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RESEARCH ARTICLE

INFLUENCE OF WASTE MANAGEMENT ON ENVIRONMENTAL HEALTH AND DEVELOPMENT

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ABSTRACT

This research scrutinized the impacts of waste management systems on environmental health and socio-economic development in the Yaba Local Council Development Area (LCDA), Lagos, employing a sample survey as the research design. The study included 800 respondents from the public residing within the targeted area, yielding a representative sample size of 227 as determined by the Yamane formula. Stratified sampling was used to assess respondents that were readily accessible and amenable to participation. The data were gathered via structured questionnaires and subsequently evaluated through Frequency Tables and Percentages. Pearson's Product Moment Correlation Statistical method was employed for hypotheses testing. The findings revealed a significant correlation between the current waste management system in Yaba LCDA and employment opportunities. Likewise, there was a noted relationship between waste collection methodologies in Yaba LCDA and the economic opportunities for residents. Moreover, a relationship between the challenges confronting waste collection and management in Yaba LCDA and environmental sanitation was also observed. The study proposes several recommendations. First, the necessity for establishing and enforcing robust waste management legislation to streamline the current waste management system in Lagos State. Secondly, continued public education campaigns are necessary to underline the benefits of efficient waste management for environmental and societal health. Additionally, remuneration for Lagos State Waste Management Authority (LAWMA) staff needs to be fair and sufficient to ensure their dedication to their work. Finally, the Lagos State government should furnish modern equipment, suitable vehicles, and waste disposal tools to support LAWMA and Private Sector Participants (PSP) officials in waste collection efforts.

KEYWORDS

Waste management, Environmental health, Social economic development.

1. INTRODUCTION

Waste management plays a crucial role in environmental health and development. Improper waste disposal can lead to environmental pollution and health problems (Mamady, 2016). The management of solid wastes and its associated impacts on the environment, society, and health should be a priority for decision-makers and researchers (Cruvinel et al., 2019). It is important to consider the social and environmental impacts of waste collection and recycling practices (Mora et al., 2013). Hazardous waste, in particular, poses a significant threat to the environment and socio-political aspects of countries like Bangladesh (Hannan and Aigbogun, 2021). Effective waste management is necessary to reduce the negative impacts of waste on the environment and public health (Raharjo et al., 2022). The increasing generation of waste due to population growth and economic development highlights the need for proper waste management to prevent environmental pollution and health hazards (Raharjo et al., 2022). Additionally, the management of electronic waste (e-waste) is a growing concern, and the development of e-waste management policies is crucial for human health protection and sustainable development (Twagirayezu et al., 2021). Overall, waste management is essential for preserving environmental health and promoting sustainable development.

The significance of investing in efficient waste management practices, both for economic growth and infrastructural development, as well as for the mitigation of environmental risks to human health, is unequivocal. A thorough understanding of waste, its characteristics, and the unique challenges it presents within our society is crucial to building a compelling economic argument for improved waste management strategies (Oresanya, 2013). The volume of waste generated by households daily is growing due to increasing population density and the demand for food and other essential commodities (Ogunsote and Adedeji, 2013). Unfortunately, most of this waste ends up in municipal dumpsites. Inefficient waste management practices render these dumpsites harmful to the environment and detrimental to the health of nearby residents. Contamination of land, air, and water remains a major concern (IJgosse et al., 2014). The amplifying usage of energy leads to significant quantities of solid waste from agricultural and domestic operations, posing considerable health threats (Kulczycka, et al., 2014). Moreover, inadequate disposal of municipal solid waste results in numerous harmful effects such as health deterioration, accidents, flooding, and increased environmental pressure (Kulczycka and Kowalski, 2011).

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Unregulated open dumpsites in urban areas pose severe health hazards and negatively impact the urban environment (Ogu, 2010). Particularly, untreated solid waste from homes and the environment contribute significantly to the spread of infectious diseases (Medina, 2010). The improper handling of waste attracts vectors such as flies and rats, which can spread disease (Alhassan and Mohammed, 2013). Organic household waste presents a significant risk as it can create conditions conducive to microbial pathogen survival and growth, leading to the spread of infectious and chronic diseases (Mvulirwenande and Rodic, 2012).

In Lagos State, Nigeria, the government's waste management practices face numerous challenges, including the lack of an effective and efficient system, inadequate funding, and a prevalent culture of improper waste disposal (Abila and Kantola, 2013). These challenges are exacerbated by lack of organization, limited financial capacity, and complex structural issues within local authorities. This research focuses on Lagos State, where waste products are frequently disposed of indiscriminately, littering public spaces such as shopping malls, major streets, and open markets. Given the wide array of issues associated with waste management in Lagos State, the objective of this research is to provide the government with recommendations for best practices to mitigate the effects of waste management on environmental health and development.

1.1 Problem Statement

Open waste dumps are significant environmental issues, releasing unpleasant odors and smoke, causing disease among residents living nearby. In Lagos State, the rapid pace of urbanization and population growth has strained public services, leading to deteriorating sanitation standards. Problems encountered by the government include inadequate waste collection, improper waste disposal, lack of adequate facilities, insufficient financial resources, and slow implementation of waste regulations. The most prevalent waste management method in Lagos State is open, unregulated, and insecure waste sites where mixed waste is dumped, burned openly, and hazardous substances leaked into the environment. The city's overpopulation and lack of waste management infrastructure further compound these issues. This research aims to provide the government of Lagos State and its residents with comprehensive information on the impact of waste management on environmental health and development.

1.2 Aim and Objectives of the Study

The main aim of the study is to examine the influence of waste management on environmental health and development in Lagos State, Nigeria. The specific objectives of the study are to:

i. Evaluate the correlation between the current waste management system in Yaba LCDA and employment opportunities.

ii. Explore the connection between methods used in waste collection and management and economic opportunity in Yaba LCDA.

iii. Assess the relationship between various challenges facing waste collection and environmental sanitation in Yaba LCDA.

1.3 Research Questions

The study will address the following research questions:

i. What is the correlation between the current waste management system in Yaba LCDA and employment opportunities?

ii. How do the methods used in waste collection and management relate to economic opportunity in Yaba LCDA?

iii. To what extent do the various challenges facing waste collection and management in Yaba LCDA affect environmental sanitation?

1.4 Research Hypotheses

The research will test the following hypotheses:

i. H_{o1}: There is no correlation between the current waste management system in Yaba LCDA and employment opportunities.

ii. H_{o2}: There is no correlation between methods used in waste collection and management in Yaba LCDA and economic opportunity.

iii. H_{o3}: There is no correlation between various challenges facing waste collection and management in Yaba LCDA and environmental sanitation.

1.5 Significance of the Study

This research will be of significant benefit to various stakeholders including the Lagos State government, policy makers, residents, Private Sector Partnerships (PSPs), and other researchers in related fields. It will provide students and researchers with valuable insights on the influence of waste management on environmental health and development. Moreover, it will aid policymakers in understanding the need for the public to support government efforts in waste management. The findings will also contribute to the existing body of literature and serve as a reference for future research.

1.6 Scope of the Study

The study is confined to examining the influence of waste management on environmental health and development in Lagos State, Nigeria, to maintain the scope within manageable parameters to ensure accurate, reliable, and relevant information is gathered.

2. Literature Review

2.1 Preamble

This section deals with review of literature on the concepts, variables, and constructs of this study. The section deals with the following:

- Theoretical Framework
- Conceptual Review
- Empirical Review

2.2 Theoretical Framework of the Study

To channel environmental sciences with engineering architecture, a waste management theory (WMT) has been introduced. WMT is a single array of waste and waste management information. It is an attempt to coordinate the different variables of the waste management system in its present state. In accordance with the industrial ecology paradigm of WMT, other theories, particularly design theory, are developed side by side. Design theory is still under progress. Design theory is relatively modern. After its growth, it provides useful insights into emerging theories. Scientific definitions of core principles are present at the current stage of WMT growth and the development of WMT is being undertaken under the framework of industrial ecology. The role of science is to construct explanatory technology systems; a set of representative tools, including models, diagrams, and theories. Science discoveries theories can be viewed as landmarks. Theories are normally implemented after prior experiments discover a system of uniformities of a group of phenomena. The purpose of theory is to understand regularity processes which cannot be clarified with empirical regulations. Scientific philosophy may be systematically considered as a collection of phrases in each language. Theory is often considered as being formulated within a simple logical structural linguistic context which specifies the rules for deductive inference.

2.3 Conceptual Framework

2.3.1 Concept of Waste Management

Waste management includes storage, transfer and recycling of waste, waste and other waste materials. waste management Waste management is the waste management mechanism which has a wide range of recycling options for non-müll materials. The argument is how waste can be used as a precious resource. Single households and company owners of the planet needs waste management. Waste management disposes, in a healthy and reliable way, of the goods and substances which you use. Waste management or disposal is all the operations and acts needed from start to finish disposal for waste management. waste management or disposal This involves collection, distribution, management and recycling of waste and inspection and control. It also contains the legal and legislative system for waste management including recycling rules etc.

Waste management (or waste disposal) is practices and acts essential for waste management from start to finish. This covers waste generation, storage, treatment, and disposal as well as waste management process surveillance and legislation. Waste can be solid, liquid, or gaseous, with separate disposal and handling procedures for each form. Waste management includes all forms of waste, including agricultural, organic, and family waste. waste management. In some circumstances, waste can pose a health hazard. Waste is produced by human activities, such as the mining and production of raw materials. Waste management is designed

to reduce the detrimental health, environmental and esthetic impacts of waste. Practices of waste management between countries (developed and emerging states) are not uniform; regions (urban and rural); and residential and industrial sectors may all take differing approaches. Maintaining municipal solid waste (MSW) is the waste generated by family, industrial and business operations. A significant range of waste management methods are involved.

Waste management consists of waste generation, storage, sorting or recycling, waste material control and control. The word typically encompasses materials produced by human action, and its impact on health, the atmosphere and esthetics is normally reduced. Waste management is a different activity from resource retrieval that focuses on delaying the rate of natural resources use. Both waste products, whether concrete, liquid, gaseous or radioactive, fall within the framework of waste management Practices for manufacturers, urban and rural and residential and industrial producers may vary. It is normally the responsibility of the municipal authority for the disposal of non-hazardous waste residential and institutional waste, whereas the management of non-hazardous commercial and industrial waste typically rests with the generator subject to local and national or international controls.

Waste management applies to plants, livestock, humans, and other species collecting, managing, recycling and reusing solid, liquid and gas waste. It involves surveillance of the habitable ecosystem in a closed ecological system. Waste treatment includes waste, transfer and recycling, waste, and other waste materials. waste management. Waste management Waste management is a method of waste disposal which provides several recycling options for non-waste materials. Waste management consists of all operations and acts appropriate for waste management from the start to the end. waste management This includes processing, storage, handling, disposal and control and enforcement, among others.

Waste management is a waste process and provides a variety of recycling solutions for items not included in the waste process. Waste management consists of waste management operations such as waste collection, processing, sorting and reuse. waste management. The process is mainly aimed at eliminating solid, liquid, and gaseous waste, ensuring a clean and wholesome environment, reducing total pollution, and above all, energy conservation. To decreased waste: reduce, reuse, and recycle, always bear in mind the 3 Rs.

Waste management consists of a combination of several waste management services or actions. The general aim of waste management is to ensure proper and minimizing environmental impacts for the handling, removal, and disposal of waste. Waste management consists of all waste management activities. This includes collection, transfer, sorting, reuse, treatment, recycling, storage and monitoring of waste, but is not limited to. Waste management comprises other activities not involving direct waste handling such as education, budgeting, funding, and compliance with the regulations. waste management includes waste management activities. The goal of waste management is to maximally benefit from the collected waste (e.g., through the reuse, recycling, and sale of waste materials) while limiting its negative effects, such as: waste management costs, storage space requirements, unavailability of waste-compound resources, potential adverse effects on human health and/or the environment.

The 'waste hierarchy' is used by waste managers and policymakers to achieve such objectives as best we can. These are: prevention Minimizing, reusability, recycling, recycling, and energy recovery (incineration) and storage (fills) from uppermost option to bottom (less favorable option). All actions and actions required to manage waste from collection orders to disposal are waste management or disposal. Abstracts like collection, transport, treatment, and disposal, together with monitoring and regulation, are included in a very easy format waste management. It also covers the legal and regulatory framework for waste management including recycling guidance. Waste management in different sectors including health care, municipalities, construction, food, manufacturing, retail, industrial, commercial, federal schools, educational institutions, and other sectors has become a key component of the project. Some of the most popular waste management services include recycling, medical waste, building services, mail recycling, security services, mobile storage, bags, recycling, waste collection planners and so forth.

Curbside collection is provided to society by waste management companies. Companies sell dumping agents to people according to their requirements. The waste management department is the recycling of plastics, cflam, metals, paper, and batteries. With a social perspective, Bagster programs are initiated to better every household. The disposal of medical waste is one of the major and safest waste disposal forms. Medical waste disposal is treated with extreme care and attention. One of the leading customers of waste management companies is the healthcare industry. Medical waste should be disposed of and recycled safely. Customized waste management services for customers are also available. Most waste management companies supply customer support with online ordering and mail-based inquiries. Some companies supply every household with pack rat units to safely store waste. All actions and actions required to manage waste from collection orders to disposal are waste management or disposal.

2.4 Empirical Review of Previous Work in the Area of Study Lagos Waste Management Authority (LAWMA)

Lagos State government set up LAWMA to rescue the ineffective waste management by the local government councils. To provide a more effective waste management system, Lagos State government saddled LAWMA to regulate the activities of waste management within its value-chains. LAWMA established a partnership with the private sector called Private Sector Partnership PSP. LAWMA is responsible for regulating the activities of the PSPs operators, provides waste dumpsites, waste recycling and fixes monthly price for Lagos residents, different organizations and ensures that all Lagos resident register for waste management services. Under state rule, the facilities are supposed to be patronized by all Lagos citizens as a pathway to keep the state safe (Onibokun et al., 2012).

LAWMA charges every resident of Lagos each month for the location and existence of the households and regardless of the waste produced by each resident in low-income areas. LAWMA charges each month LAWMA now faces sustainable waste management problems, as the sustainability of waste management in the state depends on gathering all the waste that is generated by residents and establishments without dumping it on Lagos Street and on the acceptability of the price regime. Additionally, the local people needed to be sensitized, enlightened and ensure that they bought into the project. To provide solutions to challenges faced by LAWMA in ensuring cleaner Lagos environment, there is need to briefly explain the current stakeholders and perceived future stakeholders that are involve in the sustainable waste management system in Lagos state.

2.4.1 Lagos State Waste Management Practices

Lagos has been considered as Africa's fastest growing megacity because, between 1962 and 2006, Lagos population has expanded from 1,135,805 to 17.5 million, with a forecast of reaching 20.5 million by 2015 (Ogunsote and Adedeji, 2013). Also, according to the reports narrated by John Campbell of the New York Times dated July 10th, 2012, Lagos population is now at least twenty-one million, surpassing Cairo as Africa's largest city. Whatever the size, and however the city is defined, Lagos is the center of one of the largest urban areas in the world. With land area of about 153,340 hectares,19.6 percent is covered with water and mangrove swamps landmass and thus make Lagos megacity to be occupied with two main islands in the Atlantic Ocean, separated by creeks (Alhassan and Mohammed, 2013).

Currently, Lagos State has not been able to perceive Sustainable Waste Management System SWMS as an intergenerational concept that satisfies current expectations and also taking care of the future generation. Two previous literature notes that the entire method of processing, transport, treatment, recycling, recovery of resources and disposal of solid waste in metropolitan areas is specified by Municipal Solid Waste Management MSWM" Alhassan & Mohammed and "Sustainable MSWM should include the management of waste (from collection, treatment to disposal) in a manner that ensures the continued safety of the public and the community (Alhassan and Mohammed, 2013). However, it struggles with respect to the opinions of these previous scholars in the sense that rigid policies and the implementation of waste policies are being undermined by partisan stakeholders. For instance, corrupt practices have formed the bedrock of waste management practices because it is a government business, and everyone is chasing public funds to a mass wealth to themselves. Virtually all stakeholders are guilty of this allegation until the following reforms explained below took place which although, it is still under trial.

In the early stage, the local government councils were responsible to administer solid waste management within the state but unfortunately, it was ineffectively and unsustainably managed due to management complexity. As a result of this waste management complexity, Lagos State government institutionalized the Lagos State Waste Disposal Board which was later converted to Lagos State Waste Management Agency (LAWMA) with the sole responsibility to meritoriously managing waste generated by over 20 million Lagos residents and ensuring a cleaner Lagos ecosystem via refuse dumpsite management, waste transportation and waste

recycling. To actualize their objectives, the body inaugurated by the state have been able to put in place the establishments of Lagos Waste Management Authority LAWMA which is describes in section 2.5.1 of this section with their functions and some of their inadequacies.

In a nutshell, they practice door-to-door waste collection. Theoretical research shows that it is more difficult to collect waste in the low-income area due to the unavailability of waste bins positioned in front of the houses. Instead, the truck drivers need to blow the vehicle horn to alert the resident provided they are at home to bring out their waste for collection. However, it is less difficult to collect waste in the medium and high income are because their waste bin is positioned outside based on individual household, but the turnout is always low because of the scavenger's alternative an illegal avenue that permit them to pay less for waste collection. Investigation also shows that the frequency of waste collection in Lagos is dependent on trucks availability, benzene, or diesel availability in fuel station if there is no fuel scarcity in the state and commitment of the truck drivers to work.

The above practices by the Lagos state government are the perception of sustainable waste management system and this fall below international best practice.

2.4.2 Waste Generation and Waste Classification

2.4.2.1 Waste Generation

"The generation of waste is an important part of human behavior affected by social and economic growth. Nature is capable of diluting, dispersing, decaying, removing, and reducing the effects of undesirable environmental resids. There have been ecological imbalances where natural assimilative capacities have been surpassed" (Kulczycka et al., 2014). The effects of insufficient waste collection and disposal risk the atmosphere and public health considerably. "The common waste management option in Nigeria in Nigeria effectively includes the collection and eventual disposal of mixed wastes at designated waste sites. It does not work at source and at any stage during management to isolate waste materials" (Abila and Kantola, 2013). Based on the details available in the 2009 Ogwueleke report, some observations, and findings on the waste generation rate in several major Nigerian cities have been released.

There is no doubt at present, that in comparison with 2009, when this data was produced, the rate of waste generation in Lagos (with an expected population of more than 20 million in 2017) is troubling. In 2009, the State of Lagos produces waste at 9,000 tons/day, while it generates a peak of 3,849 tonnes/day (in the Kano State, according to Lagos State Waste Management Authority). The average development rate of 0.5kg/capital/day is commonly calculated. 50% of the waste produced is biodegradable, while other materials in different States have been calculated to have different compositions.

The research from Bayero University Kano Consultancy Unit (March, 2012) investigated that the composition for Polythene/cellophane= 19% Paper = 12.7%, Metal= 10%, Glass=8.7%, Plastics=11.3%, Fines (ash, dust and sand)=12% Miscellaneous =9% while Basel Convention Coordinating Centre for Africa in 2009 investigation reveals that 70% of all imports were used electronic electrical equipment of which about 30% could be described as E? Waste. Precisely on July 29th, 2014, the managing director of LAWMA was reported to have said in the Vanguard news online that "he said, we produce an average of approximately 12,000 tons a daily in the Lagos region, and you know what 1000 tons are all about. LAWMA evacuates 12,000 tons of waste every day as opposed to 10,000 tons previously produced." Also, in a related literature review it has been pointed out that urban population worldwide is considered as the factor responsible for the extraordinary rate of urban sprawl (Popoola, 2011). If the high population in Lagos state is directly related to the amount of waste generated therefore it is true according to a 2014 LAWMA reports

2.4.2.2 Solid Waste Classification

There are different types of pollution namely, Water Pollution, Air Pollution and Pollution realized from Waste. An example of this waste is Solid Waste. Waste is generated from households, communities, institutions, industries, health and agriculture activities.

The source of solid waste mentioned above are grouped as follows:

a. Residential, Commercial, Institutional.

b. Industrial.

c. Agricultural. and

d. Hazardous waste

Waste generated from different categories as mentioned are further classified as follows:

e. Rubbish: This solid waste class can be solid fuel or non-fuel.

Waste - Examples of fuel waste include paper, wood, scrap, rubber, and leather, while non-fuel residues may include metals, glass, pottery, etc. Pathological wastes: Dead animals and human waste are among its sources.

g. Industrial wastes: This could consist of metals, fly ash, paints metal ore processing,

sludge and chemicals.

h. Garbage: This is generated during the preparation of meat, fruit, and vegetables.

i. Agricultural wastes: Farm animals, cow feces and crop residue are examples of this type of waste.

The composition of solid waste must be understood to local councils in choosing the most economical way to collect it to build and maintain an appropriate central incineration facility, to prepare suitable sanitary landfill sites in the future or design a composite or central grinding plant, so that future demand is estimated, and expense and performance are correctly calculated. Furthermore, an earlier literature review emphasized the importance of the classification of waste, noting that the awareness of waste sources and forms in an environment is needed to build and operate a suitable framework for the management of solid waste (Guerrero et al., 2013).

WHO surveys have also reported that there are eight key classifications of solid waste generators: domestic manufacturing, commercial, institutional, building and demolition, public utilities, processing, and agricultural production. The figures for State waste classification in 2011 shown in the table below 2.2 shows that 62% of waste was biodegradable, 15% was plastic, 10% waste paper, 4% wastes, silts and 2% ashes.

2.4.3 Challenges Confronting Lagos State Waste Management System

To gain more understanding into why sustainable waste management system is becoming gridlock, there is need to dissect the challenges facing waste management in Lagos and examine how sustainable solutions from social-economic perspective could be used to solve these challenges. For instance, despite LAWMA efforts to keep Lagos streets cleaned, domestic wastes of different categories are being used to litter the streets by Lagosians is becoming an uncontrollable altitude. Research has shown that domestic waste constitutes about 65% of the waste daily collected by PSP operators but waste generated with respect to Lagos high population is alarming couple with the fact that the percentage of waste collected daily compared to total waste generated is not encouraging. "The major problem caused by wastes to the environment is pollution characterized by various types of solid wastes which include paper, textile plastic, metals, glass, bone, wood, vegetal matter, and food remnant of multiple consistency (Onibokun et al., 2012). The following are among the possible root causes of waste management challenges in Lagos State:

2.4.3.1 Challenges suffered from Ignorant Residents

In the 21st century, it will sound comic or absurd to say that low-income areas in Lagos state are characterized with unspeakable altitude ranging from indiscriminate littering of highways with feces during the day shamelessly to throwing of waste on the street by someone who parked his or her car to achieve this action. Could one ascribe these types of manners to obliviousness or poverty, or it is just an act of indiscipline? But what these types of altitude could be called, these reflect the category of people government have been harboring close to a city that will soon be regarded as megacity. The consequence of this is evident in the survey carried using the questionnaire which reflects that because of indiscriminate waste disposal in Lagos state, LAWMA, the body that is saddled with the responsibility of keeping Lagos clean, could only collect 60% of the waste generated daily in Lagos.

In addition to this menace, LAWMA could not provide sufficient incinerators in some longer street couple with fact waste are regularly collected in some areas where there is availability of waste bins and large incinerators. In line with the survey carried out with thesis questionnaire, LAWMA staff admit to the fact that about 12,000 tons of waste are collected daily and deposited at the designated dumpsites but

unfortunately, the closeness of some of these dumpsites and landfill can cause epidemic.

Aside from the closeness, the road that leads to some of the dumpsites is bad and the methods of decomposing the deposited waste fall below standard. A lot needs to be done regarding resident re-orientation concerning waste disposal in Lagos. Using waste to block drainage channels can stop and indiscriminate waste disposal by Lagos residents also require urgent attention. Recommended solutions to solve altitudinal challenges regarding waste disposal in Lagos State and sustainable incentive methods that will ensure better waste disposal are further explained in the concluding part of the next section.

2.4.3.2 Worker's Laxity and Lack of Commitment

Research has shown that PSP staff and LAWMA staff are poorly remunerated which could be traced to government low minimum wage syndrome. It has become syndrome because the wage given to the worker at the end of the month does not reflect the bad economic reality in the country called Nigeria. As a result of this, workers have been dutifully executing their task accordingly. They pay more attention to another source of income while they are supposed to concentrate on the services which have been poorly paid for by the residents. The residents explore this avenue to make their monthly contribution as stipulated by the law by preferably paying a token directly to some PSP officials for their waste to be lifted. Generally, bad altitude to work has negatively impacted on the PSP service delivery to the Lagos resident and this had further led to efforts in futility by the state government to ensure a cleaned environment that can promote businesses and healthier ecosystems.

2.4.3.3 Insufficient Equipment and Waste Disposal Tools

According to recent reports on LAWMA websites there are 58 registered PSP companies with LAWMA with about 625 staffs to manage about 13,000 streets is unacceptable. The number of trucks dedicated for disposing is also inadequate and falls below expectation due to lack of funding. Separation of waste is carried out manually after PSP operators must have collected the waste at each designated loading station. Because of affordability problem and lack of good road infrastructure in some areas, PSP operator purchases used truck which breakdown occasionally or bad road sometimes halt the transportation of waste from the source to the destination where the dumpsites and landfill are located. Furthermore, before Lagos could actualize its dream on sustainable waste management system, equipment like waste disposal trucks, incinerators, pay loaders, bulldozers, road sweepers, waste separator tanks, compactors, and others has to be adequately provisioned and this required huge invest which cannot be cater for by the small business operator and government and this take us again to economically sustainable waste management system as it is practice in the developed nation e.g. Netherlands, USA, and Sweden.

In a nutshell, "inadequate number of vehicles, lack of spare parts, dearth of fund, poor technical know-how, poor maintenance practices, insufficient funding and lack of motivation have all bedeviled the agency responsible for the disposal and collection of waste (Oresanya, 2013). "The total numbers of vehicles required in the 20 local government areas of Lagos State was 757, while the Lagos State Waste Management Authority, just received 100 brands news waste compactors (Oresanya, 2010). The heaps and stretches of refuse which adorn our roads pollute the environment and disfigure the landscape are nothing but the result of inefficient waste collection and disposal management method (Ogunsote and Adedeji, 2013). Therefore, this thesis tries to provide solutions to these numerous challenges from economic and social responsibility angle in the next section.

2.4.3.4 LAWMA and PSP Officials' Malpractices

Undoubtedly, when workers are happy with their job because of issues like poor wages, poor welfare package, and country economic meltdown and so on, this type of mismanagement issues could lead workers engage in lot of unethical practices like devising another means to meet their respective end means. This implies that workers could begin to take bribes from residents directly to support their wages. Already, in the previous government before the era of this present government, corruption is the order of the day, it has become a canker worm that has penetrated deep into every fabric of the Nigerian civil services including some privately owned companies. It is unacceptable economically and socially for traders that sell in the shopping malls to bribe PSP staff before their waste bin can be removed from the marketplace.

2.4.3.5 Duplication of Task and Weak Law Enforcement

Mostly, there is duplication of task between LAWMA and PSP operators due to lack of proper planning and selfish interest. The state government made a monthly payment blunder deliberately or mistakenly either to settle political jobbers or ignorantly because of lack of strategic ideas. This led to situation whereby LAWMA truck drivers and PSP truck drivers will be wrestling to capture an area because of monthly payment (free money) that the government pays to these two bodies based on the number of tonnages of waste disposed at the dumpsites and landfills. The irony of it is that, if the approach worked effectively, there should not be any waste on Lagos Street, but the reverse is the case. Some LAWMA big shot and PSP operators are fond of collecting money at the end of the month with fake invoices used to receive money claiming that they have lifted waste whereas the streets are still full of waste without being attended to. Again, there is no center of command, it becomes difficult to enforce law on the Lagos residents concerning their monthly dues.

2.4.3.6 Policy Somersault

There are some lapses in the side of government concerning some parts of waste management policies by not allowing it to be tested with time space. The policies are frequently reviewed with the input of major stakeholders. "Engaging the citizenry in decision making fosters ownership of policies and programs and engenders their success, participation not only foster a sense of ownership but encourages support action" (Alhassan and Mohammed, 2013). Initially, residents pay for waste disposing based on what was referred to "pay as you throw" before the emergence of PSP operator in 1997. The policy was reviewed after the partnership establishment with PSP operators such that tenements are allowed to negotiate with registered PSP operators allocated to each area on the amount that will be paid.

In 2004, the policy was reviewed again by the government which allowed a Billing Company nominated by the government to carry out assessment on the amount of waste to be disposed by resident and charged them accordingly. Meanwhile, the residents had accustomed to flat fee for waste service delivery and these inconsistencies adversely affected compliance with the new policy. In some areas where PSP operators cannot reach with their vehicles, scavengers or barrow pusher serve as the middlemen. The tenements pay the scavengers and the scavengers in return pay the PSP operators. But, when the news was fully enforced, there was no consideration for barrow pushers that collect waste on behalf PSP operators where their trucks cannot reach. The illegal operation of the scavengers led to a situation where most of the waste collected from the resident cannot be delivered to the PSP operator and offloading of this waste ends up in undesignated places on the streets and drainage channels.

2.4.4 Lagos State WMS and Waste Management International Best Practices

Comparing waste management activities in Lagos with regional benchmarks. In a study paper called the Waste Management Diary, for example, which notes that actual waste management activity in the State of Lagos consists of private sector participation (PSP) operators in the State of Lagos managing waste disposal to ensure high quality municipal utilities and sustainable waste management. The policy implemented is essentially the door-to-door recycling of garbage. In consideration of the fact that the disposal of waste in the low-income region and part of the medium-income area is more difficult to obtain, for example, the private sector PSP truck drivers need to blow their vehicle horn as they appear on the streets to be served and there is a strong likelihood that the resident will have went to their respective workplace before the trucks came to collect the waste. Meanwhile, the international best practice in Netherlands for instance is that waste is collected from the bin situated in front of the house or in a special room and this allow the waste collector to execute their task without any special dependency on the residents.

2.4.5 Lagos Waste Management Stakeholders

2.4.5.1 The Lagos Private Sector Partnerships PSPs Engagement

Another establishment founded to work with LAWMA to have the private sector involvement in the Lagos State waste management plans is called Private Sector Partnerships (PSPs). Because an open dumpsite was the only available choice for waste management in Nigeria and this method forced government to spend virtually all her budget on cleaning the environment on collecting and transporting the waste to the dumpsites. Thus, in 1997, Lagos State Government decided to spend less and ensure effective waste management practices. These ideas necessitated the institutionalization of LAWMA owned by the Lagos state government for managing the affairs of waste management within the state. LAWMA is directly responsible for retrieving and dumping of industrial, highways, commercial, trade and institutional waste while establish partnership

with PSPs operator for evacuation domestic waste which account for 65% of Lagos waste with the believe that PSP emergence will enable the State to achieve sustainably cleaned and healthy environment without overburden Lagos state government budget.

Initially, registered PSPs operators with LAWMA moved around with their trucks to different localities to collect waste from residents and collect their money on the spot. This type of arrangement between LAWMA and PSP did allow any fund to be generated by the government to satisfy other wants within the waste management process to the extent the government still engage in waste evacuation from these respective communities with public funds. As a result of the lapses, the government reviewed its arrangement with PSP operator in October 2004 to achieve healthier performance and better service delivery. The reviewed approach allow government to collapse individual PSP operator and consolidate them into mega PSP operators, where each mega PSP operator must physically prove that its organization have minimum of 10 refuse dump haulage trucks with capability of each one lifting and dumping 5 - 10 tons of waste daily.

Part of the review made by the government to this arrangement was that direct charges by PSP operator was banned while government is responsible to the Mega PSP operator monthly base on the number of tons of waste deposited to the dumpsite monthly, but it was later made to be ineffective by corrupt practices. Therefore, government recover their investment by billing the tenements via a private billing company and ensure that any violator of the arrangement is made to face the wrath of the law but how effective this method worked would be looked in the next section. Although this reform has led to some improvement, according to the CEO of LAWMA, who says "before the reforms, the number of PSP vehicles in the 3 landfill sites for disposal of waste was between 30 and 80 per day (Oresanya, 2013)."

He went on to state, "About 150 to 800 Tonnage of Solid Waste goes to Landfills (Dumpsites) by way of PSP vehicles every day, while now about 400 to 480 Solid Waste trucks are sent to Olushosun landfill on their own every day (Oresanya, 2010)." Recently, he said that "more than 6,000 to 13,400 tonnages a day of waste are transported daily by PSP Trucks to the 3 recognized dumpsites (Oresanya, 2013). This is a sharp improvement from the previous proposal, but the highways, the median of roads, canals, drains and other illegal sites are still abnormally viewed day by day with refuse (Popoola, 2011). Thus, developing an economic case for Lagos State waste management system in collaboration with effective PSP operation will allow Lagos state to achieve its aim on Sustainable Waste Management System.

2.4.5.2 Lagos Tenements Participation

Another milestone covered by the government is their relationship with the Lagos residents. They can create a policy that incorporated into the state legislation a payment called Tenement levy. They adopted a method whereby the tenement levy for Lagos waste management is paid by occupier of the house (for lease houses) or owners of the house or property. If government could do more to change the percentage of Lagos resident that are paying their levy, they are going to play major roles in keeping Lagos streets clean always if they are made to embrace LAWMA rules and regulations with respect to pricing and credibility of the government policy on waste management.

2.4.5.3 Agro-preneurs

They are currently in discussion with Agriculture practitioners in the state about how they can be one of the major stakeholders of the by-product of waste management after processing. According to Corbin's Main Street Manger Andy Salmons, "Agribusiness is described as an entrepreneur who uses agriculture to create a business." When organic waste resources are processed, it will be transformed into soil manure or fertilizer used for plantation and this conversion process is referred to as composition in the field of agriculture. The studies have shown that "Nigeria and indeed Africa, currently imports several million tons of chemical (inorganic fertilizers for shipment and selling to local farmers, which means that the demand for organic fertilizers in this continent is massive. According to Richbols Environmental Services, an organization focused upon how garbage is turned into fertilizer.

The government's import of these chemical fertilizers is depleting the African countries' very scarce foreign trade; even worse the chemical fertilizers are causing risks to soil, crops and the final user. Therefore, my argument is that if 100% of organic waste collected by PSP operators including the waste LAWMA retrieved directly are 48% of waste received daily at LAWMA dumpsites could be converted to fertilizer and there is a ready agro-preneurs willing to buy the product, this implies that sustainable waste management can be achieved by Lagos State with more revenue generation and sustainable cleaner environment.

2.4.6 Lessons Drawn from Global Waste Management Outlook Reports.

In addition to the lessons derived from Netherlands Waste Management System the following are the key important tools that can be adopted by Lagos State to achieve sustainable waste management system.

2.4.6.1 Dynamics of Political Instruments

Political parties in Lagos State must view waste as a global issue and they must possess the ability to prioritize waste collection, transportation, waste technology and ensure waste management sustainability because this approach will go along way to ameliorate the consequences of paying lip services or doing little or even nothing to address waste management. In other words, the defective action or inaction of the politician can have serious adverse effects on the society and to the economy as a whole if they refuse to seat tight and perform their responsibly as stipulated by the constitution of the federal republic of Nigeria which says in the first paragraph that the welfares of the citizen come first above all in terms of social, economic, environment and security.

The politician must ensure and put in place waste regulations and its thorough implementation and enforcement, will be create avenue within the state legislation for policies that will discourage completely waste generators (industries and residents) from continuous patronage of illegal means of disposing their waste like looking for cheapest available borrow pusher and scavengers as it is in the current situation because this is seriously mitigating against sustainable waste disposal in Lagos and also can discourage potential investors whether local or foreign. Finally, evidence has suggested that waste disposal today in an environmentally friendly way is significantly cheaper and commercially profitable than it is to purify past sin in future years (Kulczycka and Kowalski, 2011).

2.4.6.2 Dynamics of Policy Instruments

Setting strategic goals and guiding principles is not only the best way to initiate sustainable waste management but it will also remove the hands of partisan politicians because it will restructure institutional involvements and policy framework. The policy-making processes must be made with the involvement Lagos residents and other stakeholders and the outcome of the decision must be consistent in its application throughout all the scopes of the systems. The policy must also put into consideration technology selection and financial structure. The technology selection process must be given high priority during policy-making process not only at the technical management level because it will afford the policy makers to put into consideration cost implication, its performance, and technological options rather than just the features. The policy also must take care of financial sustainability approach that provides visible benefits to the Lagos Residents. Within the policy framework of LAWMA, a similar opinion of the Dutchman 'Lansnik's ladder' must be put forward and legislated which is all about resource recovery and reduction of after use waste prone items.

In summary, policy must be put in place to restrict hazardous waste, waste facilities localization, separation of waste from the source, rigorous enforcement of waste tax that will allow the tax to be charged by the commercial house owners monthly. The policy must ensure that house owners collect the waste tax before their house rent with 100% remittance to the LAWMA account and this responsibility by the commercial house owner popularly called landlords in Lagos should be legislated as their social responsibility. Also, there must be a strict policy between PSP operators and LAWMA in terms of Service Level Agreement (SLA) such that the operators must be willing to forfeit 3 months from an area where waste is abandoned unattended to during LAWMA daily inspection.

There must be a policy that ensures that if you are a Lagos resident, it becomes incumbent and obligatory on you to pay waste tax regardless of the economic situation. And for those unemployed categories, the government must be responsible to pay their waste tax as waste tax subsidy. This waste tax will boost investor confidence, and it will also help the private investors to forecast and gain confidence on the security of their capital. In addition, a policy must be put in place by the manufacturer to produce recyclable items. They must be fair to industry that manufacture recyclable items while allowing those industries that threaten the ecosystem with their items to pay heavily for it without consideration.

2.4.6.3 Dynamics of Financial Instruments

With good and proper Lagos Waste Management legislation and policies in place, both foreign investors and local investors will be competing to invest in the Lagos Sustainable Waste Management System. A sustainable financing model must be put in place with the inclusion of Waste generator (Client and the local community), the operators as in the case of PSP operators, Reliable Capital Source and Financial investor on new infrastructures and upgrade of the old ones. This can also involve a business financial model where policy backup ensures that polluters pay. In summary, there are many dimensions to financing waste management. Previous analysis shows that each of the four elements provides multiple alternatives, so there is no single waste management funding mechanism that is 'best' at all activities (Sumukwo et al., 2012).

2.4.6.4 Approach from Economic and Social Instruments

It is an instrument that will be used to direct the activities of the Sustainable Waste Management System stakeholder's behavior, is the purpose served by the Economic Instruments while social instruments are used as tools to communicate policies and strategies, raise consciousness among stakeholders including LAWMA. Economic strategies which can be used for the propagation of sustainable waste management systems:

i. To impose serious fines on residents that deposited mixed waste bin during waste collection and this approach will enforce waste separation policy from the source and it will also serve as strategic waste separation technique from the source.

ii. To enforce special tax on residents that patronizes barrow pushers, scavengers and dump waste in the landfill or incinerator will virtually reduce waste dump on the street and keep the environment clean and healthy.

iii. To promote fiscal benefits will reassure private investor investment in Sustainable Waste Management System in Lagos.

The benefits of the above economic policy will help to give more life to social instruments.

2.4.6.5 Application of Technology Instruments

With the established of strategic objectives and goals to drive Sustainable Waste Management in Lagos as enumerated and explained above under political, policy, economic and social instruments, the next will be technology selection policy. Although there are several technological options to tap from, but the selection of the technology infrastructure and facilities policy must be business and people oriented. The policy must make sure that the selected technology must be seen to be cost effective, adaptive to the climate in Lagos, must be affordable within the financial capacity with long term repayment agreement and it must not be too sophisticated to operate. The procedure and procurements of the technology tools must be transparent because it will be paid for indirectly by the resident of Lagos State. The cycle of life of organic waste conversion shows that gradually improving selected technology could begin by limiting waste disposal by ensuring that waste is converted to a different source of livelihood. If that is done, it will benefit public health and reduce the threat posed by ineffective waste management to the environment.

2.4.6.6 Integrated Waste Management Systems (e-Waste Management)

In addition to waste instruments, over some time now, there have been arguments surrounding effective handling of solid waste. Some people argue that waste management is a way of handling and adopting a waste disposable method to ensure that environmental health is not endangered. Another group of people argued that reduction of waste which involves minimizing the produced waste via using it for alternative purposes including extension of their end of life for some products is a way forward. However, research has shown that the combination of the two approaches will be preferred, and this method is called Integrated Waste Management System. Examples of the advanced waste treatment system include burial waste in sanitary waste dumps, waste consumption in incinerators for mass fires, reuse, recycle and composting. In the Lagos States, an integrated waste management system would eliminate about 80-90 percent of urban solid waste.

2.4.6.7 Waste Recycling

The last option under the technology instrument is Waste recycling. Research by the WHO has shown in industrialized countries there are concerns about waste disposal syndromes despite progress made in sanitary waste disposal technology and incineration, and the control of the direct exposure of humans to waste in related facilities. Although few studies remain, certain epidemiological markers of health consequences from sites and older incinerators such as cancer occurrence, death, birth defects, low birth weight is considered in epidemiological study (IJgosse et al., 2014). Therefore, recycling of recovered resources from items disposed can be a way forward to reduce threat posed by recyclable waste that are not attended to.

2.4.7 Section Summary

This section so far has been addressing the current practices, progress made so far in terms of partnership with private sector, involvement of tenements, and diversification of waste produce as raw material that will be consumed as fertilizer by the agro-preneurs. This section also highlights and explains the factors militating against the actualization of sustainable waste management system in the State. At the end of this section, all the theoretical questions forming part of the research questions were answered and possible suggestions are enumerated to also answer the central question.

2.5 Health and Environmental Impacts of Solid Waste

Modernisation and development have had their share of drawbacks, which are attributable to emissions of earth—whether it be ground, air, or water—a crucial factor of concern. With the global population growing and demand for food and other important goods, the amount of waste generated daily by any household has been increasing. The waste is eventually disposed of in urban wastes recycling centers from which municipalities are gathered to be thrown back into waste dumps and sites. However, not all this waste is processed and delivered to final dumpsites due either to resource crunch or inefficient facilities. If management and disposal are handled poorly at this point, it can have significant consequences on health and environmental issues.

Waste, particularly excretes and other liquid and solid waste of households and the population which are not properly handled, pose a significant health risk, and contribute to the spread of infectious diseases. Attracts flies, rodents and other animals that transmit disease. Unattended garbage remains about. It is usually the wet waste that breaks down and produces a foul smell. This adds to inadequate grooming and thus to an increasing range of health issues. The pestilence in Surat is a prime example of a city struggling because of the municipal body's callous approach towards cleanliness in the city. Another source of ill health is plastic waste. Therefore, unnecessary solid waste produced by such prevention measures must be managed.

2.6 Impacts of Solid Waste on Health

A population in places where no suitable waste disposal system is available, particularly pre-school kids, is at risk from un-scientific waste disposal; waste-worker; and hazardous and infectious materials processing facilities work in. This includes Another high-risk community consists of residents in the vicinity of a waste dump and others whose water source has been polluted by waste disposal or site leaks. The risk of injuries and illness often increases if solid waste is not collected.

Organic domestic waste represents a danger as it ferments, generating conditions conducive to micro-pathogens' survival and development. Direct handling of solid waste may make the waste workers and the rag pickers the most susceptible to different kinds of infectious and chronic diseases. Hazardous waste pollution will affect public health and children are more vulnerable. Direct exposure can lead to diseases through chemical exposure since the release into the atmosphere of chemical waste results in chemical intoxication. In different parts of the world, several studies have been undertaken to relate health to hazardous waste.

Agricultural and business pollution can also contribute to significant health risks. Apart from that, industrial hazardous waste co-disposal of urban waste can also subject people to toxic and nuclear hazards. Uncollected solid waste will also block the drainage of the rainwater leading to stagnant water sources becoming a breeding ground for the disease. Waste dumped by a stream allows the body of water or the groundwater source to become polluted. Untreated sewage is directly released into rivers, oceans and lakes and the food system accumulates toxic compounds in the plants and animals feeding on the food chain.

Hospital and other clinical waste management needs careful consideration, as it can cause serious health risks. This waste is also disposed of with daily non-infectious waste created by hospitals, health clinics, medical laboratories, and testing centers, such as disposable syringes, bandages, swabs, plasters, and other forms of infectious waste.

Waste and recycling sites may also pose community health hazards. Incorrectly controlled incineration plants cause air pollution, and poorly maintained and built waste sites draw all sorts of disease transmitting insects and rodents. These sites should preferably be placed at a reasonable distance from all human settlements. Deposits should be properly walled and lined up to guarantee that the local source of groundwater has no leaks.

If proper steps are not taken, recycling too entails health risks. Toxic contamination can occur for employees who work with chemical and metal waste. The handling of waste from health care requires extra care, as the effect of wounds caused by discarded syringes may pose significant health threats such as hepatitis B and C. Injuries and close interaction with these contagious products can occur from rag picker and others engaged in scaling waste dumping for items which can be recycled.

2.6.1 Diseases

Certain contaminants are extremely poisonous and may cause sickness or death if released unchecked, e.g., cyanides, mercury, and polychlorinated biphenyls. Many reports have shown that people exposed to toxic waste have excesses of cancer. In different parts of the world, several studies have been undertaken to relate health to hazardous waste.

2.7 Impacts of Solid Waste on The Environment

The degradation of waste into chemical compounds is a common cause of local contamination. In developed countries, this issue is extremely acute. Very few deposits in developing countries will follow concurred environmental requirements in developed countries, and few locations would certainly be specifically assessed until they can be used in future with small budgets. Here the dilemma is compounded by difficulties relating to rapid growth. Gas discharge by the decomposition of waste is an important environmental issue. Methane is an anaerobic bacterial by-product, and these bacteria grow in high moisture sites. Up to 50% of the deposit gas content will achieve methane concentrations with maximal anaerobic decomposition (Wang et al., 2011). Their exposure to the improved greenhouse gas effects and climate change would be a further issue for these emissions. The handling of liquid leachate varies across the sites. The hazard to surface and groundwater systems at local level is Leachate. The use of thick clay layers on the ground of waste wells, combined with plastic sheeting liners, is commonly considered to be an ideal strategy of storing excess liquid. This encourages waste not to penetrate, but to evaporate.

2.8 Health Impacts of Industrial Recycling of Non-Biodegradable Materials

Examining just the commercial sectors, as recycling takes place in several forms. There are considerations of the health effects of the procedures on those employed in the sector, but certain industrial recycling processes often result in chemical emissions that can harm human health. Analysis in the literature shows that there is no objective data about how these mechanisms influence the wellbeing of the population. What strategy do you take for people who work in public health? A precautionary strategy may be the safest, but public contact must be treated very carefully, since it has been shown that disturbing notices may induce undue fear and more health problems than exposure itself. Conversely, contamination from the greater atmosphere exposes a great many people, and this can have drastic consequences even though there is a comparatively little chance. In most cases the effects on the climate and health arising from recycling are smaller than if the goods were made from raw materials.

2.9 Importance of Recycling

The need to use discarded materials is high and there are elevated health risks of non-treatment of waste in the world as a phenomenal occurrence. Recycling is a big event. Recycling has become an urgent and essential matter and cannot be swept away with the alarming number of waste sites and other wastes which pollute our forests, beaches, oceans, and other natural ecosystems. More interesting, though, is that recycling still provides more cost-efficient products in the manufacture of new goods, apart from the fact that reuse tends to minimize the waste content of waste disposable areas, protecting the earth from deterioration. The recycling industry varies around the globe. While recycling waste is done by need in many areas of the developed world and stringent legislation encourages it, nearly 100% of waste produced goes to sites of waste in the most low- to medium-income developing countries.

The recycling dilemma is being handled with children's glove in Nigeria as is the case with many other developed economies. Waste law is fragmented, scanty, outdated, and counterproductive in a country where it is available. Whereas certain urban cities, regulations and regulations forbid littering, suitable sanitation facilities are insufficient. This is why tonnes, incinerations and land filling are dumped, incinerated, and converted into huge resources for the region. Recycling waste must be adopted as a necessity in Nigeria because recycling is seen as an important economic means of development. In addition to contributing to the economy, recycling also helps save time and money and provides opportunities and tremendous profits.

If measures are put in place to ensure that the recycling issue is taken seriously, then Nigeria can benefit from recycling its waste. To discourage illegal disposal of garbage, the central Government and government must enact regulations and follow the legislation in the case of a mistake. Think of the jobs it would do, aside from the environmental benefits. The contents of each waste are further divided and taken to recycling plants before putting into various bags for paper, plastics, bottles, and so on. The workforce of your waste is substantial in logistics and manufacturing and so you help to keep them working and help their families. What could be more ideal for producing and maintaining citizens working in challenging economic times?

The prospect of global climate change could lead to decisive steps to slow down the pace of emissions if this phenomenon is not abolished. In this light, the governments should also set the required goals for recycling. More and more people continue to take daily steps to accomplish these goals. This would minimize the volume of waste to the sites of the waste processing and reduce the amount of ground filled sites. Better land use is also assured for more constructive uses.

2.10 Economic and Financial Relevance of Recycling

The topic of the efficiency of waste recycling is what the Nigerian government needs to determine, broadly speaking there's a discussion of the economic efficiency of waste recycling in developing countries whereby 10,000 tons of waste discarded on sites can provide six works, and the 10,000 tons of recycling can generate more than 36 jobs. The cost-effectiveness of increased employment is nevertheless unproven. Nobody wants to remain in the vicinity of a site and as regions urbanize, it is getting harder to locate land that is dump able and convenient for the people around them. When this is applied to the growing legislation, it becomes harder to find deposits easily and diplomatically. This dilemma also drives policymakers to stall new sites by advocating alternate disposal approaches (Alhassan and Mohammed, 2013).

Dumping takes considerably less money and time than recycling, which requires reprocessing of recycled material, or composting, which includes extensive sorting. This superior productivity is an important reason why waste management is dominated by ground filling, even though other approaches are more environmentally sound. Tipping or disposal fees historically have been charged by waste transport firms, both public and corporate, to dump their waste. Depot owners and waste control companies traditionally benefited from the service. Counties charge a housing charge from a landfill, which is usually used to finance the county's solid waste collection agency. They also charge the hosting fee to improve alternate waste treatment methods such as recycling and composting.

The producers can substantially minimize manufacturing costs by processing consumed products based on the materials. For eg, aluminum canisters are mostly discarded because they cost more than reused to process their raw materials. In comparison, recycling steel provides little economic gain over raw material refining, which decreases the motivation for its recycling (Guerrero et al., 2013).

2.11 Types of Solid Waste to Be Recycled

Collection, storage, care, recycle, reuse of energy and disposal of solid waste in urban areas (Oresanya 2010). MSWM applies to the collection and disposal of solid waste in urban areas. The priority of MSWM is to safeguard the health of the population in urban areas, particularly in groups with little income that are overwhelmingly impacted by poor waste management. Secondly, the MSWM seeks to foster balanced environments, through emission protection including water, air, soil, and cross-media contamination and the conservation of environmental biodiversity in urban areas. Third, by delivering waste management facilities and effective usage and recycling of usable goods and energy, MSWM promotes urban economic growth. Finally, in the industry itself, MSWM is targeted at generating jobs and profits.

To achieve MSWM's objectives, a comprehensive waste management system needs to be built that meets the needs of the whole urban society, especially those of the urban poor. The fundamental requirement of

sustainability includes the consumption and control of the waste management system by society and its local authorities. The framework must be customized, using, and improving the capability of all parties involved, including the households and communities which need service, to the specific circumstances and problems of the city and the locality (Onibokun et al., 2012). From the context of the whole resource use period of the sustainable solid waste management system should be considered, including production, processing and usage and the storage and recycling of waste. While efficient waste collection and disposal should be given immediate priority, waste reduction should also be followed as equally significant long-term targets at manufacture and recycling.

Sustainable waste management policy principles include (i) minimizing (cutting) waste production; (ii) optimizing waste value through recycling, fixing and reuse; and (iii) maintaining safe, environmentally sustainable waste disposal. The general feasibility and effectiveness of urban management and the ability of responsible authorities relies on the efficient management of solid waste. The total economic performance of waste generation and waste disposal systems relies on the one hand, on installation, facilities, and services' life cycle prices, and, secondly, on the long-lasting economic impact of the waste management scheme. Economic benefits may include decreased disease and wellbeing costs, enhancing environmental standards and valuation of land, minimizing anxiety and growing market volumes (Ogu, 2010).

One of the biggest problems facing Lagos State is sustainable solid waste disposal. As with other modern cities in a developed world, the government and institutions formed to handle waste in the State of Lagos do not provide efficient waste management quality and effectiveness. Indeed, the inefficient recycling practices, inappropriate treatment and insufficient transport of solid waste are characteristic of solid waste management in Lagos state and surroundings. The inability to recycle waste, the lack of repair and reuse of waste, regulation bottlenecks, insufficient waste treatment and weak local planning, combined with rapid population growth and urbanization, all have led to a waste congestion on the road that has great consequences. The issue of waste management in Lagos has also been the lack of effective waste management technology in the state of Lagos.

Scheinberg records a high level of mortality and morbidity that has been seen in most metropolitan cities in developed world countries in the unsafe treatment and management of solid waste (Scheinberg, 2011). Moreover, metropolitan towns in developed countries face threats to their unsustainability in the treatment of solid waste. Solid waste disposal often presents a serious threat to the delicate ecosystem in human beings and is short-term and long-term (Kowalski and Kulczycka 2013). Solid waste management systems in other states vary greatly from those in the State of Lagos as well as structure, density, management, waste volumes, access to waste disposal, regulations, knowledge, and mindset are concerned. The waste is thicker, wetter, and more corrosive in Lagos.

Again, local authorities spend 20 -5% of their collection and balancing profits on recycling but can only waste 50 -70% of the municipality's solid waste to extract and dispose of it (Medina, 2010). These problems can be solved only if there is a system within which 85% of solid waste generated in the state of Lagos is transformed into material of economic value which will generate revenue, make the environment very uninhabitable for citizens and minimize waste to farm animals and agricultural property. Since high savings are a requirement for investment and quick growth, Wilson suggests that the income distribution that is diminishing to entrepreneurship is good for growth and is assumed to have a strongly marginal saving tendency (Wilson, 2015).

Abila and Kantola on the other hand consider that rapid economic development in the new urban market contributes to labor migration from the low productivity sector to urban centers, which leads to a rise in the number of inequities that will later diminish (Abila and Kantola, 2013). However, in recent evidence of cross-country studies as clearly expressed by Lee, among other reasons, this traditional wisdom has not remained unchallenged in the literature (Lee, 2013). Economic theory has identified a close association between economic development and urban growth. Thus, the relationship between urbanization and per capita income is favorable.

In 2009, for example, UN-Habitat estimates found a 40 percent (395 million) proportion of Africans living in cities. However, by 2050, the population estimate in the metropolitan region will have risen to 60 percent (2010-2010) to 1,23 billion. The study takes the opinion that fast population development is either positive or poor, unless such rapid growth contributes to urban congestion, slums, and rising emissions from the rise in solid domestic and industrial waste. As Nigeria seeks to tackle the issue of effective solid waste management, in line with urbanization and industrialization, this research aims to evaluate the health and economic consequences of waste (Oresanya, 2013).

2.12 Methods of Waste-Management/Waste Disposal

2.12.1 Landfills

The most common method of waste disposal now used is the dumping of everyday waste/garbage into the sites. This waste management process focuses on the waste dumping in the ground. In developed countries, waste management is normal. A procedure is used to minimize the smells and risks of waste until it is placed in the soil. Although this is the most common method of disposing of waste, it is far from the only technique and can take a variety of space with it. This practice is becoming less popular today, but the lack of space and the prevalence of methane and other deposit gases will create various problems with pollution. Air and water contamination contributes to waste landfills that seriously impact the environment and can prove lethal for human and animal lives. Some places are rethinking the use of sites.

2.12.2 Incineration/Combustion

Incineration and/or combustion is a method of disposal that uses urban solid waste to process residues into gaseous materials at high temperatures. This approach has the greatest benefit of minimizing the volume of solid waste to 20-30 percent of its initial volume, reducing its area, and reducing the burden on sites. This method is also called thermal treatment, in which solid waste materials are converted into fire, gas, steam and ash by incinerators. Incineration is very much available in countries where drainage capacity, like Japan, is no longer available.

2.12.3 Recovery and Recycling

Resource recovery is the method of taking valuable unused items for a particular potential purpose. These products are then processed in the form of heat and electrical power or fuel to remove or recover materials and services or turn them into electricity. Recycling is the practice of turning waste into new goods to avoid the use of electricity and fresh raw materials. Recycling is the third link of the hierarchy of waste disposal, recycling, and recycling. The goal of recycling is to minimize electricity consumption, minimize waste storage volumes, reduce air pollution, and water pollution, decrease emissions of greenhouse gases and conserve natural resources for future use.

2.12.4 Plasma Gasification

Plasma gasification is a different method of waste treatment. Plasma is a predominantly electrically charged or strongly ionized gas. Lighting is one form of plasma that creates temperatures that surpass 12,600 °F. With this waste disposal process, the vessel uses characteristic plasma torches operating at +10,000 °F which create a gasification zone of up to 3,000 °F for the conversion of solid or liquid waste into syngas. During the handling of solid waste by plasma gasification, the molecular bonds of the waste are broken down because of the extreme heat in the vessels and the elementary materials. Thanks to this process, waste and toxic chemicals have been destroyed. This method of waste management offers green energy and several other wonderful benefits.

2.12.5 Composting

Composting is a simple and natural method of biodegradation that takes in organic waste, plant and garden residues and kitchen waste. Composting, usually used for organic farming, happens by allowing organic materials to stay in one location for months before microbes break down. Composting is one of the better ways of waste management, because it can transform hazardous agricultural materials into usable compost. In the other hand, the procedure is sluggish and takes up a lot of space.

2.12.6 Waste to Energy (Recover Energy)

Waste to energy (WtE) processes include conversion of non-recyclable waste into a series of processes for heat, electricity, or power. This energy supply is a source of green energy, since non-recyclable waste can still be used to produce energy. It will also lead to reducing CO_2 emissions by compensating for fossil fuel energy needs. Waste energy generating in the form of heat or electricity from waste, often commonly recognised by the acronym WtE.

2.12.7 Avoidance/Waste Minimization

The easier means of handling waste is to minimize waste material

production and thereby decrease the volume of waste that goes into waste disposal sites. Waste reduction can be achieved by recycling old products such as containers, bags, rehabilitation of damaged objects rather than new ones, avoidance of use of equipment such as plastic bags, reuse of secondhand items and purchasing items of less design. Recycling and composting are a few of the best waste disposal strategies. Composting is only possible to a limited degree in regions where manure can be blended with agricultural soils or used for landscape purposes, either by private individuals or. Recycling is popular globally and refers to the list of most recyclable materials, with plastic, paper, and metal. For its original purpose, much of the material recovered is reused.

2.12.8 The Bottom Line

There are some forms of waste that are deemed dangerous and cannot be disposed of without special handling to avoid pollution. One example of that is biomedical waste. This is seen in healthcare centres and the like. This unit is fitted with a special waste disposal system for this form of waste.

3. Research Methods

3.1 Preamble

The section centered on the method of data collection and interpretation, the research design adopted the population of the study, samples and sampling, research tools and validation, data analysis method and technique constraint.

3.2 Research Design

Descriptive research survey design used since the design has the advantage of gathering data from a very large population subset at a relatively low cost; and that this research design gathers the required, detailed, and factual details that would be needed in the analysis of this report. This architecture makes it easy to produce and interpret quantities of data to produce conclusions that can reflect the opinions of the whole sample community.

3.3 Population of the Study

The population of the study comprised Eight Hundred (800) participants from members of the public residing in Lagos within Yaba Local Council Development Area of Lagos State.

3.4 Sample Size and Sampling Technique

The population of this survey drew a random sample to offer the real and equal views of the whole study population. The convenience sampling method was chosen because it makes the sampling process quicker, simpler, and more appraisable for the researcher.

The sample size was derived using Yamane (2001) formular as given below:

$$n = \frac{N}{1+N(e)2} \quad (1)$$

Where:

n = Sample size
N = Population of the study
e = Level of significance/Error estimate at 5%
1 = Constant

$$n = \frac{800}{1+800(0.05)^2}$$

$$n = \frac{800}{1+800(0.0025)}$$

$$n = \frac{800}{1+2}$$

$$n = \frac{800}{3}$$

$$n = 226.67$$
$$n = 227$$

The sample size of the study as determined from the population above is 227.

3.5 Data Collection Instrument and Validation

A close-ended questionnaire (See Appendix) was used as the research instrument of this research based on the Likert 5-point scale for this study. The researcher ascertained the validity of the instrument by giving a draft copy of the questionnaire to the supervisor for necessary scrutiny and correction before administration of the questionnaire to the participants of this study.

3.6 Method of Data Analysis

The descriptive statistics were used to interpret data from the research participants while the hypothesis testing was carried out using Pearson's statistical correlation tool.

4. Data Presentation and Analysis

4.1 Preamble

In this section, the data obtained from participants in this analysis are discussed and analyzed. The results of the participants were also used to help the different issues of study. The answers obtained form the foundation of this section's analytical analysis. The evaluation of the study's hypotheses is verified. This segment of the study will be closed after discussion of the results.

4.2 Presentation and Descriptive Analysis of Data

The survey participants were given a total of two hundred and forty (240) copies of the questionnaire. A total of 227 copies of the administered (94.6 percent) questionnaire were completed dully and sent back by the participants, and the same is given, evaluated, and translated below in the following edition the questionnaire was returned.

Table 2: Analysis of Demography Statistics

Variables	Category	Frequency	Percentages (%)
Gender	Male	126	55.5%
	Female	101	44.5%
	Total	**227**	**100%**
Age	Below 20 years	35	15.4%
	21- 25 years	78	34.4%
	26 - 30 years	58	25.6%
	31 - 35years	19	8.4%
	36 years and above	37	16.3%
	Total	**227**	**100.0%**
Educational Background	OND or Equivalent	80	35.2%
	BSc/HND	68	30.0%
	MBA/MSc	38	16.7%
	Others	41	18.1%
	Total	**227**	**100%**
Marital Status	Single	82	36.1%
	Married	109	48.0%
	Divorced	17	7.5%
	Widowed	14	6.2%
	Separated	5	2.2%
	Total	**227**	**100%**

From Table above, the demographic statistics of two hundred and twenty-seven (227) participants are presented. From the table, it is demonstrated that 126 (55.5%) participants are male while 101 (44.5%) participants are female. By implication therefore, majority of the participants are male.

Also, in the case of the age of the participants, 35 participants representing (15.4%) were below 20years; 78 participants representing (34.4%) were within 20 and 25years age bracket; 58 participants representing (25.6%) were within 26 and 30years age bracket; 19 participants representing (8.4%) were within 31 and 35 years while 37 representing (16.3%) were within 36 years and above. It therefore implies that most of the participants were within 21 and 25-years age bracket.

In the case of educational qualification, 80 participants representing (35.2%) had OND or its equivalent; 68 participants representing (30.0%) had BSc/HND; 38 participants representing 16.7% had MSc /MBA qualification while 41 participants representing (18.1%) had other certificates apart from the afore-mentioned certificates. This implies that the majority of had OND or its equivalent.

In comparison, for the marital status, 82 participants were single, representing 36.1% of all the participants involved; 109 participants of 48.0% were married and 17, representing 7.5% were divorced; 14, representing 6.2% were widows and 5,2% were divided. It means therefore that most participants were married in this sample.

4.3 Analysis of Research Questions 6 - 10 on Current Waste Management System in Yabalcda and Employment Opportunities

Research Question 1: What is the relationship between the current waste management system in Yaba LCDA and employment opportunities?

Table 3: Current Waste Management System and Employment Opportunities.

S/N		SA	A	U	D	SD
6.	Promotion of waste disposal culture is a current waste management system	97 (42.7%)	89 (39.2%)	18 (7.9%)	16 (7.0%)	7 (3.1%)
7.	Government advocacy on proper waste disposal influences environmental health	82 (36.1%)	114 (50.2%)	8 (3.5%)	15 (6.6%)	8 (3.5%)
8.	Enforcement of waste collection laws creates employment opportunities	79 (34.8%)	127 (55.9%)	6 (2.6%)	12 (5.3%)	3 (1.3%)
9.	Monitoring careless waste disposal in open dumpsites is a current waste management system	88 (38.8%)	106 (46.7%)	10 (4.4%)	11 (4.8%)	12 (5.3%)
10	Penalizing indiscriminate littering of highways is a current waste management system	96 (43.2%)	103 (45.4%)	9 (4.0%)	13 (5.7%)	6 (2.6%)

Table 3 demonstrates that 96 (42.7%) of the participants strongly concurred with the research question that states that the promotion of waste disposal culture is a current waste management system, 89 (39.2%) of the participants concurred, 18 (7.9%) of the participants of the study remained neutral, 16 (7.0%) of the participants did not concur while the remaining 7 (3.1%) of the participants did not concur. By implication therefore, a total of 186 participants representing 81.9% of the entire participants of the study concurred that the promotion of waste disposal culture is a current waste management system.

Also, the above Table demonstrates that 82 (36.1%) of the participants strongly concurred with the research question that states that government advocacy on proper waste disposal influences environmental health.114 (50.2%) of the participants concurred, 8 (3.5%) of the participants of the study remained neutral, 15 (6.6%) of the participants did not concur while the remaining 8 (3.5%) of the participants strongly did not concur. By implication therefore, a total of 196 participants representing 86.3% of the entire participants of the study concurred that government advocacy on proper waste disposal influences environmental health.

Furthermore, 79 (34.8%) of the participants strongly concurred with the research question that states that the enforcement of waste collection laws creates employment opportunities. 127 (55.9%) of the participants concurred, 6 (2.6%) of the participants of the study remained neutral, 12 (5.3%) of the participants did not concur while the remaining 3 (1.3%) of the participants strongly did not concur. By implication therefore, a total of 206 participants representing 94.7% of the entire participants of the study concurred that the enforcement of waste collection laws creates employment opportunities.

In addition to the above, 88 (38.8%) of the participants strongly concurred with the research question that states that monitoring careless waste disposal in open dumpsites is a current waste management system. 106 (46.7%) of the participants concurred, 10 (4.4%) of the participants of the study remained neutral, 11 (4.8%) of the participants did not concur while the remaining 12 (5.3%) of the participants strongly did not concur. By implication therefore, a total of 194 participants representing 85.5% of the entire participants of the study concurred that monitoring careless waste disposal in open dumpsites is a current waste management system. Besides, 96 (43.2%) of the participants strongly concurred with the research question that states that penalizing indiscriminate littering of highways is a current waste management system.103 (45.4%) of the participants concurred, 9 (4.0%) of the participants of the study remained neutral, 13(5.7%) of the participants did not concur while the remaining 6 (2.6%) of the participants strongly did not concur. By implication therefore, a total of 199 participants representing 88.6% of the entire participants of the study concurred that penalizing indiscriminate littering of highways is a current waste management system.

4.4 Analysis of Research Questions 11 - 15 on Methods Used in Waste Collection/Management and Economic Opportunity in Yaba LCDA

Research Question 2: How are the methods used in waste collection and management relate with economic opportunity in Yaba LCDA for residents within the State?

Table 4: Methods Used in Waste Collection/Management and Economic Opportunity.

S/N		SA	A	U	D	SD
11	Landfilling is a method of waste collection and management	44 (19.4%)	122 (53.7%)	14 (6.2%)	31 (13.5%)	16 (7.0%)
12	Incineration is a disposal management method	101 (44.5%)	73 (32.2%)	16 (7.0%)	27 (11.0%)	10 (4.4%)
13	Recycling is a method of collecting waste products	59 (26.0%)	129 (56.8%)	8 (3.5%)	26 (11.5%)	5 (2.2%)
14	Plasma gasification is a form of waste management method	66 (29.1%)	123 (54.2%)	16 (7.0%)	10 (4.4%)	12 (5.3%)
15	Composting is another method of waste management method	56 (24.7%)	133 (58.6%)	14 (6.2%)	15 (6.6%)	9 (4.0%)

Table 4 demonstrates that 44 (19.4%) of the participants strongly concurred with the research question that states that land filling is a method of waste collection and management.122 (53.7%) of the participants concurred, 14 (6.2%) of the participants of the study remained neutral, 31(13.5%) of the participants did not concur while the remaining 16 (7.0%) of the participants strongly did not concur. By implication therefore, a total of 166 participants representing 73.1% of the entire participants of the study concurred that land filling is a method of

waste collection and management.

Furthermore, 101 (44.5%) of the participants strongly concurred with the research question that states that incineration is a disposal management method 73 (32.2%) of the participants concurred, 16(7.0%) of the participants of the study remained neutral, 27 (11.0%) of the participants did not concur while the remaining 10 (4.4%) of the participants strongly did not concur. By implication therefore, a total of 174 participants representing 76.7% of the entire participants of the study concurred that incineration is a disposal management method.

Also, 59 (26.0%) of the participants strongly concurred with the research question that states that recycling is a method of collecting waste products.129 (56.8%) of the participants concurred, 8 (3.5%) of the participants of the study remained neutral, 26 (11.5%) of the participants did not concur while the remaining 5 (2.2%) of the participants strongly did not concur. By implication therefore, a total of 188 participants representing 82.8% of the entire participants of the study concurred that recycling is a method of collecting waste products.

The Table also demonstrates that 66 (29.1%) of the participants strongly concurred with the research question that states that plasma gasification is a form of waste management method.123 (54.2%) of the participants concurred, 16 (7.0%) of the participants of the study remained neutral, 10 (4.4%) of the participants did not concur while the remaining 12 (5.3%) of the participants strongly did not concur. By implication therefore, a total of 189 participants representing 83.3% of the entire participants of the study concurred that plasma gasification is a form of waste management method.

In addition to the above, 56 (24.7%) of the participants strongly concurred with the research question that states that composting is another method of waste management method. 133 (58.6%) of the participants concurred, 14 (6.2%) of the participants of the study remained neutral, 15 (6.6%) of the participants did not concur while the remaining 9 (4.0%) of the participants strongly did not concur. By implication therefore, a total of 189 participants representing 83.3% of the entire participants of the study concurred that composting is another method of waste management method.

4.5 Analysis of Research Questions 16 - 20 on Challenges Facing Waste Collection and Environmental Sanitation

Research Question 3: To what extent do different challenges facing waste collection and management in Yaba LCDA relate with environmental sanitation?

Table 5: Challenges Facing Waste Collection and Management and Environmental Sanitation

S/N		SA	A	U	D	SD
16	Citizens indiscriminately littering of the highways with no civic concern is a challenge to environmental sanitation	81 (35.7%)	119 (52.4%)	4 (1.8%)	16 (7.0%)	7 (3.1%)
17	Poor maintenance practices and insufficient funding pose challenge to environmental health	81 (35.7%)	111 (48.9%)	7 (3.1%)	24 (10.6%)	4 (1.8%)
18	Poor work attitude of LAWMA workersis a challenge to environmental sanitation	78 (34.4%)	122 (53.7%)	9 (4.0%)	15 (6.6%)	7 (3.1%)
19	LAWMA officials' malpractices pose challenge to environmental sanitation	73 (32.2%)	117 (51.5%)	15 (6.6%)	15 (6.6%)	7 (3.1%)
20	Lack of basic waste management infrastructure constitutes challenge to waste collection	64 (28.2%)	117 (51.5%)	19 (8.4%)	11 (4.8%)	16 (7.0%)

Table 5 demonstrates that 81 (35.7%) of the participants strongly concurred with the research question that states that citizens indiscriminately littering of the highways with no civic concern is a challenge to environmental sanitation,119 (52.4%) of the participants concurred, 4 (1.8%) of the participants of the study remained neutral, 16 (7.0%) of the participants did not concur while the remaining 7 (3.1%) of the participants strongly did not concur. By implication therefore, a total of 200 participants representing 88.1% of the entire participants of the study concurred that citizen indiscriminately littering of the highways with no civic concern is a challenge to environmental sanitation.

Furthermore, 81 (35.7%) of the participants strongly concurred with the research question that states that poor maintenance practices and insufficient funding pose challenge to environmental health,111 (48.9%) of the participants concurred, 7 (3.1%) of the participants of the study remained neutral, 24 (10.6%) of the participants did not concur while the remaining 41.8% of the participants strongly did not concur. By implication therefore, a total of 192 participants representing 84.6% of the entire participants of the study concurred that poor maintenance practices and insufficient funding pose challenge to environmental health.

Also, 78 (34.4%) of the participants strongly concurred with the research question that states that poor work attitude of LAWMA workers is a challenge to environmental sanitation,122 (53.7%) of the participants concurred, 9(4.0%) of the participants of the study remained neutral, 15 (6.6%) of the participants did not concur while the remaining 7 (3.1%) of the participants strongly did not concur. By implication therefore, a total of 200 participants representing 88.1% of the entire participants of the study concurred that poor work attitude of LAWMA workers is a challenge to environmental sanitation.

In addition to the above, 73 (32.2%) of the participants strongly concurred with the research question that states that LAWMA officials' malpractices pose challenge to environmental sanitation, 117 (51.5%) of the participants concurred, 15 (6.6%) of the participants of the study remained neutral, 15 (6.6%) of the participants did not concur while the remaining 7 (3.1%) of the participants strongly did not concur. By implication therefore, a total of 190 participants representing 83.7% of the entire participants of the study concurred that LAWMA officials' malpractices pose challenge to environmental sanitation.

Again,64 (28.2%) of the participants strongly concurred with the research question that states that lack of basic waste management infrastructure constitutes challenge to waste collection, 117 (51.5%) of the participants concurred, 19 (8.4%) of the participants of the study remained neutral, 11 (4.8%) of the participants did not concur while the remaining 16 (7.0%) of the participants strongly did not concur. By implication therefore, a total of 181 participants representing 79.7% of the entire participants of the study concurred that lack of basic waste management infrastructure constitutes challenge to waste collection.

4.6 Testing of Hypotheses

The hypotheses postulated for the study were tested and run on the statistical package; SPSS Version 21 at 0.05 level of significance. The hypotheses were tested using Pearson Product Moment Correlation.

Hypothesis One

H_0: There is no relationship between current waste management system in Yaba LCDA and employment opportunities.

Correlations

		Enforcement of waste collection laws creates employment opportunities	Promotion of waste disposal culture is a current waste management system
Enforcement of waste collection laws creates employment opportunities	Pearson Correlation	1	.023
	Sig. (2-tailed)		.729
	N	227	227
Promotion of waste disposal culture is a current waste management system	Pearson Correlation	.023	1
	Sig. (2-tailed)	.729	
	N	227	227

The Table above shows the result of the Pearson's' Product Moment Correlation Coefficient (PMCC) carried out for the relationship between current waste management system in Yaba LCDA and employment opportunities. The correlation is significant at 0.05 level. So, the correlation coefficient is therefore statistically significant at 95% confidential level. From the result above it shows that there is positive correlation between current waste management system in Yaba LCDA and employment opportunities at r = (0.023). Hence, the stated hypothesis that says *"There is a relationship between different challenges facing waste collection and management in Yaba LCDA and environmental sanitation" was accepted*.

Hypothesis Two

H_o : There is no relationship between methods used in waste collection and management in Yaba LCDA and economic opportunity for residents within the State.

Correlations

		Recycling is a method of collecting waste products	Plasma gasification is a form of waste management method
Recycling is a method of collecting waste products	Pearson Correlation	1	.097
	Sig. (2-tailed)		.145
	N	227	227
Plasma gasification is a form of waste management method	Pearson Correlation	.097	1
	Sig. (2-tailed)	.145	
	N	227	227

The Table above shows the result of the Pearson's' Product Moment Correlation Coefficient (PMCC) carried out for the relationship between methods used in waste collection and management in Yaba LCDA and economic opportunity for residents within the State. The correlation is significant at 0.05 level. From the result above it shows that there is positive correlation between methods used in waste collection and management in Yaba LCDA and economic opportunity for residents within the State at r = (0.097). Hence the stated hypothesis that says "*There is a relationship between methods used in waste collection and management in Yaba LCDA and economic opportunity for residents within the State" was accepted.*

Hypothesis Three

H_o : There is no relationship between different challenges facing waste collection and management in Yaba LCDA and environmental sanitation.

Correlations

		Citizens indiscriminately littering of the highways with no civic concern is a challenge to environmental sanitation	Poor work attitude of LAWMA workers is a challenge to environmental sanitation
Citizens indiscriminately littering of the highways with no civic concern is a challenge to environmental sanitation	Pearson Correlation	1	.088
	Sig. (2-tailed)		.185
	N	227	227
Poor work attitude of LAWMA workers is a challenge to environmental sanitation	Pearson Correlation	.088	1
	Sig. (2-tailed)	.185	
	N	227	227

The Table above shows the result of the Pearson's' Product Moment Correlation Coefficient (PMCC) carryout for the relationship between different challenges facing waste collection and management in Yaba LCDA and environmental sanitation.

The correlation is significant at the 0.05 level. So, the correlation coefficient is therefore statistically significant at 95% confidential level. From the result above it shows that there is positive correlation between different challenges facing waste collection and management in Yaba LCDA and environmental sanitation at r = (0.088). Hence, the stated hypothesis that says *"There is a relationship between different challenges facing waste collection and management in Yaba LCDA and environmental sanitation" was accepted*.

5. Discussion of Results

The following are the findings of this study. There is a relationship between the current waste management system and employment opportunities. The finding above is supported by the assertion of who maintained that properly organized waste management system plays important roles in economic empowerment, economic growth, poverty alleviation, penury liberation, employment opportunities generation and economic development of a country in that it helps the citizens to conveniently undertake purposeful economic activities that will economically influence their well-being and contribute to the economic development of the nation. There is a relationship between methods used in waste collection and management and economic opportunity. The above finding is supported by the claim of who maintain that it is dramatically cheaper and economically profitable to collect and manage waste now in an environmentally sound manner than to clean up in future years the 'sins of the past (Kulczycka and Kowalski, 2014). There is a relationship between different challenges facing waste collection and management and environmental sanitation. The finding above is supported by the view of that assert that many cities in developing countries face serious environmental degradation and health risks due to the weakly developed municipal solid waste management system (Jgosse et al., 2014). Again, the view of Kulczycka, Kowalski and Cholewa agrees with the finding above by asserting that the ever-increasing consumption of resources results in huge amounts of solid wastes from industrial and domestic activities do pose significant threats to human health (Kulczycka et al., 2014).

5.1 Preamble

This section gives the summary of all that have been done from sections one to four of this work. Furthermore, from the findings of this study, conclusion and recommendations were made.

5.2 Summary of Findings

The essence of this section is to summarize the theoretical framework and the data gathered from the field in a conclusive manner that will reflect the objectives of this study which is to suggest influence of waste management on environmental health and development. This study has been able to achieve diagnostic review on the current happening in waste management and environmental health/development in Lagos State using both theoretical framework and fieldwork to come into conclusion in this section on the areas where improvement is inevitable.

This section will first recap on the objectives of this study to provide and understanding into the synergy that exists between the central question and the research questions. At the end of this section, conclusion is drawn from both the theoretical framework and fieldwork including recommendations and critical reflections on both literature reviews and methodological approach.

6. Conclusion

The comprehensive findings of this study conclusively establish the presence of a correlation between the extant waste management system in Yaba LCDA and employment opportunities. Furthermore, the research discerns a tangible connection between the methods deployed in waste collection and the economic prosperity of the state's residents. It also identifies a significant relationship between the multifarious challenges faced in waste collection and management, and the overall environmental sanitation within Yaba LCDA. The study draws attention to several

challenges that plague the Lagos State Waste Management Authority (LAWMA) in its waste collection efforts. These include the indiscriminate littering of waste and faeces on highways, the prevalence of malpractice among LAWMA and Private Sector Partnerships (PSP) officials, a lack of stringent law enforcement, and a conspicuous shortage of necessary equipment and waste disposal tools.

Concurrently, the research reveals critical elements of the current waste management system in Lagos State. These comprise of comprehensive waste management legislations, an emphasis on waste recycling, and the application of socio-economic policies. It underscores the vital role of public advocacy and enlightenment on waste management as intrinsic aspects of the contemporary waste management system in Lagos State. Furthermore, the study affirms the key role of LAWMA engagement in waste collection, and points to the dearth of basic waste management infrastructure and a poor work ethic among LAWMA workers as significant impediments to environmental sanitation. In response to these findings, this study offers several recommendations. Foremost among these is the need for the enactment and vigorous enforcement of robust waste management legislations. It further recommends that LAWMA staff should receive adequate and appropriate remuneration to augment their commitment to their roles. The initiation of continuous public awareness drives that underline the benefits of waste management for environmental and societal health is also advised. The research advocates for a greater emphasis on waste recycling as an integral part of the waste management system. Lastly, it suggests that the Lagos State government invest in the provision of modern equipment, suitable vehicles, and effective waste disposal tools to better equip LAWMA & PSP officials in their waste collection duties.

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