, USA.* United States: Austin, TX.

Beigl, P., Wassermann, G., Schneider, F. and Salhofer, S. (2003). Municipal Waste Generation Trends in European Countries and Cities, *Proceedings SARDINIA-Ninth International Waste Management and Landfill Symposium,* 6-10 October, 2003. Cagliari, Italy. pp 109-110.

Bernardo, E.C. (2008). Solid Waste Management Practices of Households in Manila, Philippines. *Journal of ANNALS of the New York Academic of Science*, 45, 1140:420-424.

Bernstein, J. (2004). Tool Kit on Social Assessment and Public Participation in Municipal Solid Waste Management. Retrieved on May 26, 2012, from http://www.worldbank.org.

Betsill, M. and Corell, E. (2001). NGO Influence in International Environmental Negotiations: A Framework for Analysis, *Journal of Global Environment Politic*, 1, 65–85.

Bolaane, B. (2005). Constraints to Organised Recycling in Developing Countries: A case study of Gaborone, Botswana. In Kassim, S. H. (2012). The Importance of Recycling in Solid Waste Management, *Journal of Macromolecular Symposia*, 320(1), 43–50.

Bratt, C. (1999). The Impact of Norms and Assumed Consequences on Recycling Behaviours, *Journal of Environmental Behaviour*, 31(5), 630-656.

Brunner, P.H. and Ernst, W.R. (1986). Alternative Methods for the Analysis of Municipal Solid Waste, *Journal of Waste Management and Research*, 4, 147-160.

Bryman, A. (1988). *Quantity and Quality in Social Research. London, United Kingdom*, Unwin Hyman: Sage Publications.

Budhiarta, I., Chamhuri, S. and Hassan, B. (2012). Current Status of Municipal Solid Waste Generation in Malaysia, *International Journal on Advanced Science Engineering Information Technology*, 2(2), 16-21.

Burke J.R. and Onwuegbuzie, A.J. (2004). Mixed Methods Research: A Research Paradigm whose Time Has Come, *Journal of Educational Researcher*, 33(7), 14-26.

Burnley, S.J. (2007). A Review of Municipal Solid Waste Composition in the United Kingdom, *Journal of Waste Management*, 27(10), 1274-1285.

Callan, S.J. and Thomas, M.J. (2001). Economies of Scale and Scope: A cost analysis of Municipal Solid Waste Services, *Journal of Land Economics*, 77(3), 548-560.

Chan, K. (1998). Mass Communication and Pro-Environmental Behaviour: Waste Recycling in Hong Kong, *Journal of Environmental Management*, 52, 317-325.

Chen T., Chen, L. and Xin, W.W. (2008). Factors Influencing Municipal Solid Waste Generation in China: A multiple Statistical Analysis Study, *Journal of Waste Management and Research,* 29(4), 371-378.

Chenayah, R.C., Agamuthu, P. and Takeda, E. (2007). Multicriteria Modelling on Recycling of Municipal Solid Waste in Subang Jaya, Malaysian, *Journal of Science,* 26, 1-3.

Cheung, S. F., Chan, D. K. S. and Wong, Z. S. Y. (1999). Reexamining the Theory of Planned Behavior in Understanding Wastepaper Recycling, *Journal of Environment and Behavior,* 31, 587–612.

Chhun, G. (2012). *Handling Solid and Hazardous Waste by Waste Pickers: A Case Study of Phnom Penh, Cambodia*. Master. Arizona State University, United States.

CHINTAN, Environmental Research and Action Group. (2005). *Informal-Formal Creating Opportunities for The Informal Waste Recycling Sector in Asia.* Retrieved on December, 27, 2012, from http://www.chintan-india.org.

Choguil, C.L. (1996). Ten Steps to Sustainable Infrastructure. *Journal of Habitat International*, 20(3), 389-404.

Christensen, T.H. (2011). *Solid Waste Technology and Management*, United Kingdom: West Sussex: A. John Wiley and Sons.

Chu, P.U. and Chiu, J.F. (2013). Factors Influencing Household Waste Recycling Behavior: Test of an Integrated Model, *Journal of Applied Social Psychology*, 33, 604–626.

Chua, K.H., Mat Sahid, E.J. and Leong, Y.P. (2011). Sustainable municipal solid waste management and GHG Abatement in Malaysia, *Journal of Green and Energy Management,* 1, 26-28.

Clarke, M.J., Read, A.D. and Phillips. P.S. (1999). Integrated Waste Management Planning and Decision-Making in New York City, *Journal of Resources, Conservation and Recycling,* 26, 125–141.

Clement, M. (2009). A Basic Accounting of Variation in Municipal Solid Waste Generation at the Country Level in Texas, 2006, *Journal of Rural Social,* 74(3), 412-29.

Coad, A. (2000). Development Cooperation: Aid Going to Waste – and Worse. In Arnold, V. K., Justine, A. (Ed). (2001). *Integrated Sustainable Waste Management - the Concept.* United States: John Wiley and Sons, Inc.

Cohen, L., Manion, L. and Morrison, K. (2000). *Research Methods in Education*. London: Routledge Falmer.

Cointreau, S. (2001). *Declaration of Principles for Sustainable and Integrated Solid Waste Management.* Retrieved on May 03, 2012, from http://web.worldbank.org.

Cooper, J. (1999). Solid Waste Management in Copenhagen. In Atkinson, A. (Ed) (1999). *The Challenges of Environmental Management in Urban Areas.* Aldershot and Vermont: Ashgate.

Cooper J. (2012). *Global Recycling and Waste Trafficking*. Presented at IFAT ENTSORGA 2012, the World's Leading Trade Fair. Retrieved on March 7, 2012, from www.eesc.europa.eu.

CSIR (Council for Scientic and Industrial Research) (2011). *Municipal Waste Management - Good Practices,* CSIR: Pretoria.

Dahab, D.J., Gentry, J.W. and Su, W. (1995). New Way to Reach Non-Recyclers: An Extension of the Model of Reasoned Action to Recycling Behaviour, *Journal of Advances in Consumer Research*, 22, 251-256.

Dahlen, L., Aberg, H., Lagerkvist, A. and Berg, P. (2009). Inconsistent Pathways of Household Waste, *Journal of Waste Management*, 29(6), 1798–1806.

Dahlen, L. and Lagerkvist, A. (2010). Pay as you throw Strengths and Weaknesses of Weight-Based Billing in Household Waste Collection Systems in Sweden, *Journal of Waste Management,* 30, 23-31.

Damodaran, N., Robinson, A., Dadid, E. and Kalas-Adams, N. (2003). Solid Waste Generation and Management in India; *Proceedings of Sardinia*. October 6 – 10, 2003, Cagliari: Italy.

Davis, G. and Wolski, M. (2007). Towards Sustainable Management of Electronic Wastes: Policy Development and Implementation – A Case Study from the Tertiary Education Sector. *Proceedings on Solid Waste Technology and Management,* March 18th-21st, 2007, Philadelphia: US.

Davies, A. (2007). A Wasted Opportunity? Civil Society and Waste Management in Ireland, *Journal of Environmental Politics,* 16, 52-72.

Dawda, B. (2010*). Solid Waste Management System in the Kanifing Municipal Council Area, the Gambia.* Master, Universiti Putra Malaysia.

Department of Energy, Philippine. (2015). *Solid Waste Management for Local Government Units Program,* Retrieved on February 11, 2012, from http/:climatechange.denr.gov.

Department of Environment, Bangkok, Thailand. (2010). *Environmental Requirements: A Guide for Investors*, P.U. (A) 433, Pollution Control Department.

Department of Environment, Bangkok, Thailand. (2010). *Thailand State of Pollution Report* Pollution Control Department.

Department of Environment, Bangkok, Thailand. (2010). *Solid Waste Management in Bangkok*, Pollution Control Department.

Department of Statistics Malaysia. (2000). *Population and Housing Census of Malaysia 2000: Population Distribution and Basic Demographic Characteristics*, Department of Statistics Malaysia.

Department of Statistics Malaysia. (2011). *Population and Housing Census of Malaysia 2011: Preliminary Count Report,* Department of Statistics Malaysia.

Department of Town and Regional Planning. (MBSA). (2013). *Laporan Tahunan 2012*. Majlis Bandaraya Shah Alam (MBSA).

Department of Urban Services. (MBSA). (2014). *Laporan Tahunan 2014*. Majlis Bandaraya Shah Alam (MBSA).

Diamantopoulos, A., Bodo, B. Schlegelmilch, Rudolf, R., Sinkovics and Greg, M.B. (2003). Can Socio-Demographics Still Play a Role in Profiling Green Consumers? A Review of the Evidence and an Empirical Investigation, *Journal of Business Research,* 56(6), 465–80.

DOPC (Department of Public Cleaning, Bangkok, Thailand). (2000). *Waste Management,* Bangkok Metropolis Administration.

DOPC (Department of Public Cleaning, Bangkok, Thailand). (2005). *A Review of Green Public Procurement Practices in Thailand*, Bangkok Metropolis Administration.

EASUR (Urban Development Sector Unit East Asia and Pacific Region) (1999). *What a Waste: Solid Waste Management in Asia and Pacific Region.* United States of America: World Bank.

Ebreo, A. and Vining J. (2001). How Similar are Recycling and Waste Reduction? Future Orientation and Reasons for Reducing Waste as Predictors of Self-Reported Behaviour. *Journal of Environment and Behaviour*, 33, 424–48.

Englehardt, J. (1994). Identifying Promising Hazardous Waste Reduction Technologies, *Journal of Environmental Engineering*, 120(3), 513-526.

EPA (Environmental Protection Agency). (1995). *Decision-Makers Guide to Solid Waste Management.* Retrieved on June 17, 2012, from http:/nepis.epa.gov.

EPA (Environmental Protection Agency). (1998). *Illegal Dumping Prevention Guidebook*. Retrieved on June 17, 2012, fromhttp://cfpub.epa.gov.

EPA (Environmental Protection Agency). (2002). *National Emissions Inventory Data & Documentation, Technology Transfer Network Clearing House for Inventories & Emissions Factors*. United States: Environmental Protection Agency.

EPA (Environmental Protection Agency). (2008). *Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2008*. United States: Environmental Protection Agency.

EPA (Environmental Protection Agency). (2010). *Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2010*, United States: Environmental Protection Agency.

EPA (Environmental Protection Agency). (2014). *Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2013*, United States: Environmental Protection Agency.

EPA (Environment Protection Agency). (2014). *Climate Change Indicators in the United States, 2014,* Retrieved on June 17, 2012, from http://www.epa.

EPU (Economic Planning Unit). (1996). *Seventh Malaysia Plan 1996–2000;* Percetakan Nasional Malaysia Berhad,

EPU (Economic Planning Unit). (2000). *Eight Malaysia Plan 2001–2005*; Percetakan Nasional Malaysia Berhad.

EPU (Economic Planning Unit). (2001). *The Third Outline Perspective Plan 2001 – 2010*, Percetakan Nasional Malaysia Berhad.

EPU (Economic Planning Unit). (2004). *Ninth Malaysia Plan (2005–2010).* Malaysia: Percetakan Nasional Malaysia Berhad.

EPU (Economic Planning Unit). (2005). *Malaysia's Economic Development Plan (2006 – 2010),* Percetakan Nasional Malaysia Berhad.

EPU (Economic Planning Unit). (2007). *The Malaysian Economy in Figures 2007*, Percetakan Nasional Malaysia Berhad.

EPU (Economic Planning Unit). (2009). *Tenth Malaysia Plan (2010–2015);* Percetakan Nasional Malaysia Berhad.

EPU (Economic Planning Unit). (2014) *Eleventh Malaysia Plan (2015–2020);* Percetakan Nasional Malaysia Berhad.

Eunice, E. and Muchane. G. (2006). *Solid Waste Management in Nairobi City and the Town of Limuru, in Kenya*, Master, Polytechnic University.

Evison, T. and Read, A.D. (2001). Local Authority Recycling and Waste Awareness Publicity/ Promotion, *Journal of Resource Conservation Recycling*, 32, 275-292.

Ezeah, C. (2010). *Analysis of Barriers and Success Factors Affecting the Adoption Of Sustainable Management of Municipal Solid Waste in Abuja, Nigeria*, Doctor Philosophy, University of Wolverhampton.

Ezeah, C. and Roberts, C.L. (2012). Analysis of Barriers and Success Factors Affecting the Adoption of Sustainable Management of Municipal Solid Waste in Nigeria. *Journal of Environmental Management,* 103, 9-14.

Ezeah, C., Jak, A., Fazakerley, L. and Clive, L.R. (2013). Emerging Trends in Informal Sector Recycling in Developing and Transition Countries, *Journal of Waste Management*, 33, 2509–2519.

Ezeah, C., Roberts, C.L., Watkin, G.D, Philips, P.S. and Odunfa, A. (2009). Analysis of Barriers Affecting the Adoption on a Sustainable Municipal Solid Waste Management System in Nigeria. In the *Proceedings of the 24th International Conference on Solid Waste Technology and Management,* March 12-15, 2009. Widener University, Philadelphia, USA.

Ezeigwe, C. (1995). Appropriate Solid Waste Disposal Methods for Developing Countries, *Journal of NSE Technical Transactions*, 32(2), 33–34.

Firuza, B.M. and Khan, A.I. (2011). Environmental Management Plan for Shah Alam Solid Waste Transfer Station, Malaysia, *Malaysian Journal of Science,* 30(1), 56-61.

Fishbein, J. and Ajzen, I. (1975). *Belief, Attitude, Intention and Behaviour: an Introduction to Theory and Research*, Retrieved on March 23, 2012, from http://people.umass.edu.

Folz, D.H. (1991*).* Recycling Program Design, Management and Participation: A National Survey of Municipal Experience, *Journal of Public Administration Review*, 51(3), 222-231.

Folz, D. H. and Hazlett, J. M. (1991). Public Participation and Recycling Performance: Explaining Program Success, *Journal of Public Administration Review*, 51(6), 526-532.

Friedemann, M.L. and Smith, A.A. (1997). A Triangulation Approach to Testing a Family Instrument, *Western Journal of Nursing Research,* 19(3), 364-378.

Gamba, R.J. and Oskamp, S. (1994). Factors Influencing Community Residents' Participation in Commingled Curbside Recycling Programs. *Journal of Environment and Behavior,* 26, 587–612.

Gbekor, A. (2003). *Domestic Waste Management. Ghana Environmental Protection Agency (EPA),* Retrieved on February 11, 2012, from http://www.ghanaweb.com.

Gilles, V.K. (2013). *Manila's Waste Scavengers are integrated into The Recycling Chain,* Retrieved on February 14, 2012, from www.the-guardianweekly.com.

Gilpin, A. (1996). *Dictionary of Environmental and Sustainable Development,* Sussex: John Willey: and sons.

Godfrey, L., Scott, D., Difford, M. and Trois, C. (2012). Part 1: The role of waste data in building knowledge: The South African waste information system. *Journal of Waste Management,* 2(11), 2154-2162.

Goh, B.L. (2007). *Malaysia, in Solid waste Management: Issues and Challenges in Asia.* Environmental Management Centre, Mumbai, India: Asian Productivity Organization.

Gordon, C. and Yang, C. (1995). Urban Waste Recycling in Taiwan, Resources, *Journal of Conservation and Recycling,* 13, 15–26.

Gottlieb, R. (1990). A waste management crisis. *In Solid Waste Management: Planning Issues and Opportunities, Washington, D.C*. The American Planning Association.

Guerrero, L., Maas, G. and Hogland, W. (2013). Solid Waste Management Challenges for Cities in Developing Countries, *Journal of Waste Management,* 33(1), 220–232.

Gunsilius, E. (2010). *Role of the Informal Sector in Solid Waste Management and Enabling Conditions for its Integration.* Workshop on the Informal Sector, Geneva. September 21, 2010.

Gutberlet, J. (2010). Waste, Poverty and Recycling, *Journal of Waste Management,* 30(2), 171-173.

Gutberlet, J. and Baeder, M. (2008). Informal Recycling and Occupational Health in Santo Andre, Brazil, *International Journal of Environmental Health Research,* 18(1), 1–15.

Hamid, F.S., Simon, C. and Agamuthu, P. (2004). Municipal Solid Waste Management in Malaysia – Possibility of improvement?. *Malaysian Journal of Science,* 23(2), 61-70.

Hanrahan, D., Srivastuva, S. and Ramakrishna, A.S. (2006). *Improving Management of Municipal Solid Waste in India: Overview and Challenges.* Retrieve on May 26, 2012, from http://wwwwds.worldbank.org.

Hansmann, R., Bernasconi, P., Smieszek, T., Loukopoulos, P. and Scholz, R.W. (2006). Justifications and Self-Organization as Determinants of Recycling Behaviour: The Case of Used Batteries, *Journal of Resources, Conservation and Recycling,* 47, 65-71.

Hashim, K.S., Mohamed, A.H. and Redza, H.Z. (2012). Developing a Waste Minimisation Awareness Model through Community Based Movement: A Case Study of the I I U M Green Team. *Malaysia Journal of Society and Space,* 5, 112 - 123.

Hassan, M.N., Abdul, R.R., Chong, T.L., Zakaria, Z. and Awang, M. (2000). Waste Recycling in Malaysia: Problems and Prospects. *Journal of Waste Management and Research,* 18, 320-328.

Hassan, M.N., Chong, T.L, Rahman, M., Salleh, M.N., Zakaria, Z. and Awang, M. (2001). Solid Waste Management in Southeast Asian Countries with Special

Attention to Malaysia. *Proceedings on Eighth International Waste Management and Landfill Symposium.* Ogos 14, 2001. Cagliari, Italy. 56-71.

Hetz, J.G., Paul, J.C., Alfaro, E. and Lemke, A. (2011). The Informal Recycling Market in Ormoc City, Philippines: Evaluation of Options to Enhance Resources Recovery and to Reduce GHG Emissions. In Proceedings of the International SWM Conference on Moving towards Sustainable Resource Management, Hong Kong, May 03, 2011.

Hezri, A.A. (2010). Toward 3R-Based Waste Management: Policy Change in Japan, Malaysia and the Philippines, *Workshop on 3R Policies for Southeast and East Asia.* November 11, 2010. Jakarta: ERIA, 274-290.

Honnold, J.A. (1981). Predictors of Public Environmental Concern in the 1970s. In Mann, D. E., editor. *Environmental policy formation — the impacts of values, ideology and standards*, Lexington: Lexington.

Hopper, J.R. and Nielsen, J.N. (1991). Recycling as Altruistic Behaviour. Normative and Behavioural Strategies to Expand Participation in a Community Recycling Program, *Journal of Environment and Behaviour,* 23(2), 195-220.

Hordijk, M. (2000). *The Role of Local Initiatives in Community-based Urban Environmental Management, A Case Study from Lima, Peru. Amsterdam*, Retrieved on January 06, 2013, from http://dare.uva.nl/document/11661.

Humphrey, C.R., Bord, R.J., Hammond, M.M. and Mann, S. (1977). Attitudes and Conditions for Cooperation in a Paper Recycling Program. *Journal of Environment and Behaviour*, 9, 107-124.

Hunt, G.E. and Schecter, R.N. (1988). Minimisation of Hazardous-Waste Generation, In Freeman, H. M. (1988), *Standard Handbook of Hazardous Waste Treatment and Disposal*, McGraw Hill, New York.

Ibiebele, D.D. (1986). *Rapid Method for Estimating Solid Waste Generation Rate in Developing Countries*, Journal of Waste Management and Research, 4, 361-365.

Ison, R. (2005). *Traditions of Understanding: Language, Dialogue and Experience.* In Keen, M., Brown, V., and Dyball, R. (eds.), *Social Learning in Environmental Management towards a Sustainable Future.* London: Earthscan.

ISWA, World Congress (2009). *The Zero Waste System - An Enduring Solution for the Waste Management in Romania?* Conferences & Workshops, Lisbon.

Ittiravivongs, I. (2012). Household Waste Recycling Behaviour in Thailand: The Role of Responsibility, International Proceedings of Chemical, Biological and Environmental Engineering, April 12, 2012; 21-26.

Jacobs, H., Bailey, J. and Crews, J. (1984). Development and Analysis of A Community-based Recourse Recovery Program, *Journal of Applied Behaviour Analysis,* 17, 127-145.

JICA (Japan International Cooperation Agency) (1997). *The Study on Solid Waste Management for Dar es Salaam City*. Kokusai Kogejo Co. Ltd.

JICA (Japan International Cooperation Agency) (2004). *The Study on National Waste Minimisation in Malaysia, JICA's Cooperation for the Cooperation for the 3Rs*, Global Environment Department.

JICA (Japan International Cooperation Agency) (2006). *The Study on National Waste Minimisation in Malaysia*, Global Environment Department.

JICA (Japan International Cooperation Agency) (2006). *Japan's Cooperation on Solid Waste Management in the Pacific Region*, Global Environment Department, JICA.

Jick, T.D. (1979). Mixing Qualitative and Quantitative Methods: Triangulation in Action, *Journal of Administrative Science Quarterly,* 24(4), 602-611.

Johannessen, Lars, M. and G. Boyer. (1999). *Observations of Solid Waste Landfills in Developing Countries: Africa, Asia, and Latin America.* World Bank, Washington, D.C.

Johari, A., Alkali, H., Hashim, H., Ahmed, S. and Mat, R. (2014). Municipal Solid Waste Management and Potential Revenue from Recycling in Malaysia. *Journal of Modern Applied Science*, 8(4), 29-36.

John, P. (2005). *Waste Management Practices, Municipal, Hazardous and Industrial,* Taylor and Francis, CRC Press.

John, S. (1992). *Does the Solid Waste Management Hierarchy, Make Sense? A Technical, Economic and Environmental Justification for the Priority of Source Reduction and Recycling,* Solid Waste Management Project Working Paper, Yale University.

John, A.S., John, P. and Keith, H. (1996). *The Management of a Student Project*, Third Edition, Gower: Publishing, Aldershot, England.

Joseph, K. (2006). Stakeholder Participation in Municipal Solid Waste Management, *Journal of Habitat International*, 30, 863-871.

Julianne, M.M. (2008). *Governance and Community Participation in Municipal Solid Waste Management, Case of Arusha and Dar Es Salaam Tanzania*, Masters, Aalborg University.

Kaewsawang, S. (2002). *An Evaluation of Knowledge Attitude and Behaviour of Household and Commercial Sectors to Solid Waste Select in Salaya Municipality Nakhornpathom Province,* Master, Mahidol University.

Kamaruddin, S.M. (2010). Factors that Influence Urban Secondary Students' Recycling Participation in Selangor, Malaysia, *International Journal of Learning*, 17(6), 215-230.

Kamaruddin, M.A., Yusoff, M.S., Abdul Aziz, H. and Yung-Tse, H. (2013). Sustainable treatment of landfill Leachate, *Journal of Applied Water Science*, 5, 113–126.

Kankyosho, D. (2003). *International Environment Law Committee Newsletter*, Retrieved on May 03, 2012, from http://apps.americanbar.org.

Kaseva, M.E., and Gupta, S.K. (1996). An Environmentally Friendly Income Generating Activity towards Sustainable Solid Waste Management. Case study Dar es Salaam City, Tanzania. *Journal of Resources Conservation & Recycling*, 17, 299-310.

Kassim, S.M. (2006). *Sustainability of Private Sector in Solid Waste Collection- A case of Dar es Salaam Tanzania.* Doctor Philosophy, Loughborough University, UK.

Kassim, S.M. and Ali, M. (2006). Solid Waste Collection by the Private Sector Households Perspective-Findings from a study in Dar es Salaam City, Tanzania, *Journal of Habitat International*, 30(4), 769-780.

Kathirvale, S., Muh Yunus, M.N., Sopian, K. and Samsuddin, A.H. (2003), Energy Potential from Solid Waste in Malaysia, *Journal of Renewable Energy,* 29, 59-567.

Kennedy, C., Steinberger, J., Gasson, B., Hansen, Y., Hillman, T., Havránek, M., Pataki, D., Phdungsilp, A., Ramaswami, A. and Mendez, G.V. (2009). Greenhouse Gas Emissions from Global Cities, *Journal of Environmental Science and Technology*, 43 (19), 7297-7302.

Kgathi, D.L. and Bolaane, B. (2001). Instruments for sustainable solid waste management in Botswana, *Journal of Waste Management and Research,* 19, 342-353.

Kim, P. (1998). *Community-Based Waste Management for Environmental Management and Income Generation in Low-income areas. A case Study of Navolgi, Kenya, Mazingia.* Institute Nairobi, Kenya. Published by City Farmer, Canadas Officer of Urban Agriculture.

Kironde, J.M.L. (2007). The Regulatory Framework, Unplanned Development and Urban Poverty: Findings from Dar Es Salaam, Tanzania, *Journal of Land Use Policy,* 23(4), 460–472.

Kizito, N. (2008). Solid Waste Manager Kinondoni Municipal Council, In Julianne, M. M. (2008). *Governance and Community Participation in Municipal Solid Waste Management, Case of Arusha and Dar Es Salaam Tanzania,* Master's Thesis, Aalborg University, Denmark.

Klundert. A.V. (1995). *Integrated Sustainable Waste Management: The Selection of Appropriate Technologies and The Design of Sustainable Systems is not (Only) A Technical Issue,* Retrieved on January 06, 2013, from: http://www.worldbank.org.

Klundert, A.V. and Anschutz, J. (2001). Integrated Sustainable Waste Management - The Concept. Tools for Decision-makers. In Anne Scheinberg (Ed). *Integrated Sustainable Waste Management - the Concept*, Nieuwehaven 201, WASTE.

Klundert, A.V. and Lardinois, I. (1995). *Community And Private (Formal and Informal) Sector Involvement In Municipal Solid Waste Management In Developing Countries*, Retrieved on Ogos 09, 2012, from http://inswa.or.id.

Knussen, C. and Yule, F. (2008), I'm not in the Habit of Recycling': The role of Habitual Behaviour in the Disposal of Household Waste. *Journal of Environment and Behavior, 40, 683-702.*

Knussen, C., Yule, F., MacKenzie, J. and Wells, M. (2004). An Analysis of Intentions to Recycle Household Waste: The Roles of Past Behavior, Perceived Habit, and Perceived Lack of Facilities, *Journal of Environmental Psychology,* 24, 237-246.

Kojima, M. and Etsuyo, M. (2013). *International Trade in Recyclable and Hazardous Waste in Asia,* Edward Elagar.

Kojima, M. and Rebullida, M.L.G. (2008). *Stakeholders Relationships in Recycling Systems: Experiences in the Philippines and Japan*. Retrieved on March 05, 2014, from http://d-arch.ide.go.jp.

Kollmuss, A. and Agyeman, J. (2002). Mind the Gap: Why do People Act Environmentally and What Are the Barriers to Pro-Environmental Behaviour? *Journal of Environment Education Research,* 8(3), 239-260.

Kreith, F. and Tchobanoglous, G. (1994). Handbook of solid waste management. United States: McGraw Hill Education.

Kreith, F. and Tchobanoglous, G. (2002). *Handbook of Solid Waste Management.* United States: McGraw Hill Education.

Kurz, T., Linden, M. and Sheehy, N. (2007). Attitudinal and Community Influences Research: A review of four Recent Studies, *Journal of Strategies Management,* 20, 195-204.

Lansana, F. (1992). Distinguishing Potential Recyclers: From No-Recyclers: A Basis for Developing Recycling Strategies, *Journal of Education,* 23, 16-23.

Lee, A.S., Liebenau, J. and DeGross, J.I. (1997). *Information Systems and Qualitative Research,* Chapman and Hall, London.

Likert, R. (1967). *The Method of Constructing an attitude Scale*. New York: John Wiley and Sons.

Lima, M.L. (1996). *Individual and Social Determinants of Attitudes towards the Construction of Waste Incinerator: Two Case Studies,* The Centre for Environmental Strategy, University of Surrey, Guildford.

Lober, D.J. (1996). Municipal Solid Waste Policy and Public Participation in Household Source Reduction, *Journal of Waste Management and Research,* 14(2), 125-143.

Lohani, B.N. (1984). Recycling Potential of Solid Waste in Asia through Organized Scavenging, *Journal of Conservation and Recycling,* 7(2-4), 181-190.

Lohri, C.R., Camenzind, E.J. and Zurbrügg, C. (2014). Financial Sustainability in Municipal Solid Waste Management--Costs and Revenues in Bahir Dar, Ethiopia, *Journal of Waste Management,* 34(2), 542–52.

Lohse, U. (2003). *Improving Municipal Finance – A Global Challenge*. Habitat Debate. Innovative Urban Financing. UN-HABITAT.

Luyben, Y. and Bailey, L. (1979). Newspaper recycling: The effects of rewards and proximity of containers, *Journal of Environment and Behaviour*, 11, 539-557.

Mahamid, I. and Thawaba S. (2010). Multi Criteria and Landfill Site Selection Using GIS: A Case Study from Palestine. *The Open Environmental Engineering Journal*, 3, 33-41.

Makmattayan, R. (2003). *Factors Related to Solid Waste Sorting Behaviour among Housewives in Bang Sue District, Bangkok*, Master's Thesis, Mahidol University.

Maldonado, L. (2006). Reduction and Recycling of Urban Waste at Higher Education Institutions: A Case Study, *Revista Ingeniería*, 10(1), 59–68.

Martinez, M.D. and Scicchitano, M.J. (1998). Who Listens to Trash Talk? Education and Public Media Effects on Recycling Behaviour, *Journal of Social Science Quarterly*, 79(2), 287-300.

Mathers, N., Nick, P. and Amanda, H. (1998). Using Interviewa in Research Project Trend Focus in Research and Development in Primary Health Care, Inrent Focus, United Kingdom.

Matter, A., Dietschi, M. and Zurbruegg, C. (2013*).* Improving the informal recycling sector through segregation of waste in the household. The case of Dhaka Bangladesh, *Journal of Habitat International*, 38, 150-156.

Matthew, J.F. (2009). *A Systems Approach Solid Waste. Analysis & Minimization*, McGraw-Hill Companies, Inc.

Matthew, J.F. (2009). The Solid Waste Analysis and Minimization Research Project-a Collaborative Economic Stimulus and Environmental Protection Initiative in Northwest Ohio, USA. *Journal of Solid Waste Technology and Management*, 35, 121-132.

Mavropoulos, A. (2011). Globalization, Megacities and Waste Management, *ISWA 2011 World Congress,* Daegu, Korea.

MBSA (Majlis Bandaraya Shah Alam). (2012). Laporan Tahunan 2012. MBSA: Jabatan Koporat.

MBSA (Majlis Bandaraya Shah Alam). (2014). Laporan Tahunan 2014. MBSA: Jabatan Koporat.

McDonald, S. and Ball, R. (1998). Public Participation in Plastics Recycling Schemes, *Journal of Resources, Conservation and Recycling,* 22, 123-141.

Mc. Michael, L. (2000). *The Urban Environment and Health in a World of Increasing Globalisation,* Bull World Health Org, 2000.

Medina, M. (2001). Scavenging in America: Back to the Future? *Journal of Resources, Conservation and Recycling*, 31, 229-240.

Medina, M. (2002). *Globalization, Development, and Municipal Solid Waste Management in Third World Cities.* Retrieved on May 02, 2013, fromhttp://www.gdnet.org.

Medina, M. (2005). *Waste Picker Cooperatives in Developing Countries*. Missouri Department of Natural Resources. In Jhabvala, R., Kanbur, R. and Richards, C. (Ed) *Membership-based Organizations of the Poor* (pp. 105-121). New York: Routledge.

Medina, M. (2007*). The World's Scavengers: Salvaging for Sustainable Consumption and Production.* Lanham: AltaMira Press.

Medina, M. (2011). *Recovering Resources, Creating Opportunities: Integrating the Informal Sector into Solid Waste Management.* Retrieved on May 02, 2013, from http://www.giz.

Medina, M., Williams, I.D. and Clark, M. (2006). Social, Cultural and Structural Influences on Household Waste Recycling: A Case Study, *Journal of Resources, Conservation and Recycling*, 48, 357-395.

Mensah, A. (2006*).* People and Their Waste in an Emergency Context: The Case of Monrovia, Liberia. *Journal of Habitat International*, 30(4), 54-68.

MHLG (Ministry of Housing and Local Government, Malaysia). (1988). *Action Plan for Beautiful and Clean Malaysia (ABC Plan),* Malaysia: National Solid Waste Management Department.

MHLG (Ministry of Housing and Local Government, Malaysia). (2000). *National Vision Policy Plan (2001-2010).* Malaysia: National Solid Waste Management Department.

MHLG (Ministry of Housing and Local Government, Malaysia). (2005). *National Strategic Plan for Solid Waste Management.* Malaysia: National Solid Waste Management Department.

MHLG (Ministry of Housing and Local Government Malaysia). (2006). *The National Solid Waste Management Policy*. Malaysia: National Solid Waste Management Department.

MHLG (Ministry of Housing and Local Government Malaysia). (2006). *Master Plan of National Waste Minimization in Malaysia*. Malaysia: National Solid Waste Management Department and the Japanese International Cooperation Agency.

MHLG (Ministry of Housing and Local Government, Malaysia) (Act 2007). (2007). Solid Waste and Public Cleasing Management Act: National Solid Waste Management Department.

MHLG (Ministry of Housing and Local Government) (2009). *Waste Generation Statistics*. Malaysia: National Solid Waste Management Department.

MHLG (Ministry of Housing and Local Government) (2010). *Strategic Solid Waste Management: The Malaysian Approach*. Malaysia: National Solid Waste Management Department.

MHLG (Ministry of Housing and Local Government) (2012). *Solid Waste Management in Malaysia: The Way Forward.* Malaysia: National Solid Waste Management Department.

MHLG (Ministry of Housing and Local Government Malaysia) (2013). *National Strategic Plan for Solid Waste Management*.

MHLG (Ministry of Housing and Local Government Malaysia) (2015). *Statistics on Average of Solid Waste Generation in Each State.* Malaysia: National Solid Waste Management Department.

Milik S.M. (2010). *Solid Waste Management in Egypt during the Last Decade in Light of the Partnership between the Egyptian Government and the Private Sector.* Retrieved on February 14, 20123, from http://dar.aucegypt.edu.

Minghua, Z., Xiumin, F., Rovetta, A., Qichang, H., Vicentini, F., Bingkai, L., Giusti, A. and Yi, L. (2009). Municipal Solid Waste Management in Pudong New Area, China. *Journal of Waste Management*, 29, 1227-1233.

Ministry of Economy, Trade and Industry, Japan, (2003). *Japanese Container and Packaging Recycling Law*, Retrieved on June 02, 2013, from http://www.meti.go.

Ministry of the Environment Japan, (2005). *Environmental Accounting Guidelines 2005*, Retrieved on June 02, 2013, from http://www.meti.go.

Ministry of the Environment, Japan. (2012). *Recycling Policy*, Retrieved on June 02, 2013, from http://www.meti.go.

Ministry of Natural Resources and Environment, Thailand. (2014). *United Nations Environment Programme Environment for Development*, Retrieved on March 14, 2015, from http://www.unep.org.

MMDA (Metropolitan Manila Development Authority). (2003). *Ecological Solid Waste Management System in the Philippines Project*. Handout. MMDA.

Moghadam, M.R.A., Mokhtarani, N. and Mokhtarani, B. (2009). Municipal solid waste management in Rasht City. Iran, *Journal of Waste Management,* 29, 485–489.

Moh, Y.C. and Manaf, L.A. (2014). Overview of Household Solid Waste Recycling Policy Status and Challenges in Malaysia. *Journal of Resources, Conservation and Recycling,* 82, 50-61.

Mugagga, F. (2006). *The Public Private Sector Approach to Municipal Solid Waste Management: How Does it Work in Makindye Division, Kampala District ganda.* Master. Development Studies Thesis, Trondheim, Norway.

Muller, M. and Hoffman, L. (2001). Community Partnerships in Integrated Sustainable Waste Management, In: Scheinberg, A. (Ed). *Integrated Sustainable Waste Management: a Set of Five Tools for Decision-makers.* The Netherlands: WASTE.

Murad, M.W. and Siwar, C. (2007). Knowledge, Attitude and Behaviour of the Urban Poor Concerning Solid Waste Management: A Case Study, Journal of Applied Sciences, 7(22), 3356-3367.

Murad, M.W. and Siwar, C. (2007). Waste Management and Recycling Practices of the Urban Poor: a Case Study in Kuala Lumpur city, Malaysia. *Journal of Waste Management & Research* 25, 3–13.

Mutangga, J.A. and Haron, S.A. (2012). Factors Predicting Recycling Behaviour among Malaysian, *Southeast Asia Psychology Journal,* 1, 68-80.

Muttamara, S., Visvanathan, C. and Alwis, K. U. (1994). Solid Waste Recycling and Reuse in Bangkok, *Journal of Waste Management and Research,* 12, 51–63.

Nasir, A.A. (2007). *Institutionalising Solid Waste Management in Malaysia:* Department of National Solid Waste Management; Ministry of Housing and Local Government Malaysia,

Nasir, M.H. (2002). Solid Waste Management in Malaysia: Can We Charter Future Strategies? In Jamaluddin, M. J., Mohd Jailani, M. N., Kamaruzzaman, S., Ismail, S. and Abdul Hadi H. S. *Proceedings of Realising Agenda 21:*

International Conference on Environmental Management: Ten years after Rio. Universiti Kebangsaan Malaysia (UKM), Bangi. 22–23 Oct. 65–81.

Nasir, M.H. (2004). Institutionalizing Solid Waste Management in Malaysia: In Jayashree, S., Marthandan, G., Malarvizhi, C., and Indrakaran, K. (2012), *Solid Waste Management in Malaysia – A Move towards Sustainability,* Retrieved on April 12, 2012, from http://creativecommons.org.

Nasir, M.H, Rakmi, A.R., Chong, T.C., Zulina, Z. and Muhammad, A. (2000). Waste Recycling in Malaysia: Problems and Prospects, *Journal of Waste Management Research,* 18, 320-328.

Navarro and Rhea, A. (2003). *A Systems Approach on Solid Waste Management in Metro Manila, Philippines*. Retrieved on July 29, 2012, from http://www.lumes. lu.se/database/alumni.

NEA (National Environment Agency). (2016). *Waste Statistics and Overall Recycling,* Environment Building Singapore, www.nea.gov.sg.

Neuman, K. (1986). Personal Values and Commitment to Energy Conservation, *Journal of Environment and Behaviour,* 18, 53-74.

Neuman, K. (1986). Personal Values and Commitment to Energy Conservation, *Journal of Environment and Behaviour,* 18, 53-74.

Nickolas, J. T. and Charles, M. (2014). *Energy and Economic Value of Municipal Solid Waste (MSW), Including Non-Recycled Plastics (NRP), Currently Landfilled in the Fifty States*, Columbia University, Retrieved on May 09, 2015, from http://www.americanchemistry.com.

Nigbur, D., Lyons, E. and Uzzell, D. (2010). Attitudes, norms, identity and environmental behavior: using an expanded theory of planned behavior to predict participation in a curbside recycling programme. *British Journal of Social Psychology*, 49 (Pt 2), 259–284.

Nixon, H. and Saphores, J.M. (2009). Information and the Decision to Recycle: Results from A Survey Of US Households, *Journal of Environment Planning Management,* 52, 257–277.

Noori R., Abdoli M.A., Ghasrodashti A.A. and Jalili Ghazizade M. (2008). Prediction of Municipal Solid Waste Generation with Combination of Support Vector Machine and Principal Component Analysis: A Case Study of Mashhad. *Journal of Environment Program Sustainable Energy.* 28, 249.

NREL (National Renewable Energy Laboratory). (1998). *Status of Avian Research at the National Renewable Energy Laboratory*, Karin C. Sinclair. Retrieved on June 10, 2013, from: http://www.nrel.gov.

NSO (National Statistical Office). (2007). *Solid Waste Management Program of Lapu-Lapu City, Office of the City Mayor Solid Waste Management Board,* Retrieved on August 09, 2012, from http://www.mysmartschools.ph/web/

NSO (National Statistics Office). (2011). *Census of Population and Housing Reports 2010*, Philippine Statistics Authority, Retrieved on June 10, 2013, from http://web0.psa.gov.

NSO (National Statistical Office). (2014). *Statistical Year Book Thailand 2013,* Thailand (in Thai), Retrieved on May 26, 2012, from http://web.nso.go.

Nyachhyon, B.L. (2004). *Zero Waste Approach-A New culture for A New Century*, WASTE.

Ogawa, H. (2002). *Sustainable Solid Waste Management in Developing Countries*, WHO Western Pacific Regional Environmental Health Centre (EHC), Kuala Lumpur, Malaysia, Retrieved on August 09, 2012, from: http://www.gdrc.org.

Ohakwe, J., Nnorom, I. and Iwueze, I. (2011). Survey of attitude of residents towards environmental deterioration in Nigeria and factors influencing their willingness to participate in reducing the trend: A case study of waste management. *Journal of Applied Sciences Research*, 6(2), 154-164.

Ojeda-Benítez, S., Armijo, D.V.C.Y. and Ramírez-Barreto, M.E. (2000). The Potential for Recycling Household Waste: A Case Study from Mexicali, Mexico, *Journal of Environment and Urbanisation,* 12(2), 163–173.

Ojeda-Benitez, S., Armijo, D.V.C.Y. and Ramirez-Barreto, M.E. (2002). Characterisation and Quantification of Household Solid Wastes in a Mexican City, *Journal of Resources, Conservation and Recycling,* 39, 211-222.

Ojeda-Benitez, S., Armijo D.V.C.Y. and Ramirez-Barreto, M.E. (2003). Characterisation and Quantification of Household Solid Wastes in a Mexican City. *Journal of Resources Conservation and Recycling,* 39, 211-222.

Olli, E., Grendstad, G. and Wollebaek, D. (2001). Correlates of Environmental Behaviors: Bringing Back Social Context. *Journal of Environment and Behaviour,* 33(2), 181-208.

Omran, A., Mahmood, A., Aziz, A.H. and Robinson, G.M. (2008). Investigating Households Attitude towards Recycling of Solid Wastes in Malaysia: A Case Study. *International Journal Research*, 3(2), 275-288.

Omran, A., Mahmood, A., Abdul A.H. and Robinson, G.M. (2009). Investigating Households' Attitude toward Recycling of Solid Waste in Malaysia: A Case Study. *Journal of Environmental Research*, 3(2), 275-288.

Oreg, S. and Katz-Gerro, T. (2006). Predicting Pro-environmental Behaviour Cross-Nationally: Values, The Theory of Planned Behaviour, and Value-Belief-Norm Theory, *Journal of Environment and Behaviour*, 38, 462-83.

Oskamp, S., Harrington, M.J, Edwards, T.C, Sherwood, D.L, Okuda, S.M. and Swanson, D.C. (1991). Factors Influencing Household Recycling Behaviour. *Journal of Environment and Behaviour*, 23(4), 494–519.

Pacione, M. (2005). *Urban Geography. A Global Perspective*. 2nd. Edition. London and New York, Routledge, Taylor & Francis Group.

Pappu, A., Saxena, M. and Asokar, S.R. (2007). Solid Waste Generation in India and Their Recycling Potential in Building Materials. *Journal of Building and Environment*, 42(6), 2311–2324.

Perrin, D. and Barton, J. (2001). Issues Associated with Transforming Household Attitudes and Opinions into Material Recovery: A Review of Two Kerbside Recycling Schemes, *Journal of Resources, Conservation and Recycling*, 33, 61-74.

Peters, T. A. (1998). Purification of Landfill Leachate with Reverse Osmosis and Nanofiltration. In Angelo, B., *Handbook of Membrane Reactors,* (pp. 125-138) Woodhead.

Pfammatter, R. and Schertenleib, R. (1996). *Non- Governmental Refuse Collection in Low Income Urban Areas. Lessons Learned from Selected Schemes in Asia, Africa and Latin America.* Retrieved on May, 26, 2012, from http://www.eawag.ch.

Pichtel, J. (2005). *Waste Management Practices: Municipal, Hazardous and Industria*. Florida: Boca Raton, Taylor & Francis/CRS Press.

Pole, C.J. and Lampard, R. (2002). *Practical Social Investigation: Qualitative and Quantitative Methods in Social Research.* Retrieved on May 26, 2012, from http://ro.uow.edu.au/commpapers/46.

Poornima, C. (2012). *Integrating Waste Pickers into Municipal Solid Waste Management in Pune, India*, Retrieved on November 03, 2013, from http://www.inclusivecities.org/

Pretz, T., Nikou, N., and Kontos, C. (2001). The effects of the European Directives 94/62 and 99/31 to the waste management sector in Greece. Proceedings of Environmental Science and Technology (CEST), 5-7 September, 2011, Athens, Greece.

Price, J.L. and Joseph, J.B. (2000). Demand Management - A Basis for Waste Policy: A Critical Review of the Applicability of the Waste Hierarchy in Terms of Achieving Sustainable Waste Management. *Journal of Sustainable Development*, 8(2), 96–105.

Qu, X., Li, Z., Xie, X., Sui, Y., Yang, L. and Chen, Y. (2009). Survey of Composition and Generation Rate of Household Wastes in Beijing, China. *Journal of Waste Management,* 29, 2618-2624.

Raudsepp, M. (2001). Some Socio-Demographic and Socio-Psychological Predictors of Environmentalism. *Journal of TRAMES*, 5(4), 355-367.

Ravindra, J., Nitin, M. and Bhalachandra, D. (2014). Site Suitability for Urban Solid Waste Disposal Using Geo-informatics: A Case Study of Pune Municipal Corporation, Maharashtra, India, *Journal of Advanced Remote Sensing and GIS*, 3(1), 769-783.

Read, A.D, Phillips, P.S. and Murphy, A. (1997). English County Councils and Their Agenda for Waste Minimisation, *Journal of Resource Conservation Recycle*, 7(20), 277–94.

Reid, D.H., Luyben, P.D., Rawers, R.J. and Balley, J.S. (1976). Newspaper Recycling Behavior: The Effects of Prompting and Proximity of Containers. *Journal of Environment and Behaviour,* 8, 471-481.

Richardson, R.A. and Havlicek, J. (1974). An Analysis of Seasonal Household Waste Generation. *Journal of Agricultural Economics*, 06(02), 143-153.

Robson, C. (1993). *Real World Research: A Resource for Social Scientists and Practitioner Researchers.* Blackwell: Oxford. Willey.

Rodrigues, M. (2009). *Sorting Plants: Characteriztion and Assessment of National Situational*, Master thesis, Nova University of Lisbon, Lisbon.

Romanos, M. and Chifos, C. (1996). Contributions of the Urban Informal to Environmental Management. *Journal of Regional Development Dialogue*, 17(1), 122-155.

Rothwell, S.A. and Walker, W. (1995). *Development of Community Based Social Marketing Approaches for Achieving Sustainability*. Ontario: Pinecrest Queensway.

Rousta, K. (2008). *Municipality Solid Waste Management An evaluation on the Borås System*. Master. University Collage of Boras, Sweden.

Saeed, M.O., Hassan, M.N. and Mujeebu, M.A. (2009). Assessment of Municipal Solid Waste Generation and Recyclable Materials. *Journal of Waste Management,* 29, 2209–2213.

Sakai, S., Sawell, S., Chandler, A.J., Eighmy, T.K.D. and Vehlow, J. (1996). World Trends in Municipal Solid Waste Management. *Journal of Waste Management,* 16(5-6), 341-350.

Sarkar, P. (2003). Solid Waste Management in Delhi- A School Vulnerability Study. *In Third International Conference on Environmental and Health,* 07-08 July 2003. Chennai, India.

Sasikumar, K. and Krishna, S.G. (2009). *Solid Waste Management,* PHI Learning Private Limited.

Schubeler, P., Wehrle, K. and Christen, J. (1996*). Conceptual Framework for Municipal Solid Waste Management in Low-income Countries*; Switzerland: Development Coorperation in Technology and Management, St. Gallen.

Schultz, P.W. (2002). *Environmental Attitudes and Behaviours across Cultures*. Retrieved on May 26, 2012, from http://orpc.iaccp.org.

Schultz, P.W. (2002). Knowledge, Education, and Household Recycling: Examining the Knowledge-Deficit Model of Behaviour Change. In Dietz, T., and Stern, P. (Eds.), *New Tools for Environmental Protection*, (pp: 214-225), Washington DC: National Academy of Sciences.

Schultz, P.W., Oskamp, S. and Mainieri, T. (1995). Who Recycles and When? A Review of Personal and Situational Factors, *Journal of Environmental Psychology*, 15, 105-121.

Scott, D. (1999). Equal Opportunity, Unequal Results: Determinants of Household Recycling Intensity, *Journal of Environment Behaviour*, 31(2), 267–290.

Selangor, (2011), *Selangor Map*, Retrieved on July 29, 2012, from https://www.google.com/maps/place/Selangor.

Sembiring, E. and Nitivattananon, V. (2010). Sustainable Solid Waste Management toward an Inclusive Society: Integration of the Informal Sector, *Journal of Resources, Conservation and Recycling*, 54, 802–809.

Seunghae, L. and Paik, S.E. (2011). Korean Household Waste Management and Recycling Behaviour. *Journal of Building and Environment*, 46, 1159-1166.

Shekdar, A.V. (2009). Sustainable solid waste management: An integrated approach for Asian countries. *Journal of Waste Management*, 29, 1438-1448.

Shen, J. and Saijo, T. (2008). Reexamining the relations between socio-demografic characteristics and individual environmental concern: Evidence from Shangai data. *Journal of Environmental Psychology*, 28, 42-50.

Simon, A.M. (2008). *Analysis of Activities of Community Based Organizations Involved in Solid waste Management, Investigation Modernized Mixtures Approach. The Case of Kinondoni Municipality, Dar es Salaam.* Master's Thesis, Wageningen University, Netherland.

Singh, J. and Ramanathan, A.L. (2010). *Problems of Municipal Solid Waste Management in Urban Areas,* Solid Waste Management: The World Bank, Washington, D. C.

Singhirunnusorn, W., Kidanun, D. and Kaewhanin, W. (2012). *Household Recycling Behaviours and Attitudes toward Waste Bank Project,* Mahasarakham Municipality. J ASIAN.

Snel, M. and Ali, M. (1999). *Stakeholder Analysis in Local Solid Waste Management Schemes*, Retrieved on February 02, 2012, from http://www.lboro.ac.uk.

Solomon, O. and Spaargaren, G. (2011). Recognising and Strengthening the Role of Households in Solid Waste Management. In Vlient, B. V., Buuren, J. V., and Mgana, S. (2014). *Urban Waste and Sanitation Services for Sustainable Development,* Madison Avenue: New York.

Soncuya, F. and Viloria, V. (1992). In K. Sasikumar, Sanoop Gopi Krishna, (Ed) (2009), *Solid Waste Management,* PHI Learning Private Limited.

Stern, P.C. (2000). New Environmental Theories: Toward A Coherent Theory Of Environmentally Significant Behaviour. *Journal of Social*, 56, 407–424.

Suchada, P., Tränkler, J., Cholada, K. and Scholl, W. (2003). The Role of Formal and Informal Sectors in Solid Waste Management of Developing Countries. In *Proceedings Sardinia,* 6-10 October, 2003. Cagliari, Italy.

Suchart, P. (1993). It is not waste. In Rungnapha, M., Factors related to solid waste sorting behavior among housewives in Bang Sue District, Bangkok, *Journal of Science and Technology*, (1993).

Sujauddin, M., Huda, S.M.S. and Hoque, A.T.M.R, (2008). An overview on waste generation characteristic in some selected local authorities in Malaysia, *In Proceedings of International Conference on Sustainable Solid Waste Management,* September 2007, Chittagong, Bangladesh.

Suresh, S. and Vijayakumar, V. (2006). *Waste Management in Botswana*. Master. Linkoping University, Sweden.

Surindra, S. and Pavitra, S. (2015). Household Solid Waste Generation and Composition in Different Family Size and Socio-Economic Groups: A case study, *Journal of Sustainable Cities and Society,* 14, 56-76.

Suthar, S. and Singh, P. (2015). Household Solid Waste Generation and Composition in Different Family Size and Socio-Economic Groups: A case study. Sustainable Cities and Society, *Journal of Sustainable Cities and Society*, 14, 56-63.

Tadesse, T. (2004). *Solid Waste Management*, Retrieved on March 20, 2013, from http://www.cartercenter.org.

Tadesse, K. (2004). *Dry Waste Management in Addis Ababa City*. Workshop of Solid Waste Management, January 15-16th, 2004, Addis Ababa.

Tadesse, T., Ruijs, A. and Hagos, F. (2008). Household Waste Disposal in Mekelle City. Northern Ethiopia, *Journal of Waste Management*, 28, 2003–2012.

Takaoka, M., Nobuo, T., Naruo, Y. and Takahiro, M. (2011). Current Status of Waste to Power Generation in Japan and Resulting Reduction of Carbon Dioxide Emissions, *Journal of Material Cycles and Waste Management,* 3, 198-205.

Talmudi, Z., Abdullah, M.L. and Osman, A. (2009). A New Fuzzy Multi-Criteria Decision Making Approach for Municipal Solid Waste Disposal Options, *Journal of Sustainability Science and Management,* 4(1), 20-37.

Talyan V., Dahiya, V. and Sreekrishnan, T.R. (2008). State of Municipal Solid Waste Management in Delhi the Capital of India. *Journal of Waste Management*, 28, 1276-1287.

Tatlonghari, R.V. and Jamias, S.B. (2010). Village Level Knowledge, Attitudes, and Practices on Solid Waste Management in Sta. Rosa City, Laguna, Philippines. *Journal of Environmental Science and Management*. 13: 35-51.

Taylor, D. and Donald, C. (1999). Mobilizing Resources to Collect Municipal Solid Waste: Illustrative East Asian Case Studies, *Journal of Waste Management and Research*, 17, 263-274.

Tchobanoglous, G., Theisen, H. and Eliason, R. (1977). *Solid Wastes: Engineering Principles and Management issues*. McGraw-Hill: USA.

Tchobanoglous, G., Theisen, H. and Vigil, S.A. (1993). *Integrated Solid Waste Management: Engineering Principles and Management* Issues. 2nd Edn. McGraw-Hill International: New York, USA.

TCPA (Town and Country Planning Association) (2008). *Towards Zero Waste: Eco-towns Waste Management Worksheet*, RAP Spiderweb Ltd, Clowes Street, Oldham, London.

The Commissioner of Law Revision, Malaysia. (2006), *Environmental Quality Act (Act 127), 1974*, Percetakan Nasional Malaysia Bhd.

The Commissioner of Law Revision, Malaysia. (2006), *Local Government Act (Act 171), 1976*, Percetakan Nasional Malaysia Bhd.

The Commissioner of Law Revision, Malaysia. (2006), *Streets, Drainage, and Building Act (Act 133), 1974*, Percetakan Nasional Malaysia Bhd.

The Commissioner of Law Revision, Malaysia. (2006), *Town and Country Planning Act (Act 172), 1976*, Percetakan Nasional Malaysia Bhd.

The Commissioner of Law Revision, Malaysia. (2007), *Solid Waste Management and Public Cleansing (Act 672) in 2007*, Nasional Malaysia Bhd.

The Commissioner of Law Revision, Malaysia. (2007), *Solid Waste Management and Public Cleansing (Act 673) in 2007*, Percetakan Nasional Malaysia Bhd.

Thogersen, J. (1994). A Model of Recycling Behavior, with Evidence form Danish Source Separation Programs. *Journal of Research in Marketing*, 11, 145 - 163.

Thorneloe, S., Weitz, K., Nishtala, S., Yarkosky, S. and Zannes, M. (2002). The Impact of Municipal Solid Waste Management on Greenhouse Gas

Emissions in the United States. *Journal of the Air and Waste Management Association*, 52, 1000-1011.

Tilikidou, I. and Delistavrou, A. (2001). Utilisation of Selected Demographics and Psychographics in Understanding Recycling Behaviour: A Focus on Materialism. *Journal of Greener Management International*, 34, 75-93.

Timlett, R.E. and Williams, I.D. (2009). The Impact of Transient Populations on Recycling Behaviour in A Densely Populated Urban Environment, *Journal of Resources, Conservation and Recycling*, 53, 498-506.

Tojo, N., Naoko, L., Thomas, H. and Dalhammar, C. (2006). *Extended Producer Responsibility as A Driver for Product Chain Improvement.* Sheffield: Greenleaf.

Tonglet, M., Phillips, P.S. and Read, A.D. (2004). Using the Theory of Planned Behavior to Investigate the Determinants of Recycling Behaviour: a case Study from Brixworth, *UK. Journal of Resources, Conservation and Recycling*, 41, 191-214.

Troschinetz, A.M. and Mihelcic, J.R. (2009). Sustainable Recycling of Municipal Solid Waste in Developing Countries. *Journal of Waste Management*, 29(2), 915-923.

Tsai, T.H. (2008). The Impact of Social Capital on Regional Waste Recycling. *Journal of Sustainable Development*, 16, 44-55.

Tucker, P. (1999). A Survey of Attitudes and Barriers to Kerbside Recycling. *Journal of Environmental and Waste Management*, 2(1), 55-63.

Tucker, P. (1999) Normative Influences in Household Waste Recycling. *Journal of Environmental Planning and Management*, 42(1), 63-82.

Tukahirwa, J.T. (2011). *Civil Society in Urban Sanitation and Solid waste Management.* Doctor Philosophy, Wageningen University, Netherlands.

Tukahirwa, J.T., Mol, A.P.J. and Oosterveer, P. (2010). Civil Society Participation and Solid Waste Management in Uganda, *Journal of Local Environment*, 15(1), 1–14.

Uma, S. (1984). *Research Methods for Managers: A Skill-building Approach,* Wiley: University of Michigan.

UN (United Nations). (2000). *Resolution Adopted by the General Assembly. Fifty-fifth Session.* United Nations Millennium Declaration. United Nations.

Retrieved on March 20, 2013, from http://www.un.org/millenniumgoals/bkgd.shtml.

UN-HABITAT (United Nations Human Settlements Programme) (1989). *Institutional Arrangements for regional (Sub-regional) Development Planning.* Nairobi, London: Earthscan Ltd, Dunstan House.

UN-HABITAT (United Nations Human Settlements Programme) (2009). *Solid Waste Management in the World's Cities: Water and Sanitation in the World's Cities 2010.* London: Earthscan Ltd, Dunstan House.

UN-HABITAT (United Nations Human Settlements Programme), (2010), *Solid Waste Management in the World's Cities: Pre-publication presentation*. London: Earthscan Ltd, Dunstan House.

UNEP (United Nations Environment Programme*)* (2009). *Developing Integrated Solid Waste Management Plan.* Training Manual. Volume 1. Waste characterisation and Quantification with Projections for future.

UNEP (United Nations Environment Programme*)* (2014). *Emerging Issues in Our Global Environment*, United Nations Environment Programme.

Ungar, S. (1994). Apples and Oranges: Probing the Attitude-Behaviour Relationship for the Environment. *Journal of the Canadian Review of Sociology and Anthropology*, 31(3), 288-304.

UNICEF (United Nations International Children's Emergency Fund) (2006). *Solid and Liquid Waste Management in Rural Areas*. India: Ministry of Rural Development.

United Nations. (1971). *Report for the United Nations Conference on Human Environment,* United Nations Publication, Nations. Retrieved on March 20, 2013, from http://www.un-documents.net/aconf48-14r1.pdf.

Van Burkering, P.J.H. and Gupta, J. (2000). *Integrated solid waste management in developing countries,* Grover V; Guha B K; Hogland W; McRae S: In : Solid waste management. Balkema.

Van Liere, K.D. and Dunlap, R.E. (1980). The Social Bases of Environmental Concern: A Review of Hypotheses, Explanations and Empirical Evidence. *Journal of Public Opinion Quarterly*, 44, 181-197.

Vicente, P. and Reis, E. (2007). Segmenting Households According to Recycling Attitudes in a Portuguese Urban Area, *Journal of Resources, Conservation and Recycling,* 52, 1-12.

Vijayakumar, S.S.V. (2011). Waste Management in Botswana, Master Thesis, Linköping University.

Vining, J. and Ebreo, A. (1990). What Makes a Recycler? A Comparison of Recyclers and Non-recyclers, *Journal of Environment and Behaviour*, 22(1), 55-73.

Visvanathan, C. (2006). *Domestic solid waste management in South Asia 3R*, South Asia Expert Workshop, Kathmandu, Nepal.

Visvanathan, C. and Ananth S. (2010). A Glance at the World: Composting of municipal solid waste: Indian experience, *Journal of Waste Management*, 30, 163–164.

Visvanathan, C. and Trankler, J. (2003). Municipal Solid Waste Management in Asia: A Comparative Analysis, *Proceedings of Sustainable Landfill Management*. December 3-5, 2003, Chennai, India, pp: 3-15.

Visvanathan, C. and Ulrich, G. (2006). Domestic Solid Waste Management in South Asian Countries – A Comparative Analysis, *Proceedings of 3R South Asia Expert*. August 30-September 1, 2006. Kathmandu, Nepal, 13-16.

Wacker, C., Viaro, A. and Wolf, M. (1999). Partnerships for Urban Environmental Management: The Roles of Urban Authorities, Researchers and Civil Society. *Journal of Environment and Urbanisation*, 11(2), 113-126.

Wahid, A.G. and Hassan, M.N. (1996). Muda, Domestic and Commercial waste: Present and Future Trends. CAP-SAM National Conference on the State of Malaysian Environment, Penang: RECDAM.

Wang, H., and Chin, W. (2012). Municipal Solid Waste Management in Beijing: Characteristics and Challenges, *Journal of Waste Management Research*, 31(1), 67-72.

Webster, F.E. (1975). Determining the Characteristics of the Socially Conscious Consumer. *Journal of Consumer Research*, 2, 188-196.

Westfall, M.S., Matthew, S. and Nicholas, A. (2004). *The Garbage Book. Asian Development Bank: Manila, Philippines*. Retrieved on March 12, 2012, from www.adb.org.

WIEGO. (2013). *Integrating Waste Pickers into Municipal Solid Waste Management in Pune*, India, WIEGO Policy Brief (Urban Policies) No. 8, WIEGO Publication Series.

William, A., Worrell, and Vesilind, A. (2012), *Solid Waste Engineering*, Second Edition, Nelson Education, Ltd.

William, G.S., and Francis, M. (2004). *Solid waste management in Kawempe division. Issues, Challenges and Emerging Options*. Retrieved on January 06, 2013, from: http://www.scribd.

William, L.R. (2012). *Three Decades Worth of Landmark Studies Punctured Many Earlier Assumptions of What Happens When People Throw Things Away*, Retrieved on May 26, 2012, from: http://uanews.org.

Williams, I.D. and Taylor, C. (2004). Maximising Household Waste Recycling at Civic Amenity Sites I.D. in Lancashire, England. *Journal of Waste Management*, 24, 861-874.

Williams, P.T. (2005). *Waste Treatment and Disposal*. John Wiley and Sons ltd., West Sussex.

Wilson, D.C. (2007). Development Drivers for Solid Waste Management. *Journal of Waste Management and Research*, 25(3), 155-164.

Wilson, D.C., Ljiljana, R., Michael, J.C., Andy, W., Joachim, S. and Anne, S. (2013). *Benchmark Indicators for Integrated & Sustainable Waste Management (ISWM).* ISWA World Congress. 7-9 October 2013, Vienna.

Wilson, D.C., Rodic, L., Scheinberg, A., Velis, C. and Alabaster, G. (2012). Comparative Analysis of Solid Waste Management in 20 Cities. *Journal of Waste Management and Research*, 23, 237-254.

Wilson, D.C, Velis, C. and Cheeseman, C. (2006). Role of Informal Sector Recycling in Waste Management in Developing Countries. *Journal of Habitat International*, 30, 797 –808.

Winayanti, L. and Lang, H.C. (2004). Provision of Urban Services in an Informal Settlement: A Case of Kampung Penas Tangul, Jakarta. *Journal of Habitat International*, 28, 41-65.

Witmer, J.F. and Geller, E.S. (1976). Facilitating Paper Recycling: Effects of Prompts, Raffles and Contests. *Journal of Applied Behavior Analysis*, 9, 315-322.

World Bank. (2001). *Philippines Environment Monitor 2001*, Washington, DC: World Bank. Retrieved on July 29, 2012, from http://documents.worldbank.org.

Xudong, C. (2008). *A Systematic Comparison of Municipal Solid Waste Management Systems: Case Studies of Dalian City, China and the Region of Waterloo, Canada,* Waterloo, Ontario, Canada, 2008

Yahaya, N. (2002). *Element of Solid Waste Management.* Malaysia: Ministry of Housing and Local Government, Malaysia

Yahaya, N. (2003). *Physical And Chemical Characteristics Of Solid Wastes Disposed At Taman Beringin Landfill, Kuala Lumpur,* Master, Universiti Putra Malaysia.

Yahaya, N. (2007). *Solid Waste Management in Malaysia: Policy, Review, Issues and Strategies,* Malaysia: Ministry of Housing and Local Government.

Yahaya, N. (2007). *Overview of SWM and Policies in Malaysia*. Ministry of Housing and Local Government, Malaysia.

Yahaya, N. (2012). *Solid Waste Management in Malaysia: The Way Forward.* Malaysia: Ministry of Housing and Local Government.

Yatim, S.R.M. and Arshad, M.A. (2010). Household Solid Waste Characteristics and Management in Low Cost Apartment in Petaling Jaya, Selangor. *Journal of Health and the Environment,* 1(2), 58-63.

Ye, P.K. (2010). *Household Waste Disposal: Knowledge, Perception, Practices and Relationship with Diarrhea Frequency in Laputta Township in Myanmar,* Master Thesis, Chulalongkorn University.

Yin, R.K. (1982). *Design Issues in Qualitative Research: The Case: Knowledge Utilization Studies*. Institution Abt Associates, Inc., Washington, DC.

Yong, D. (1989). Exploring the Difference between Recycles and Non-recycles: The role of Information, *Journal of Environment System*, 18, 341-351.

Yong, R. (2000). Japanese Approaches to Environmental Management: Structural and Institutional Features, *Journal of International Review for Environmental Strategies*, 1(1), 79-96.

Zainal, Z.A., Rifau, A., Quadir, G.A. and Saetharamu, K.N. (2002). Experimental Investigation of a Downdraft Biomass Gasifier, *Journal of Biomass Bioenergy*, 23(4), 283-289.

Zen I.S. (2014). *An Analysis of Household Acceptance of Curb side Recycling Scheme in Kuala Lumpur, Malaysia,* Proceedings in SUM 2014, Second Symposium on Urban Mining, At Bergamo, Italy. January 14, .2015.

Zerbock, O. (2003). *Urban Solid Waste Management: Waste Reduction in Developing Nations.* Master. Michigan Technological University.

Zhang, D.Q., Tan, S.K. and Gersberg, R.M. (2010). Municipal solid waste management in China: Status, Problems and Challenges. *Journal of Environmental Management*, 91(8), 32-45.

Zhu, D., Asnani, P.U., Zurbrugg, C., Anapolsky, S. and Mani, S. (2008). *Improving Solid Waste Management in India: A Sourcebook for Policy Makers and Practitioners*, The World Bank: Washington, DC.

Zhuang, Y., Wu, S., Wang, Y., Wu, W., and Chen, Y. (2008). Source separation of household waste: a case study in China. *Journal of Waste Management*, 28, 2022–30.

Zikri, M., Katiman, R., Yusoff, M., and Yusliza, M. (2010). Residential Satisfaction with Housing in the Malaysian Context, *International Journal of Interdisciplinary Social Sciences*, 5(2), 37-45.

Zurbrugg, C. (2002). *Urban Solid Waste Management in Low-Income Countries of Asia How to Cope with the Garbage Crisis*. Retrieved on July 29, 2012, from::http://www.eawag.ch.

Zurbrugg, C. (2003), *Urban Solid Waste Management in Low-Income Countries of Asia - How to Cope with the Garbage Crisis*, SCOPE, Durban, South Africa, 2002.

Zurbrugg, C. (2013). *Assessment Methods for Waste Management Decision-support in Developing Countries*, Doctor Philosophy, University Degli Studi, Brescia.

Zurbrugg, C., Gfrerer, M., Ashadi, H., Brenner, W. and Kuper, D. (2011). Determinants of sustainability in solid waste management - The Gianyar Waste Recovery Project in Indonesia, *Journal of Waste Management*, 32, 2126-2133.