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SOLID WASTE COLLECTION AND MANAGEMENT: A CASE STUDY OF EKWULOBIA, AGUATA LOCAL GOVERNMENT AREA, ANAMBRA STATE

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ABSTRACT

This work examined the effect of effective solid waste management on sustainable development in Anambra State. The study aimed to determine the effect of Poor Funding, Poor recovery and recycling programme, poor legislation and implementation of policy and poor infrastructures and professionals on sustainable development in Anambra State. Relevant conceptual, theoretical and empirical literatures were reviewed. The study was anchored on Cradle-to-cradle theory. Descriptive survey design was employed in Ekwulobia. The population was 1,350. Sample size was determined through the application of Taro Yamani's statistical formula to have 309 as the sample for the study. The involved descriptive analysis and correlation analysis. Multiple regression analysis. The study found that poor funding has a significant influence on sustainable development. Poor recovery and recycling programme has a significant effect on sustainable development. Poor legislation and implementation of policy has a significant influence on sustainable development and infrastructures and professionals has a significant influence on sustainable development in Anambra State. The study concludes that effective solid waste management has a significant effect on sustainable development in Anambra State. The recommends that government that needs to address some issues of opening of more and not too distant refuse dumps/ landfills, improved fees for the services rendered by the waste service providers. They should be a management approach which should incorporate re-use and recycling, composting and energy generation and waste prevention. Also, there should be a review of the legislative aspects of solid waste management in other to work towards achieving the objectives of waste hierarchy. Government and environmental protection agencies and waste management personals should employee experts or exposed their staff to workshops and trainings that meet international standards on technology use, information management and knowledge management

Keywords: *Poor Funding, Poor Recovery and Recycling Programme, Poor Legislation and Implementation of Policy, Limited Infrastructures and Professionals, Sustainable Development*

Introduction

The effective management of solid waste approach aims at global environmental quality, and environmental quality is a pre-requisite for a rise in per capita welfare over a period of time Ayininuola, and Muibi (2008.). Efficient management of waste is a global concern requiring extensive research and development works towards exploring newer application for effective and environmentally sound management" Bari, Hassan, and Haque, (2012). The problem of waste

management is a primordial and present issue in developing countries in Nigeria, particularly Anambra state. Solid waste management problems in Anambra state cut across concerns for human health, air, water, and land pollution among others. The analysis of the key problem affecting the efficient management of solid waste is critical for evolving a workable solution in an emerging economy like Anambra state. The transformation of the existing trends in solid waste management is necessary for ensuring effective environments and other objectives. The continued indiscriminate disposal of solid waste is accelerating and is linked to poverty, poor governance, urbanization, population growth, poor standards of living, low level of environmental awareness and inadequate management of environmental knowledge. Most of these wastes are generated from domestic sources, and are mostly characteristic of household waste (Adewuyi, Komine, Yasuhara and Murakami 2009).

Ayotamuno and Gobo (2004) posit that the persisting problem of municipal waste management in Nigeria prompt the need for communicating innovations and knowledge to achieve desired transformation in overcoming socio-economic and environmental challenges. The need to mitigate environmental pollution is crucial due to its direct impacts on human, plants and animals and the increasing contribution to climate change. Furthermore, energy conservation, energy generation, resource and material recovery from waste through improved municipal waste management is possible by deploying best solutions. Different approaches and interventions have been developed in the past for tackling municipal waste concerns with little or no progress. Managing municipal waste efficiently requires intensification and application of knowledge management tools that guarantee sustainable environment and socio-economic growth. "Municipal solid waste management is an important part of urban infrastructure that ensures the protection of environment and human health (Aliyu, 2010).

Waste management is a serious issue due to its human health and environmental sustainability implications. It is really a pressing issue the world is facing today, since a high percentage of waste is currently disposed of by open dumping (Schiopu, Apostol, Hodoreanu, and Gavrilescu, 2007; Abdelnaser, and Gavrilescu 2008; Abdelnaser, EI-Amrouni, Latifa, Pakir, Ramli, and Aziz, 2009; Narayana, 2009).To buttress this assertion (Zamorano, Molerob, Grindlayb, Rodriguezc, Hurtadoa&Calvo, 2009; Jalil, 2010; Adekunle, Adebola, Aderonke, Pius and Toyin, 2011) posit that waste management is a globally challenging issue especially in developing countries, due to its adverse environmental effects. Mankind naturally depends on the environment to sustain their lives, but solid waste is one of the three major environmental problems in Nigeria.Many other developing and even the developed countries are threatened by this. It plays a significant role in the ability of nature to sustain life within its capacity. Domestic waste management, collection and disposal have always been a universal issue. This is because efficient and appropriate collection and disposal of solid waste has been recognized as essential to the hygiene and health of urban societies-since the nineteenth century. Over the course of the first half of the twentieth century, sanitary engineers and the broader public also came to understand that the inappropriate treatment of waste could cause major environmental degradation, while recycling could contribute significantly to environmental sustainability.

Waste management is imperative because improperly stored refuse can cause health, safety and economic problems. All living organisms create waste, but humans create far more waste than other species. To prevent damaging the Earth's ecosystems and maintain a high quality of life for the planet's inhabitants, humans must manage and store their waste efficiently and safely. In addition, the problem of municipal waste has also turned into a global challenge because of an exponentially increased population, rapid urbanization, and worldwide industrialization and limited resources (Narayana 2009; Hazra,&Goel 2009). Also, developing countries are facing some typical problems when municipal solid waste management (MSWM) is discussed, which envisage poor and inefficient coverage and operation of services, inadequate or missing recycling strategies and activities, limited or unproductive management of hazardous waste etc, (Blight, and Mbande 1998; Henry, Yongsheng, and Jun, 2006; Abdelnaser, &Gavrilescu 2008). 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. According to studies, it was noted that for years, the major problem in Israel (especially in Ramat Hovar) was the accumulation of tens of thousands of tons of organic wastes. Also, in the U.S until the 1970's, Federal Agencies had little authority to regulate hazardous and solid disposal in an unsafe manner at landfills or in inclined lagoons, with some wastes simply dumped on the ground or in surface waters. Today, solid waste management becomes a complex and multidisciplinary problem, needed to be approached from technical, economic, social points of view in order to ensure its sustainability, since the concept of environmental sustainability is a key criterion to design waste management systems, (Manfredi& Christensen 2009).

Statement Of the Problem

The problem of waste generation and management in most countries, especially in developing countries has become one of the intractable environmental problems facing urban centres. This situation could be attributed to low level of technology that is not sophisticated enough to handle the high rate of waste generation (Baum, 1973). Human population and rural-urban migration has increase through urbanization, natural increase rate and industrialization, yet the service rendered is not sizeable enough to control the high level of solid waste generated in urban areas and this has contributed to a large extent, the nuisance and the damaging effect of the urban environment (Sule, 2004).

The problems militating against waste management in Anambra state are diverse and numerous; and problems are related to economical, technological, psychological and political aspects in Nigeria. These problems vary from poor funding, poor legislation and implementation of policy, Limited infrastructures and professionals, level of awareness, poor recovery and recycling programme, and disposal technique (Dauda and Osita2003); Agumwaba, (2008). Improper waste handling and management pose serious threats to the environment and public health in Nigeria. The commonly practiced waste management option in Nigeria, basically involves the collection of mixed waste materials and subsequent dumping at designated dumpsites. It is not a practice to

separate waste materials at source or any point during its management (Adekunle et al, 2011). Poor funding of the people, corruption, weak government regulation, poor work attitude, lack of fund, inadequate facilities such as plants and equipment among others are factors militating against effective· waste management towards sustainable development in Anambra state as a whole. If there is to be sustainable development in waste management in Nigeria, the availability of land (for landfill), human resources, adequate funds, plant and equipment and other tools must be readily available. Therefore, this study examines the effect of effective waste management on sustainable development in Ekwulobia, Anambra State.

Objectives of the Study

The broad objective of this study is to examine the effect of waste management on sustainable development in Ekwulobia, Anambra State, Nigeria. The specific objectives of the study are to:

1 Determine the influence of poor funding on sustainable development in Anambra State.
2 Investigate the effect of poor recovery and recycling programme on sustainable development in Anambra State.
3 Examine the influence of poor legislation and implementation of policy on sustainable development in Anambra State
4 Assess the effect of Limited infrastructures and professionals on sustainable development in Anambra State.

Research Questions

The following research questions would guide this work:

1 To what extent does poor funding influence sustainable development in Anambra State?
2 To what extent does poor recovery and recycling programme affect sustainable development in Anambra State?
3 To what degree does poor legislation and implementation of policy on solid waste influence sustainable development in Anambra State?
4 To what degree does Limited infrastructures and professionals on solid waste affect sustainable development in Anambra State?

Hypotheses

Based on the research questions formulated above the following hypotheses guided the study: Ho1: Poor funding has no significant influence on sustainable development in Anambra State Ho2: Poor recovery and recycling programme has no significant effect on sustainable development in Anambra State

Ho3: Poor legislation and implementation of policy on solid waste has no significant influence on sustainable development in Anambra State

Ho4: Limited infrastructures and professionals on solid waste has no significant effect on sustainable development in Anambra State

Significance of the study

The general public, government and waste management agencies stand to benefit from this study. Empirically, the outcome of this research will enable the general public and government to grasp deeply the hazardnous effect of reckless disposal of waste along every nook and cranny of the nation and factors that impede/hamper the implementation of waste management in Anambra State. This study will equally strengthen government efforts towards the release of funds for waste evacuations and prompt payment of salaries to employees of these various agencies, having vividly understood the importance of poor waste management via extensive work done on this write-up. Theoretically, this study will make a useful contribution to the field of management, as it will serve as another source of knowledge in the management of solid waste and material resources of the various establishments in Anambra state, Nigeria.

Review Of Related Literature

Conceptual review Waste management

Waste management according to Adewole (2009) is the collection, keeping, treatment and disposal of wastes in such a way as to render it harmless to human and animal life, the ecology and the environment generally. This definition is very crucial because the essence of waste management is to protect human lives in particular and the environment in general. United Nation's (UN) (2008) defines sustainable development as 'development that meets the needs of the present without compromising the ability of future generations to meet their own need. The principle of sustainable development seeks to achieve societal and environmental equity while in pursuit of economic gain. From the point of view of sustainable development, waste can be interpreted broadly or narrowly. Broadly it might be construed as including various forms of pollution, ranging from discharges of toxins into the commons, or of emissions into the atmosphere. A narrow interpretation on the other hand, can be characterized as those by-products of production and consumption that are the subject of specific waste control programs. Sustainable development is an implied development without destruction. It is the judicious use of non-renewable resources for the present and future generations, which are non-renewable resources, which must be used at a judicious rate, neither too fast nor too slow and to ensure that the natural wealth that they represent is converted into long-term wealth as they are used (Adewole2009). In Nigeria, we succinctly put it as sustainable development without jeopardizing future development, meaning that in our efforts to explore and exploit the natural resources to serve us, there is an obvious paradox evident in the need to ensure economic development, while protecting the environment. It is important to note that there must be a balance between levels of development and the stock of natural resources, that is, development must be at a level that can be sustained without prejudice to the natural environment or to future generations.

Udocha and Uchegbu (2002) defined waste as those materials which are generated as a result of normal operations over which we have control in terms of their production, disposal or discharge. Waste could be seen as any substance or object which the producer or holder discards or intends or is required to discard.

Wright (2005) perceived waste as the total of all the materials thrown away from homes and commercial establishments and collected by local governments. It encompasses food wastes, household waste, containers and product packaging, dirt, demolition and construction wastes and other kinds of inorganic wastes from residential, commercial and institutional sources, the collection and disposal of which are performed by local authorities and which may be in either solid or semi-solid form. Examples of this kind of waste are electronic appliances, newspapers, clothing, food scrapes, boxes, disposable table wares, office and classroom papers, furniture, wood pallets, rubber tyres and restaurant wastes.

Factors Affecting Municipal Waste Management

Poor Funding: This is one of the major problems constraining the waste management sector (Ogu, 2000). Incapability of purchasing new waste collection trucks, limited staffs, poor vehicle maintenance, unsubsidized waste storage containers, inability to purchase pieces of equipment among others are all attributed to shortage of capital. To a large extent, inadequate funding has been identified by several researchers as one of the most predominant factors affecting solid waste management in Nigeria, (Agunwamba, 2003; Ayotamuno and Gobo, 2004; Ezeah and Roberts, 2012; Izugbara and Umoh, 2004; Ogu, 2000; Ogwueleka, 2009). It has been suggested that the financial strength of environmental agencies in the country has not been able to parallel the rate at which solid waste is being generated. Ogwueleka (2009) argues that environmental agencies do not have the capacity to perform their duties effectively due to limited budgets. He suggests that the low morale among waste management agencies personnel resulting from poor remuneration, affect solid waste management. In Port Harcourt for instance, like most states in the country, the state government is the sole financier of solid waste management (Ayotamuno and Gobo, 2004). They argue that this system of funding is not sustainable. Hence, Imam et al. (2008) suggested that some form of user charge might help reduce the burden of funding on the government.

Poor Legislation and Implementation of Policy: The constitutional strength of municipal waste management policy is weak and ineffective. Also, implementation of this policy is not monitored. The policy is not well structured and definitely tends to be weak. There are instances in which due process is obstructed and sanctioned penalty are not expended on certain municipalities and individuals. Policies are yet to be aimed at the 3R's of waste management – reduce, reuse and recycle. Government policy on waste is not revisited, reaffirmed, restructured and upgraded in a comprehensive tune and form. Agunwamba (1998) points out that there is a loop hole in the government policies on solid waste management. He observed that, although the public are urged to partake in the monthly exercise to clean up the city, the efforts of the residents have not been complemented through the provision of disposal sites. This problem persists throughout the country. For example, Nzeadibe and Anyadike, (2012) reported that no articulate piece of legislation deals with solid waste management in the city of Aba. They argued that due to weak institutional framework and enforcement of policies, solid waste management is not considered a priority by the state government (Ayotamuno and Gobo, 2004). Ezeah and Robert (2012) noted that the legal framework on waste management is weak. Their view is that the waste policies in place do not have strategies for realization. Hence, they suggested a review of the legislative

aspects of solid waste management in order to work towards achieving the objectives of waste hierarchy. In addition, they suggested a management approach which should incorporate re-use and recycling, composting and energy generation and waste prevention.

Limited Infrastructures and Professionals: Limited solid waste infrastructures are one of the major contributing indexes of poor waste management system in Nigeria. Nonetheless, experts to man these machineries are also not on ground. The environmental protection agencies and waste management personnel are not experts and exposed to workshops and trainings that meet international standards on technology use, information management and knowledge management. Most of the state environmental protection agencies lack adequately trained personals Agumwaba, (2008).

Level of Awareness: In Nigeria, populace awareness on sustainable waste management is still very poor and effort by the agencies to increase awareness is still very low. Municipal members are not well informed on the adverse effects of indiscriminate and improper disposal of waste and also the benefits of such act.

Recovering and Recycling: Access to possible recyclable material possesses great difficulty due to poorly limited recycling programs. The informal recycling programs involve scavengers' effort search of recyclable items. Presently, the informal sector renders the service of retrieving and recycling of materials in Nigeria Oguntoyinbo, (2012). The introduction of an advance formal recycling program presents positive and accelerating outcomes for solid waste management sector. Disposal: The landfill disposal technique of waste materials with dearth of treatment processes and open dumping possesses increasing public health hazards to human lives, animals and plants. However, the evolutions of poisonous gases such as methane and carbon-dioxide cause alteration of weather, leading to climate change.

Unplanned developments and population increase: This is perhaps one of the greatest challenges facing solid waste management in the country. Ogbazi (2013) concluded that urban planning has failed in Nigeria due to several factors such as weak policies and laws, designs that are similar and based on foreign cultures. Hence, Agunwamba (1998) concluded that this lack of planning and adequate development makes solid waste collection a difficult task. He observed that they lead to settlements without street planning and accessible roads. Nwaka (2005) criticises the government role in the rapid expansion of unplanned settlements. He argues that overregulation on the part of the government in allocating cheap land to prospective developers give rise to illegal settlements. Nweke observed that only about 20 – 40% of developments have government approvals. He went on to add that although there is a law on urban and regional planning, efforts have not been made to implement the law by the government agencies responsible for the implementation.

Sustainable development

The main concern in sustainable development is supposed to be the modernization of rural society through a transition from rural isolation to integration with the national economy for equitable and

balanced development of the nation (Olisa & Obiukwu, 1992). According to the World Bank (2005), sustainable development is a strategy designed to improve the economic and social conditions of a specific group of the people, the rural poor. It involves extending the benefits of development to the poorest among those who seek a livelihood in the rural area. Apeh (2006) perceive sustainable development as a strategy designed to improve the social, economic, cultural and political conditions of rural dwellers and to make the process of their development self-sustaining through individual and collective participation. The implication of this definition is that sustainable development is not only concerned with improvement in the quality of rural living through increased and improved community services but also in the provision of jobs and increased incomes to rural people. However, sustainable development activities can be undertaken by governments or an international agency which may be private or public. Sustainable development constitutes a process of planned change for which one approach or the other is adopted for improvement and/or transformation of the lot of the rural populace.

Anríquez and Stamoulis (2007) revealed that the definition of sustainable development has evolved through time as a result of changes in the perceived mechanisms and / or goals of development. Since 1970's, sustainable development as a concept, has been highly associated with the promotion of standards of living and as a precondition for reducing rural poverty. Anríquez and Stamoulis (2007) defined sustainable development as development that benefits entire populations; where development is understood as the sustained improvement of the population's standards of living or welfare. Anríquez & Stamoulis (2007) also expressed that sustainable development is essentially a part of structural transformation characterized by diversification of the economy away from agriculture. Adinyira (2007) narrated that the expression sustainable development is currently used in various senses in a number of public policy programs and can be said to be a somewhat overworked expression. Simply put, sustainable development is about implementing a political, economic and social project attuned to a collective vision of the future of any country.

Theoretical framework

This work is anchored on Cradle-to-cradle theory developed by William McDonough (2002). It is designed to stop the cycle of use-waste-pollute, which suggests that certain products could be reused endlessly to make similar products (cradle to cradle), rather than recycled into lower- grade products until the last stop is a landfill (cradle to grave). This means that products can be used, recycled, and used again without losing any material quality-in cradle-to-cradle cycles. Therefore, it could be the good way of reducing the waste from the raw materials of the products instead of using more and more virgin materials. Hence, when we face the problems of municipal solid waste, this theory can bring us the possibility for the breakthrough. All in all, "cradle to cradle" plays an important role to develop the China's waste treatment hierarchy and implement the China's waste management system.

Empirical review

Ndubuisi, Anekwe and Attah (2016) investigated waste management and sustainable development in Nigeria with particular reference to Anambra State waste management agency (ASWAMA). Survey research design was adopted and the major instrument used for data collection was questionnaire which was structured utilizing five-point Likert scale. Pearson product moment correlation coefficient and one-sample Kolmogorov Smirnov Test were employed to analyze the data generated. Findings revealed that waste management practice has a significant impact on environmental sustainability in Anambra State. It was recommended that Government should establish stringent legal and regulatory framework that will enhance efficient and appropriate collection and disposal of waste by Anambra State Waste Management Agency. This will ensure environmentally sound waste management system that prevents damage to the earth's ecosystems and maintain a high quality of life for the inhabitants of the State. Also, Government should pump sufficient funds into the agency to enable it dispose waste generated appropriately since hygiene and health of the citizens are very essential. This is pivotal because improperly stored waste can cause health, safety and economic problems which are detrimental to human existence.

Afangideh, Joseph and Atu (2012) examined the attitude of urban dwellers to waste disposal and management. One hundred and fifty copies of the questionnaire were administered to residents in the area. Information such as the various classes of waste, frequency of waste disposal and methods of waste evacuation were obtained from the questionnaire. Findings revealed that family size has a great influence on waste disposal and generation which was evident in the hypothesis with a calculated value of 7.32 greater than the critical value of 2.43 at 0.05 level of significance. Besides, environmental enlightenment has changed people's attitude towards waste generation and management in the area. This was affirmed in the calculated f-value of 3.18 greater than critical t-value of 1.97 at 0.05 level of significance. However, this result indicate that effective environmental enlightenment would help avert the attitude of urban dwellers to waste disposal and management in the area.

Jan Steins (2002) conducted a study that focused on Industrial Waste Management Models. His objective was to determine the commonly known business economic models, tools, methods and organizational theories as well as the Pollute-Pay-Principle that can be applied in waste management. System theory was adopted in order to get a clear picture of the model societal context; the economic model methods are studied and modified from a waste management point of view. It was concluded that theoretical findings point at the fruitful possibility to modify commonly used cost- revenue methods including the Pollute-Pay-Principle in an industry.

Methodology

Descriptive survey approach was adopted in this study. The study was carried out in Ekwulobia in Anambra State, the population was 1,350. Sample size was determined through the application of Taro Yamani's statistical formula to obtain 309 as the sample for the study. To ensure instrument validity, a panel of experts familiar with the content was employed and content validity was established. To ensure consistency of the developed instrument, the instrument was pilot tested

using a random sample of 10 employees. The study used the Cronbach's Alpha test to test the reliability of the instrument. The result showed a Cronbash alpha of 0.721.

Method of Data Analysis: The analysis of data was performed using SPSS package. This involved descriptive analysis and correlation analysis. Multiple regression analysis will be to assess the effect of advertising on sustainable development. P value was considered significant at level 0.05. The regression model is represented as:

$Y = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta nXn + ẹ$ Where:

Y = Sustainable Development (SD)
α = Constant Term
β= Beta coefficients
X1= Poor Funding(PF)
X2= Poor Recovery and Recycling (PRR)
X3= Poor Legislation and Implementation of Policy (PLIP) X4= Limited Infrastructures and Professionals (LIP)
ẹ = Error Term

Data Presentation and Analysis

The data to be presented and analyzed is based on findings extracted from the questionnaire distributed to residents of Ekwulobia in Anambra State. A total of three hundred and nine copies of the questionnaire were distributed to the respondents 25 copies were not properly filled, and 30 got missing. Therefore, the analysis in this section will be based on the two hundred fifty-four relevant copies. Data obtained were analyzed using descriptive statistics, correlation analysis and multiple regression analysis. -

Descriptive Statistics

The individual characteristics of the variables were examined below.

Table 4.1 Summary of the Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Dev	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
SD	254	13	25	20.10	3.176	.135	.153	-1.189	.304
PF	254	13	25	18.02	2.517	.235	.153	-.232	.304
PRR	254	13	25	18.49	2.998	.397	.153	-.550	.304
PLIP	254	13	25	19.04	3.128	.319	.153	-.737	.304
LIP	254	5	23	13.76	5.088	-.261	.153	-1.212	.304
Valid N (listwise)	254								

Source: Authors' Computation from SPSS 21.0

Table 4.1 above shows that the mean series for the variables are 20.10, 18.02, 18.49, 19.04, 13.76 and 17.96 respectively for sustainable development, poor funding, poor recovery and recycling, poor legislation and implementation of policy and limited infrastructures and professionals. The standard deviation value for sustainable development, poor funding, poor recovery and recycling, poor legislation and implementation of policy and limited infrastructures and professionals are

3.176, 2.517, 2.998, 3.128, 5.088 and 2.626 respectively. This is also a wide margin between their respective maximum and minimum values.

Another important statistic is skewness which measures the symmetry of the distribution of series around its mean, the result of the descriptive statistics shows that all the variables are positively skewed. The positive values for the skewness reveal that the data are skewed right this means that the right tail is long relative to the left tail. The Kurtosis statistic is calculated at - 1.189, -0.232, -0.550, -0.737, and 0.331 respectively for sustainable development, poor funding, poor recovery and recycling, poor legislation and implementation of policy and limited infrastructures and professionals.

Correlation Analysis

Pearson correlation was employed to measure the strength and relationship between independent variables. The Pearson correlation coefficient is a measure of the strength of a linear association between two variables and is denoted by r. Table 4.2 below shows the summary of correlation coefficient.

Table 4.2 Correlation Matrix

		SD	PWDH	PRRP	LIP	PLIP
SD	Pearson Correlation	1	.357**	.257**	.007	.084
	Sig. (2-tailed)		.000	.000	.914	.184
	N	254	254	254	254	254
PF	Pearson Correlation	.357**	1	.316**	.090	-.087
	Sig. (2-tailed)	.000		.000	.151	.168
	N	254	254	254	254	254
PRRP	Pearson Correlation	.257**	.316**	1	.292**	-.222**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	254	254	254	254	254
PLIP	Pearson Correlation	.007	.090	.292**	1	-.391**
	Sig. (2-tailed)	.914	.151	.000		.000
	N	254	254	254	254	254
LIP	Pearson Correlation	.084	-.087	-.222**	-.391**	1
	Sig. (2-tailed)	.184	.168	.000	.000	
	N	254	254	254	254	254

Source: Author's Compilation from SPSS Version 21.0

The table above shows the extent of association between the dependent and independent variables used in the study. The correlation between poor recovery and recycling and sustainable development shows the value of 0.357, which indicates that poor recovery and recycling has a positive moderate effect on sustainable development. Poor recovery and recycling recorded a correlation coefficient of 0.257 with sustainable development which shows that poor recovery and recycling has a positive moderate effect on sustainable development.

Furthermore, the correlation between poor legislation and implementation of policy and sustainable development recorded a correlation coefficient of 0.007. This indicates that entertainment in advertising has a weak effect on sustainable development. Also, Limited

infrastructures and professionals recorded a correlation coefficient of 0.084 with sustainable development. This shows that limited infrastructures and professionals has a weak effect on sustainable development.

Test of Hypotheses

Multiple regression analysis is employed to test hypothesis formulated in this study. The summary of the coefficient of the regression is presented in the table below.

Table 4.3 The Coefficient of the Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.029	2.307		3.914	.000
	PWDH	.402	.079	.319	5.105	.000
	PRRP	.208	.068	.196	3.080	.002
	LIP	.019	.066	-.019	2.287	.005
	PLIP	.088	.040	.141	2.228	.027

Source: Author's Compilation from SPSS Version 21.0

Ho1: Poor Funding has no significant influence on sustainable development in Anambra State Hi: Poor Funding has a significant influence on sustainable development in Anambra State Based on t-statistics of 5.105 and p-value of 0.000, Poor Funding (PWDH) was found to have a significant influence on sustainable development (SD) in Anambra State. This result therefore suggests that we reject the null hypothesis and accept the alternate hypothesis. This implies that Poor Funding has a significant influence on sustainable development in Anambra State.

Ho2: Poor recovery and recycling programme has no significant effect on sustainable development in Anambra State

Hi: Poor recovery and recycling programme has a significant effect on sustainable development in Anambra State

Based on t-statistics value of 3.080 and p-value of 0.002, Poor recovery and recycling programme (PRRP) was found to have a significant effect on sustainable development (SD) in development in Anambra State. Therefore, we reject the null hypothesis and accept the alternative hypothesis. This implies that Poor recovery and recycling programme has a significant effect on sustainable development in Anambra State.

Ho3: Poor legislation and implementation of policy has no significant influence on sustainable development in Anambra State

Hi: Poor legislation and implementation of policy has a significant influence on sustainable development in Anambra State

Based on t-statistics value of 2.287 and p-value of 0.005, Poor legislation and implementation of policy (PLIP) was found to have a significant impact on sustainable development (SD). Therefore,

we reject the null hypothesis and accept the alternative hypothesis. Poor legislation and implementation of policy has a significant influence on sustainable development in Anambra State

Ho4: Limited infrastructures and professionals has no significant influence on sustainablein Anambra State.
Hi: Limited infrastructures and professionals has a significant influence on sustainable development in Anambra State.

Based on the t-statistics of 2.228 and p-value of 0.027, Limited infrastructures and professionals (LIP) was found to have a significant impact on sustainable development (SD). Therefore, we reject the null hypothesis and accept the alternate hypothesis. This implies that Limited infrastructures and professionals have a significant influence on sustainable development in Anambra State

Discussion of findings

This study examined the effect of effective solid waste on sustainable development in Ekwulobia, Anambra State. The data generated were subjected to statistical analysis. The result of the test shows that: Poor Funding has a significant influence on sustainable development. This finding tallies with Agunwamba, 2003; Ayotamuno and Gobo; 2004; Ezeah and Roberts, 2012; Izugbara and Umoh, 2004; Ogu, 2000; Ogwueleka, 2009 which state that large extent of inadequate funding has been identified as the most predominant factor affecting solid waste management in Nigeria.
The study also finds that poor recovery and recycling programme has a significant effect on sustainable development in Anambra State. The result of this study is in consonance with Oguntoyinbo, (2012) which maintains that lack of advance formal recycling program presents negative outcomes for solid waste management sector.

The study revealed that poor legislation and implementation of policy has a significant influence on sustainable development in Anambra State. This founding agrees with Ayotamuno and Gobo, 2004, Ezeah and Robert (2012) poor legislation and implementation of policy influence sustainable development. Their view is that the waste policies in place do not have strategies for realization. Nzeadibe and Anyadike, (2012) reported that no articulate piece of legislation deals with solid waste management.

Finally, the study discovered that infrastructures and professionals has a significant influence on sustainable development in Anambra State. This finding agrees with Agumwaba, (2008) which asserted that limited solid waste infrastructures are one of the major contributing indexes of poor waste management system in Nigeria. Nonetheless, experts to man these machineries are also not on ground.

Summary Finding

1 Poor Funding has a significant influence on sustainable development in Anambra State
2 Poor recovery and recycling programme has a significant effect on sustainable development in Anambra State
3 Poor legislation and implementation of policy has a significant influence on sustainable development in Anambra State
4 Infrastructures and professionals has a significant influence on sustainable development in Anambra State

Conclusion

Proper waste management is an important environmental issue that is of concern worldwide due to its effect on the quality of lives of city dwellers cum the outlook of an urban city. This study examined the effect of effective solid waste management on sustainable development in Anambra State. From the analysis, it was discovered that poor funding, poor recovery and recycling programme, Poor legislation and implementation of policy and poor infrastructures and professionals have significant effect on sustainable development in Anambra State. Therefore, the study concludes that effective solid waste management has a significant effect on sustainable development in Anambra State

Recommendations

1 Government needs to address some issues of opening of more and not too distant refuse dumps/ landfills, improved fees for the services rendered by the waste service providers.
2 There should be a management approach which should incorporate re-use and recycling, composting and energy generation and waste prevention.
3 They should be a review of the legislative aspects of solid waste management in order to work towards achieving the objectives of waste hierarchy.
4 Government and environmental protection agencies and waste management personnel should employ experts or expose their staff to workshops and trainings that meet international standards on technology use, information management and knowledge management

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