International Journal of Environment and Pollution Research
Vol.6, No.4, pp.10-22, November 2018
Published by European Centre for Research Training and Development UK (www.eajournals.org)

STATISTICAL SURVEY OF WASTE MANAGEMENT IN OSUN STATE, NIGERIA: BINARY LOGISTICS APPROACH

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ABSTRACT: *This research work is in line with the strategic priorities of environment management agencies, and has the potentials to assist the organization in their effort to ensure the efficient management of solid and liquid waste in the City of Osogbo. With a view of providing empirical data information with respect to the causative factors responsible for the visible environmental pollution by wastes and materials from food outlets. Data was gathered from a representative sample of 332 food outlets on socio-economics demographic, environmental, sanitary and health related variables that are related to waste analysis was performed using statistical procedures such as frequency tables, pearson's chi-square tests of association and binary logistic regression analysis in the statistical package STATA version 10. Odds rations estimated from logistic regression analysis were used for identifying key factors that affect efficiency in the proper disposal of waste. Results obtained showed that 18% of the 332 food outlets in the study were generally inefficient in waste disposal. Based on odds rations estimated from binary logistic regression analysis, wrong perception (a factor of 10.88), failure to provide trash cans to customers (a factor of 3.15), the operation of food outlets by non-owners of managers (a factor of 2.33), factors that affect the proper management of waste at the 332 food outlets in the study.*

KEYWORDS: Waste Management, Waste, Osun State, Binary Logistic Regression

INTRODUCTION

Cities of ancient times were often noxious places, fouled by human wastes and debris. Beginning about 1000 CE, the use of coal for fuel considerable air pollution, and the conversion of coal to coke for iron smelting beginning in the 17th century exacerbated the problem. In Europe, from the Middle Ages well into the early modern era, unsanitary urban condition favoured the outbreak of population-decimating epidemies of disease, from plague to cholera and typhoid -. Through the 19th century, water and air pollution and the accumulation of solid wastewater largely problem of congested urban areas. But with the rapid spread of industrialization and the growth of the human population to unprecedented levels, pollution became a universal problem. By the middle of the 20th century, an awareness of the need to protect air, water, and land environments from pollution had developed among the general public. In particular, the publication in 1962 of Rachel Carson's book Silent Spring focused attention on environmental damage caused by improper use of pesticides such as DDT and other persistent chemicals that accumulate in the food chain and disrupt the natural balance of ecosystems on a wide scale. The presence of environmental pollution raises the issue of pollution control. Great efforts are made to limit the release of harmful substances into the environment through air pollution control, waste water treatment, solid-waste management, hazardous-waste management, and recycling.

The sources of solid waste include residential, .commercial, institutional and industrial activities. Certain types of wastes that cause immediate danger to exposed individuals or

Print ISSN: 2056-7537(print), Online ISSN: 2056-7545(online)

environments are classified as hazardous, all non-hazardous solid waste from a community that requires collection and transport to a processing or disposal site is called refuse or municipal solid waste; rubbish is mostly dry material such as glass, paper, cloth, or wood. Garbage is highly decomposable, whereas rubbish is not. Trash is rubbish that includes bulky items such as old refrigerators, couches, or large tree stumps. Trash requires special collection and handling. Another type of solid waste, perhaps the fastest-growing component in many developed countries, is electronic and a variety of other electronic devices. In 2006 e-waste made up 5 percent of the total solid waste stream, and the United Nations Environment programme estimated that developed countries would triple their output of e-waste by 2010. Concern over this type of waste is escalation. Lead, mercury, and cadmium are among the materials of concern in electronic devices, and governmental policies may be required to regulate their recycling and disposal.

Almost since the beginning of recorded history, epidemics have developed suddenly in populations and then ended just as suddenly, leaving part of the population un touched (Fred Brauer,2005) and communicable diseases such as Hepatitis C and Malaria infections are very rampant this day particularly in African countries. (Olowofeso and waema, 2004) with quite enormous death throughout the population spread. And consequently the pandemic influence on Nigeria-a major player within the Sub-sahara Africa cannot be over emphasized. Most diseases are preventable to a greater or lesser degree, in the case of those diseases resulting from environmental factors, prevention is a matter of eliminating, or sharply reducing, the responsible material in the environment. Because these materials originate largely from human activities, prevention ought to be a simple matter of the application of well-established principles of industrial hygiene. In practice, however, this is often difficult to achieve.

Statement of the Problem

There are some critical issues that serve as background for this study. Restaurants and food outlets are generally well known for the generation of high volume of solid and liquid wastes. There is room for improvement of the current level of efficiency in the management of waste produced by food outlets. In terms of the strategic plan formulated by Osun state waste management agency OWMA to improve efficiency in the management of waste, restaurants and food outlets are major stakeholder, and no progress can be made unless they are involved in the implementation of the plan drawn by the OWMA. Each of the issue raised below is a well known and deeply ingrained problem related to food outlets. Waste from food outlets can potentially contribute to environmental pollution if it is not effectively managed. Although the OWMA is doing its best in terms of properly disposing of solid and liquid waste, the streets of Osogbo are littered with broken bottles and garbage from restaurants, food outlets and bars. There is a shortage of essential facilities such as trash cans, public toilets and clean tap water at motor parks and pubic gathering arenas. Some restaurants and food outlets do not have properly functioning toilets and washrooms which are essential requirements for this class of business. Not enough is known so far on the extent to which efficiency in waste disposal can be improved in view of the fact that there is lack of empirical evidence in this area of research interest. Not enough research has been done in Osogbo to assess and identify factors that affect efficiency in proper waste disposal.

Low level of awareness on waste recycling plays a major role in compounding the issue of waste management in relation to the efficient utilization of resources such as broken bottles, empty cans, used goods, plastic bags etc. Far from being put to economic use, broken bottle are harming pedestrian and school children in addition to pollution the environment and

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decreasing the beauty of the city in the eyes of visitors and residents. Ratepayers would be unhappy with the level of incompetence, inefficiency and indifference. Some inhabitants of the Osogbo and some visitors to these areas do not have adequate respect for environmental sanitation in view of the fact that they demonstrate total disregard for cleanliness of the streets in the city. Such people often throw away rubbish on the streets. Examples of such rubbish are beer bottle, empty cans and used food packages. Empty bottles break into harmful pieces as they are thrown onto the streets from moving taxis and private cars. This scenario clearly demonstrates the need for sustained "O clean" programme, on environment sanitation and cleanliness. The problems can further be addressed enacting suitable municipal bi-laws that are relevant to proper waste disposal and environment sanitation .This study aims to generate empirical information and data for the assessment of factors that contribution to poor waste disposal in and around the City of Osogbo.

Objectives of the Study

The broad objective of study is to investigate and identify factors that are responsible for inefficiency in the management and disposal of wastes produced by restaurants and food outlets currently operating in Osogbo. Other specific objectives include:

(i) To investigate the socio-economic, demographic and sanitary conditions of restaurants and food outlets currently conducting business in Osogbo.

(ii) To assess the current level of efficiency in the collection and disposal of solid and liquid waste produced by restaurants and food outlets operating in Osogbo.

Significance of the study

The study would be of help for general public, government and waste management agencies to grasp deeply the hazardous effect of reckless disposal of waste along every nook and cranny of the state and factors that impede/hamper the implementation of waste management in City of Osogbo and its environments. Also, this study will equally strengthen government efforts towards the release of funds for waste evacuations and prompt payment of salaries to employees of the various agencies such as O'Clean and OWMA having vividly understood the importance of waste management. This study would be of benefit as resource base to other researchers interested in carrying out further research to provide new explanation to the topic research topic

Concept of Waste Management

Adewole (2009) defined waste management as 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 import of waste management is to protect human lives in particular and the environment in general.

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 byproducts of production and consumption that are the subject of specific waste control programs.

A quick look at definitions of waste in media and printed documents reveal that waste is considered an unwanted good that is no longer useful or desirable. In the German Waste Act

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of August (1993) waste is defined as “a portable object that has been abandoned by the owner" and also as an "orderly disposal garbage" Bilitewski et al (1994). The Framework Directive on Waste in the United Kingdom states posit that waste is a substance and/or object that is discarded by its owners. This statement is followed by 16 waste categories that are currently in force Porteous,(2000). Uchegbu (2002), waste is defined 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),sees 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, newspapers, clothing, food scrapes, boxes, disposable table wares, office and classroom papers, furniture, wood pallets, rubber tyres and restaurant wastes.

The Mexican view on waste, expressed in the General Waste Amendment of October 2003, refers to a material or product that owners or holders discard, which can be found in a solid or semi-solid state, as well as liquid or gas in a container or thrown away and can be revalued, treated or disposed of according to specific regulations (Congreso General de los Estados Unidos Mexicanos,(2003). Waste is classified in categories such as municipal solid waste (MSW), agricultural and animal refuse, industrial residues, extraction and mining waste, construction and demolition debris and sewage sludge among others.

According to Bilitewski et al (1994) waste management incorporates "the collection, transport, storage, treatment, recovery and disposal of waste. Both definitions concur with Mexican scholars who view waste management as the body of actions related to waste characterization and classification, waste selection, storage and transportation, as well as its transfer, treatment and final disposal. Waste management is the collection, transportation, processing, managing, and monitoring of waste materials. These materials can be solid, liquid, or gaseous substances.

The key challenges that could be contribution to the problem of inefficient treatment and disposal of waste are follows:

- Shortage of logistical and financial resources. This situation has resulted in illegal dumping and an apparent reluctance on the part of some disposal site owners to comply with the current waste disposal standards.
- Lack of advanced technology that is requiring for efficient waste management and collection by OWMA. Limited technical and environmental expertise at OWMA has had a negative impact on overall cleanliness.
- Poor planning in terms of allocation of resources and manpower.
- Inadequate waste treatment facilities, including medical waste, are not properly managed, and will be unable to comply with the expected standards. They are also often poorly located and create unacceptable environmental conditions for adjacent communities

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- Poor enforcement of legislation and municipal by – laws.
- Poor sorting of waste and source reduction at food outlets.
- Shortage of trash cans available to the general at taxi ranks and streets.
- Scavenging of food waste by homeless people
- Narrow streets and shortage of infrastructure
- Chaotic situation taxi ranks
- Large number of street vendors selling food to people
- Shortage of sidewalks
- Shortage of rubbish bins and public toilets on the streets
- High rate of unemployment and poverty
- Large number of hawkers and vendors conduction business on streets
- Failure of drivers to respect traffic regulations
- Drunken people throwing away empty bottles and cans freely on streets
- Disregard for proper waste disposal by visitors from outside Osogbo.

RESEARCH INSTRUMENT

Logistric Regression

A form of regression analysis used when the response variable is a binary variable. Logistic regression is part of a category of statistical methods called generalized linear model. Logistic regression allow one to predict outcome from a set of variables that may be continuous, discrete, dichotomous, or a mix of any these. Generally, the dependent or response variable is dichotomous, such as presence/absence or success/failure. In situations where the independent variables are categorical or a mix of continuous and categorical logistic regression is preferred.

The Model

The dependent variable in logistic regression is usually dichotomous, that is, the dependent variable can take the value 1 with probability of success II, or the value 0 with. Probability of failure 1-II. This type of variable is called a Bernoulli (or binary) variable, although not as common and not discussed in this research work.

Applications of logistics regression have also been extended to cases where the dependent variable is of more than two cases known as multinomial or polychromous). As mentioned previously, the independent or predictor variables in logistic regression can take any form

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that is logistic regression makes no assumption about the distribution of the independent variables.

They do not have to be normally distributed, linealy related or of equal variable within each group. The relationship between the predictor and response variable is not a linear function in logistic regression, therefore the logit transformation of logistic regression is used, which is the logit transformation of II.

$$II = \frac{e(\beta 0+\beta 1x1\beta 2x2+---,+\beta kxk)}{[1+e^{(\beta 0+\beta 1x1\beta 2x2+---,+\beta kxk)}]}$$

Where β_0 = the constant of the equation and

β_i =the coefficient of the predictor variables

An alternative form of the logistic regression equation is:

$$\text{Logit (II (X)} = \text{Log}[\frac{\Pi(X)}{1-II(X)}]) = \beta_0+\beta_1x_1+\beta_2x_2+\beta_3x_3+\_\_\_+\beta_ix_i$$

The goal of the logistic regression is to correctly predict the category of outcome for individual cases using the most parsimonious model.

Multiple Logistic Regression

Just as with regression using ordinary least squares, we often have several explanatory (predictor) variables with a binary response. The ideas of logistic regression can be extended to the case with multiple explanatory (predictor) variables (Cook. D 2001). The general multiple logistic regression models are well explained in many statistical text books as:

$$II = \frac{\exp(\beta ixi)}{1+\exp(\beta ixi)}$$

For the case of multiple, it becomes:

$$II = \frac{e(\beta 0+\beta 1x1\beta 2x2+---,+\beta kxk)}{[1+e^{(\beta 0+\beta 1x1\beta 2x2+---,+\beta kxk)}]}$$

X^2 –Test For Regression Association

To test whether there is a regression between the response variable Y and the set of X variables $X_i,\ldots,X_{p-1}$. i.e, to choose between the alternatives:

H_0: $\beta_1 = \beta_2 = \ldots\ldots\ldots = \beta_{p-1} = 0$

H_1: not all β_k (k =1,…..,p-1)equal zero

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Test statistics:

$$X^2_{cal} = \sum_{i=1}^{n} \frac{(oi - Ei)2}{Ei}$$

Where O_i and E_i are the observed and expected frequencies respectively

The decision rule to control type 1 error at α is:

If $X^2_{cal} \leq X^2_p$ (α, r-1,c-1), conclude H_o

If $X^2_{cal} > X^2_p$ (α, r-1,c-1), conclude H_1

The existence of a regression association does not ensure that useful predictions can be made by using it.

Coefficient of Multiple Determinations

The coefficient of multiple determination, denoted by r2, is defined as follows"

$$R2 - SSR = 1 - SSE$$

$$SSTO \quad SSTO$$

Where

SSTO = Y'Y-n$\bar{Y}^2$ = total sum of squares

SSR = X'Y $\hat{\beta}$'-n$\bar{Y}^2$= regression sum of squares

SSE = Y'Y-X'Y$\hat{\beta}$'= ERROR SUM OF SQUARES

Coefficient of multiple determination measures the proportionate reduction of total variation in Y associates with the use of the set of X variables $X_1,\ldots,X_{p-1}$. The coefficient of multiple determination R^2 reduces to the coefficient of simple determination for simple linear regression when p-1 = 1, i.e, when one X variable is in regression model. We have

$$0 \leq R^2 \leq 1$$

Where R^2 assumes the value 0 when all b_k =0 (k=1,….,p-1), and the value 1 when all Y observation fall directly on the fitted regression surface,i.e, when $Y_i = \hat{Y}1$ for all i.

Adding more X variables to the regression model can only increase R^2 and never reduce it, because SSE can never become larger with more X variables and SSTO is always the same for a given set of responses. Since R^2 usually can be made larger by including a larger

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number of predictor variables, it is sometimes suggested that a modified measure be used that adjusts for the number of X variables in the model. The adjusted coefficient of multiple determinations, denoted by R_a^2 adjusts R^2 by dividing each sum of squares by its associated degrees of freedom:

$$R_a^2 = \frac{1 - \frac{SSE}{n-p}}{\frac{SSTO}{n-1}} = 1 - (n-1)\frac{SSE}{(n-p)\,SSTO}$$

This adjusted coefficient of multiple determinations may actually become smaller when another X variable is interdicted into the model, because any decrease in SSE may be more than offset by loss of a degree of freedom in the denominator n-p,

$R_1^2 R_0^2$ ARE $\chi 2$ DISTRIBUTED

$R_0^2 = \min_{\beta}$ (Y-Xβ)'(Y-Xβ) = X'X$\hat{\beta}$ = X'Y is unconstraint minimization and a measure of the error

$R_1^2 = \min_{H'\beta}$ = 0(Y-Xβ)'(Y-Xβ) constrained minimization

Fisher-Cochran-s theorem

$Q=Q_1+Q_2+\ldots\ldots+Q_k$ when Q_s are independently distributed chi-square

Set

$$Q=Y'Y+\beta'X'X\beta -2\beta'X'Y + \lambda'(H'\beta-\theta)$$

When λ is a non-zero vector, let $\hat{\beta}H$ denote the value of β that minimizes Q

$\delta Q = 0 \longrightarrow$ $2X'X\hat{\beta}H-2X'Y + H\lambda = 0$ ……..(i)

$\overline{\delta\beta}$

$\overline{\frac{\delta Q}{\delta\lambda}} = 0 \longrightarrow$ $H'\hat{\beta}H = 0$ ……(ii)

From equation (i),

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$\hat{\beta}H = (X'X)^{-1}X'Y - 1/2\ (X'X)^{-1}H\lambda$ ……(iii)

From equation (ii)

$0= H'\hat{\beta}H=H'(X'X)^{-1}\ X'Y-1/2\ H'(X'X)^{-1}H\lambda$

$=H'CX'Y=1/2M\lambda$

When C = (X'X)-1, M = H'C

And

$-\ \frac{1}{2}\lambda = M^{-1}\theta - M^{-1}H'CX'Y$ ……..(iv)

NowR_1^2=(Y-X$\hat{\beta}$)'(Y-X$\hat{\beta}$)

=(Y-X$\hat{\beta}$+X$\hat{\beta}$-X$\hat{\beta}$)'(Y-X$\hat{\beta}$+X$\hat{\beta}$-X$\hat{\beta}$)

=(Y-X$\hat{\beta}$)'(Y-X$\hat{\beta}$) + ($\hat{\beta}$-$\hat{\beta}$H)'X'X($\hat{\beta}$-$\hat{\beta}$H)

$R_1^2=R_0^2$ + ($\hat{\beta}$-$\hat{\beta}$H)'X'X($\hat{\beta}$-$\hat{\beta}$H) ……(vi)

Substitute for $\hat{\beta}$H in (vi) for to obtain

$R_1^2=R_0^2$ + (H'$\hat{\beta}$-θ)'M^{-1}(H'$\hat{\beta}$θ) ……(vii)

E(R_0^2)= (n-r)σ^2

E($R_1^2 - R_0^2$)= pσ^2

When H β = θ

R_0^2 -

σ2 -χ2(n-r)

$$\frac{R_1^2 - R_0^2}{\sigma 2} = \chi 2p$$

And independent. Hence

$$\frac{(R_1^2 - R_0^2)}{b} \div \frac{R_0^2}{(n-r)} \quad \text{----------viii}$$

$F_{b,n,r}$

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METHODOLOGY

Study Area

The area of the study is the city of Osogbo, the capital of Osun state. Roughly 1,603 food outlets and restaurants operate within the Olorunda and Osogbo Local Government. It is well known that food outlets produce massive volumes of solid and liquid waste (dirty water, used cooking oil, soft drink etc)due to the nature of their business. Food outlets have the capacity to produce large volume of trash, empty bottles, empty food packages, cigarette buts, empty food cans, dirty water, used cooking oil, soft drinks, etc on a regular basic. They are often busy, fully occupied, and the accumulation of trash is quite rapid, especially during peak rush hours and holidays. Hence, the management of wastes in the community is challenging endeavor and management of waste from food outlets constitutes a significant aspect of the overall responsibility of the state management agency.

Sample Size

The sampling frame of this study consists of the list of all food outlets including liquor stores selling food along with liquor operating Osogbo..

Based on a survey conducted by the research consulting company Brain Exchange Ltd based in osogbo during the "1st OSUN SATE FIRE PREVENTION SAFETY AND MANAGEMENT TRAINING/EXHIBTION 2010" the total number of food outlets operating in both Olorunda and Osogbo local government was estimate to be over 1,603. This figure included all food outlets operating within Osogbo including liquor stores selling food along with liquor to customers.

The sample size of study is 332 which amounts 21% of all food outlets operating in Osogbo.

Sampling Technique and Data Collection

Systematic random sampling was used for selecting eligible food outlets within Osogbo. Eligibility of participants was determined based on willingness to take part in the study voluntarily, willingness to provide accurate information and records to interviewers, and operating food outlets within Osogbo.

Measurement of Variables

Dependent variable of study (Y)

Y: Final score for proper waste disposal = excellent or good very satisfactorily than less or poor if, 0 1

In binary logistic regression analysis, the dependent variable of study (Y) has 2 categories only (1,0). Category 0 denotes success (satisfactory performance in waste disposal).This is a universal notation used in binary logistic regression analysis

Independent Variables of Study

Independent variables of study are factory that the extent to which waste is properly disposed of at the 332 food outlets that were selected for the study. At each food outlet, data was

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gathered on the following variables of study. Data were gathered based on personal observation and interviews. Responses obtained from interviewers that were captured in questionnaires.

Factors/Responses

Efficiency of the manager = { 1 *if poor*, 2 *if less than satisfactory*, 3 *if satisfactory*, 4 *if very good*, 5 *if excellent* } (a 5 POINT ORDINAL SCALE)

Reduction of waste from source = { 1 *if poor*, 2 *if less than satisfactory*, 3 *if satisfactory*, 4 *if very good*, 5 *if excellent* } (a 5 POINT ORDINAL

Availability trash cans = { 1 *if poor*, 2 *if less than satisfactory*, 3 *if satisfactory*, 4 *if very good*, 5 *if excellent* } (a 5 POINT ORDINAL SCALE)

Perception on the importance of efficient and proper waste disposal (1, 2, 3, 4, 5)

{ 1 *if poor*, 2 *if less than satisfactory*, 3 *if satisfactory*, 4 *if very good*, 5 *if excellent* } (a 5 POINT ORDINAL SCALE)

(The above variable measures the importance of efficient and proper waste disposal)

SUMMARY OF KEY FINDINGS

The focus of the research is to identify factors that affect the efficient management of waste at the 332 food outlets selected for the study. The influential variables that affect efficiency in waste disposal are wrong perception, failure to provide customers with trash cans, the operation of food outlets by non-owners, and failure to use source reduction as a waste management tool, in a decreasing order of importance. The adjusted odds ratio of the variable

Print ISSN: 2056-7537(print), Online ISSN: 2056-7545(online)

perception is 11.03. this shows that a manager or owner who has the perception that proper waste management is not helpful is 11.03 times as likely to be inefficient in the proper management of waste.

The adjusted odds ratio of the variable trash can is 3.17. this shows that a food outlet where there is no trash can for customers is 3.17. times as likely to be inefficient in the management of waste in comparison with a food outlet where there is a trash can for customers. The adjusted odds ratio of the variable manager is 2.36. This shows that an outlet that is operated by someone who is not a manager or owner is 2.36 times as likely to be inefficient in the proper management of waste in comparision with an outlet that is operated by someone who is a manager or owner.

The adjusted odds ratio of the variable source reduction is 2.23. this shows that a food outlet that does not manage waste disposal through source reduction is 2.23 times as likely to be inefficient in the proper management of waste in comparison with a food outlet that manges waste disposal through source reduction. Adjusted odds ratios are more reliable that unadjusted odds ratio in epidemiological studies of this kind. The adjusted odds ratios did not differ much from the unadjusted odds ratios, thereby showing that none of the variable used for adjustment was a confounding variable. There was no effect modifying variable.

CONCLUSION AND RECOMMENDTIONS

Waste products generated by food outlets are generally harmless. But have the potential for reducing the quality of environmental sanitation and cleanliness significantly.

The result of this study shows that 18% of the 332 foo outlets in the study were generally inefficient in waste disposal. Based on odds ratios estimated from binary logistic regression analysis, wrong perception (a factor of 10.88), failure to provide trash cans to customers (a factor of 3.15), the operation of food outlets by non-owners or managers (a factor of 2.33), and failure to practice source reduction of waste (a factor of 2.25) are the top 4 factors that affect the proper management of waste at 332 food outlets in study.

Based on the findings of this study, our recommendation is made to the city of Osogbo with a view to initiate suitable intervention. The planned intervention shall be aimed at improving the proper disposal of solid and liquid waste at food outlets operating in the Osogbo and its environs. Sanitary and health education should be provided to operators of food outlets to address issues such as wrong perception on the usefulness of proper waste disposal, the provision of customer with trash cans, the operation of food outlets by non-owers, and the need to exercise source reduction as a waste management tool. Provide incentives to food outlets that do a good job in terms of waste collection and proper disposal. Improve the conditions of employment of municipal workers responsible for waste collection and disposal. Food outlets should have trade union or association. Support community-based health promotion activities bynon=governmental organizations. Support research initiatives that benefit for overall sanitation, environmental cleanliness and good personal hygiene in the state by funding them.

Print ISSN: 2056-7537(print), Online ISSN: 2056-7545(online)

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Print ISSN: 2056-7537(print), Online ISSN: 2056-7545(online)