DETERMINANTS OF INEFFECTIVE SOLID WASTE MANAGEMENT
IN AKOKO SOUTH-WEST AREA OF ONDO STATE

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ABSTRACT

The study investigate the determinants of ineffective solid waste management in Akoko South-west Area of Ondo state. The study adopted survey research design, 30 people were selected from four communities (Akungba, Ayegunle, Iwaro, Oka-akoko) each were used for this study. The study examined the attitude of people and the inadequate facilities on the determinants of ineffective solid waste management. Four research questions and four research hypothesis were answered in the study using descriptive statistics and one way ANOVA. Descriptive statistics was used to analyse the data accepted. The study found out that economic factors had low levels and this led to inefficient effective solid waste management, social factors such as social conditions of social workers, stakeholders participation in the councils that made it hard to follow the stipulated environmental laws by SEMA negatively and significantly influence the determinant of solid waste management. On the basis of the findings, it was recommended that government should allocate enough budget for provision of solid waste management services within municipality which should be reviewed periodically to ascertain if the monies are put to correct use and to ensure efficient effective solid waste management.
Introduction

In rapidly urbanizing world, no nation is isolated. Urbanization attracts various health and environmental issues, which include waste management. As opined by the World Health Organization (2000), numerous health and environmental issues arise from this unprecedented urbanization process.

The health of city dwellers is largely dependent upon their living condition lifestyles. The factors in our everyday life, which significantly influence our health, which are called health determinants. Health determinants include water supply, sanitation, nutrition, food safety, health services, housing conditions, working conditions, education, lifestyles, population changes, income and so on. They are physical, social and economic environments that surrounds oily dwellers (oyerinde,2010).

Nowadays, both urban and rural dwellers are showing great concerns for their dresses and cars but less concern for the sanitation of their environment. Amoah (2011) stated that the health of a nation determines how wealthy that nation is and this stresses the need for people to appropriate and adopt practices that can promote good environmental sanitation and cleanliness, and eventually pave the way for the good health of the people. Human beings violate the environment through improper refuse disposal and sewage management. The proper utilisation of solid waste management makes people healthy and keep them in a healthful environment.

A lot of people engages in various activities that generate wastes. Waste is any unavoidable material resulting from domestic activities or industrial operations for which there is no economic demand and which must be disposed off (Sridhar 1996, cited by Adeyemo, Adetoyi, Oni, Ayodele and Olayemi 2013). These wastes are generated from household , recreational, industrial and agricultural sources. The waste consist of organic matters, such as pieces of paper, rags, discarded packages, food scraps, garden refuse and inorganic materials such as worn out appliances, junk, automobiles, furniture, individuals waste and debris of construction projects.

Increase in waste generation and inadequate or improper management leaves its attended effects on health. WHO (1993) reported that refuse dumps presents the risk of toxic exposure and may leak into the ground and surface waters which incineration can pollute the air with particulates and organically active chemicals. The content and quality of air, noise, water and land are polluted and can lead to serious health problems. The dreaded problem of gastroenteritis, cerebrospinal meningitis, poliomyelitis, tuberculosis epidemic and many other disease conditions, cannot be detached from deterioration of solid waste management.

Increase in the population of urban environment due to rural drift to urban areas has led to a proportional increase in the quantity of waste generated both domestically and industrially (Adamu 1993). Also, Adeyemo and Sanni (2013) opined that the volume of rubbish was much lower than in the present time because there were fewer people and less packaging materials. Growing increase in population, science, technology and agricultural
advancement combine to generate more wastes especially from food, residue, polythene bags, woods, papers, ashes, organically active chemicals, automobiles, hospital wastes, industries and bulky wastes that pollute or degrade and violate the natural environment of living.

In addition to systematic waste collection, a multifaceted approach to the problem of waste management is needed. There is the need to reduce the amount of waste generated by shifting to reusable materials, using biodegradable and planning for more recovery and recycling, composting and compacting.

Oreyemi (2005) stated that solid waste management is the collection, storage, transporting, treatment and disposal of wastes in such a way as to render them innocuous to human and animal life, ecology and the environment generally. According to WHO (1997), the management of solid waste becomes more difficult as population increases and living standard rise. Presently, the increased amounts of domestic and commercial wastes that are generated tend to include more non-biodegradable or toxic components.

The wastes dumped into open drains cause blockage of drainage systems, leading to stagnant pools which harbour the breeding of disease vectors like mosquitoes. During decomposition, toxic gases like sulphur (iv)oxide are released into the atmosphere, giving rise to health and environmental hazards, with such health implications as bronchitis, tuberculosis, food poisoning and yellow fever (Adeyemo and San, 2013).

Effective solid waste management typically includes, waste generation, storage, processing and treatment and final disposal (Jindal, 2008). In developing countries municipal solid waste contains around 50 percent organic matter and 30 percent recyclable materials, meaning a potential 80 percent of waste could be recycled (Habitat, 2013). For instance, the high demand for plastic and/or rubber products, which are mostly non-biodegradable, poses both health and economic drawbacks. Such waste could be recycled. However, illiteracy, lack of self-control and lack of willingness to pay for Solid Waste Management are contributing factors that make recycling a big hurdle to surmount. Solid, liquid and gaseous forms of waste are increasingly becoming a menace to society.

According to UNEP (2004), solid waste generation has become an increasing environmental and public health problem everywhere in the world, particularly in developing countries. Read (2003) observed that solid waste management is characterized by ready-made prescribed answers, with single-issue interest groups promoting a single solution, at the expense of others. The truth, he contended, is that no single solution can manage society’s waste adequately. The numerous cases of cholera outbreak as well as other diarrheal diseases especially in recent times will clearly attest to this fact. These mishaps results from the poor disposal of the thousands of tons of solid waste generated daily into open dumps and wetlands, contaminating surface and ground water and posing serious health hazards. Safeguarding the environment is increasingly becoming an issue of immense concern especially in Nigeria. Some of the most prominent concerns resulting from not protecting the environment are; high incidence of pollution, urban noise, the emerging oil and gas industry and its attendant adverse effects, natural disasters as well as the influx of e-waste into the
country. Nigeria is endowed with abundant natural resources, which have played very important roles in the agricultural, industrial, economic and social development efforts of the country.

Social problems encountered include: lack of public awareness, illegal dumping, poor condition of waste workers, lack of private sector and community involvement. Incompetence of organizations in terms of equipment required for operation and man power/staff qualifications, training and human resource developments/ and unreliable service are the institutional challenge that the municipalities encounter. Ojedokun (2001) related flooding in Lagos to clogging of drainage channels by dumped solid wastes. There is abundant release of gaseous toxic substances into Nigerian environment as well as jeopardizing of health of scavengers as a result of burning of obsolete e-wastes. Due to contact with smokes from burning of solid wastes and gaseous emission from dumpsites, cases of several diseases have been recorded (Oyelola, 2009).

The need to improve public awaren ess of, and community participation in waste management has been widely recognised by researchers as necessary to create sustainable waste systems and to promote environmental citizenship amongst community members (Lumbreras, Martin and Fernandez Garcia, 2014).

Ineffective solid waste management in the study area has become a serious challenge hence the researcher is carrying out the study to find out the determinants of such challenges.

Research Hypotheses

1. Shortage of man power will not significantly determine the ineffective solid waste management in Akoko south west local government area of Ondo state.
2. Attitude of the people will not significantly determine the ineffective solid waste management in Akoko south west local government area of Ondo state.
3. Inadequate facilities will not significantly determine the ineffective solid waste management in Akoko south west local government area of Ondo state.
4. Government policy on sanitation will not significantly determine the ineffective solid waste management in Akoko south west local government area of Ondo state.

Materials and Methods

The descriptive survey design was adopted for this study. The population of the study comprises of all inhabitants of Akoko South West Local Government Area of Ondo State. The study adopts simple random sampling techniques in selecting one hundred and twenty (120) people from four communities (Akungba, Ayegunle, Iwaro, Oka-Akoko) in Akoko South West Local Government Area of Ondo state. This sampling technique ensures that 30 adults are selected each from the market within the four communities.

Information was obtained by a means of self-developed close ended questionnaire. The questionnaire was made up of two selections “A and B”. section “A” was made up of relevant information on personal data of the respondents while section “B” sought information on the
variables under study. The responses followed the four points, Strongly Agreed, Agreed, Disagreed and Strongly Disagreed.

The draft of the instrument (questionnaire) was validated by Health Education Experts before it was finally administered. The reliability of the instrument was carried out using the test-re-test method. This was done by administering to twenty (20) respondents who were not part of the main research work. The result was analysed using Pearson Product Moment Correlation and a Co-efficient of 0.62 was obtained and this was considered adequate for the study. The researcher personally administered the questionnaire to the respondents with the help of one trained research assistant who helped in the distribution and collection of the instruments from the respondents. All the questionnaires were retrieved, screened and coded into frequency tables. The statistical analysis employed in this study was t-test and analysis of variance to determine the degree of significant of the findings. Alpa level of significant 0.05 formed the basis for the testing of the four stated analysis.

**Results**

**Hypothesis 1: Shortage of man power will not significantly determine the ineffective solid waste management in Akoko South West Local Government**

Table 1: ANOVA analysis of man power and ineffective solid waste management

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>F-cri</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>501.637</td>
<td>17</td>
<td>29.508</td>
<td>16.326</td>
<td>1.73</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Within Groups</td>
<td>184.355</td>
<td>102</td>
<td>1.807</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Total</td>
<td>685.992</td>
<td>119</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

From the above, there is a significant influence of shortage of man power on ineffective solid waste management. \(f (17, 102) = 16.33 \ p<0.05\]. Therefore, the null hypothesis is rejected. This implies that shortage of man power will influence solid waste management.

**Hypothesis 2: Attitude of the people will not significantly determine the ineffective solid waste management in Akoko South West Local Government**

Table 2: ANOVA analysis of Attitude of the people and ineffective solid waste management

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
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<th>Mean Square</th>
<th>F</th>
<th>F-cri</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>931.961</td>
<td>17</td>
<td>54.821</td>
<td>39.932</td>
<td>1.73</td>
<td>&lt;0.05</td>
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<tr>
<td>Within Groups</td>
<td>140.031</td>
<td>102</td>
<td>1.373</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1071.992</td>
<td>119</td>
<td></td>
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</tbody>
</table>

From the above, there is significant influence of attitude of the people on ineffective solid waste management. \(f (17, 102) = 39.93 \ p<0.05\]. Therefore, the null hypothesis is rejected. This implies that attitude of people will influence ineffective solid waste management.
Hypothesis 3: Inadequate facilities will not significantly determine the ineffective solid waste management in Akoko South West Local Government

Table 3: ANOVA analysis of Inadequate facilities and ineffective solid waste management.

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>F-crit</th>
<th>P</th>
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</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>456.272</td>
<td>17</td>
<td>26.840</td>
<td>36.836</td>
<td>1.73</td>
<td>&lt;0.05</td>
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<tr>
<td>Within Groups</td>
<td>74.320</td>
<td>102</td>
<td>.729</td>
<td></td>
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<tr>
<td>Total</td>
<td>530.592</td>
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</table>

From the above, there is a significant influence of inadequate facilities on ineffective solid waste management. \[ f (17, 102) = 36.836 \text{ p}<0.05 \]. Therefore, the null hypothesis is rejected. This implies that inadequate facilities will influence ineffective solid waste management.

Hypothesis 4: Government policy will not significantly determine the ineffective solid waste management in Akoko South West Local Government

Table 4: ANOVA analysis of government policy and ineffective solid waste management.

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<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>F-crit</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>228.254</td>
<td>17</td>
<td>13.427</td>
<td>14.656</td>
<td>1.73</td>
<td>&lt;0.05</td>
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<tr>
<td>Within Groups</td>
<td>93.446</td>
<td>102</td>
<td>.916</td>
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</tr>
<tr>
<td>Total</td>
<td>321.700</td>
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</table>

From the above, there is a significant influence of government policy on ineffective solid waste management. \[ f (17, 102) = 14.656 \text{ p}<0.05 \]. Therefore, the null hypothesis is rejected. This implies that government policy will influence ineffective solid waste management.

Discussions

Hypothesis 1 which stated that shortage of man power will not significantly determine the ineffective solid waste management in Akoko South West Local Government; showed that shortage of man power will significantly determine the ineffective solid waste management in Akoko South West Local Government. This implied that shortage of man power will influence solid waste management. This study is in line with the findings of Périou, (2012) who stated that Rapid growth of population has created a number of extreme land use planning and infrastructural challenges that have crippled the capability of national and municipal governments in developing countries and these can be described as budgetary constraints, inadequate service coverage and operational inefficiencies of services including unskilled manpower and shortage of manpower, ineffective technologies and equipment, inadequate landfill disposal, and limited utilization of waste reduction activities such as recycling.
Hypothesis 2 which stated that attitude of the people will not significantly determine the ineffective solid waste management in Akoko South West Local Government; showed that attitude of the people will significantly determine the ineffective solid waste management in Akoko South West Local Government. This implied that attitude of people will influence ineffective solid waste management. This study is in line with the findings of Aini, Razi, Lau and Hashin (2002) indicated that, in order to overcome the solid waste crisis, the ‘’conscience of the individual and their attitude needs to be raised through environmental awareness and concern, inculcation of sustainable consumption practices and education on waste management.

Hypothesis 3 which stated that Inadequate facilities will not significantly determine the ineffective solid waste management in Akoko South West Local Government; showed that inadequate facilities will significantly determine the ineffective solid waste management in Akoko South West Local Government. This study is in line with the findings of UNEP, (2007) who reported that there are several factors that have facilitated increase in the volume of solid waste generated. One of the factors that have led to increased solid waste generation is rapid urbanization and urbanization comes with expansion of towns which manifests through the growth of social and economic infrastructure/services and industrialization.

Hypothesis 4 which stated that Government policy will not significantly determine the ineffective solid waste management in Akoko South West Local Government; showed that Government policy will significantly determine the ineffective solid waste management in Akoko South West Local Government. This study is in line with the findings of (Wang, He, Kim and Kamata, 2011) who reported that One of the principal reasons for the inefficient SWM systems in the developing countries is the financial constraint and policy of government. As SWM is given low priority in the developing countries, except in capital and large cities, very limited funds are provided to the SWM sector by the government. This is especially true for the small towns and rural areas, where the local taxation system is inadequately developed, and therefore the financial basis for public services, including SWM is very weak.

The study made the following conclusions;

1. That shortage of manpower has significant influence on the activities of solid waste managers.
2. Attitude of people promoted ineffectiveness of the waste management.
3. Inadequate facilities were also identified as a serious challenge to waste management.
4. Government policy on solid waste management create problems for smooth operation of the system.
Based on the findings, the following recommendations are made;

The state government should try to encourage the solid waste managers to employ more people to do the job, they should also provide adequate and relevant equipment for effective waste management, while people should endeavour to give maximum cooperation and support to the waste managers when carrying out their activities. On a final note Government policy should give room for better working relationship among the people and the managers.

REFERENCES


