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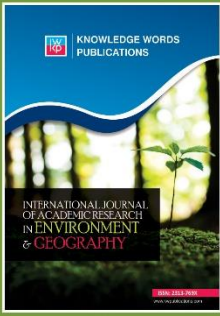
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Environmental Sanitation Perception and Practices of the Disposal of the Dead in the Ile – Ife City, Nigeria

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Abstract

The study aimed at examining the perception and practices of residents as regards the disposal of corpses and carcasses in the Ile-Ife, a traditional African City. A total of 192 residents were sampled for questionnaire administration. The study found that the residents were of different of socioeconomic and housing characteristics. On the disposal of the dead, it was found that dumping was the usual method of disposal of carcasses. For disposal of corpses, 77.9% of residents in Ile-Ife would bury their dead around houses. Findings also revealed that 66.8% of the residents preferred burial with coffin while 30.5% said they would prefer burial without coffin. Also, 57.4% of the residents agreed that the dead could be buried around the house, 18.1% were neutral to the proposition and 24.5% disagreed with the proposition. Findings also revealed that most of the residents (78.2%) had no knowledge about the polluting effects of disposal of the dead on the nearby water sources. This study concluded that the disposal of the dead in the study area is not environmentally-friendly and with no health concern.

Keywords: Disposal of Corpses and Carcasses, Questionnaire, Environment Perception, The ILE – Ife City, Nigeria.

Introduction

It is factual that death is inevitable for all living things, both human and non-human. Therefore, the living human beings have to contend with issues surrounding the disposal of bodies. This is mostly the dead bodies of loved ones, regardless of the location of such people. Nevertheless, the concern for disposal of dead bodies sometimes involved unidentified bodies or victims of certain disasters, and animals. In this study, disposal of the dead is examined in relation to dead humans as corpses and dead animals as carcasses.

According to Cohen (2002), disposal of the remains (whether corpses and carcasses), and the behaviour of close kin and others for a specified period of mourning are spelled out by

society. In other words, cultures dictate what is right and even what is wrong. There are different methods of the disposal of the dead as dictated by different cultures. Although, this phenomenon is largely social in nature and is determined to a large extent by cultures and traditions, other dimensions such as behavioural issues based on environmental and legal means are of significance in disposal of corpses and carcasses. Also, regardless of the method applied, the adverse environmental effects cannot be denied.

The two most widely used methods of disposal of corpses are cremation and burial (Guttman, Watson and Miller, 2011). Cremation is a method of cadaver disposal through which the dead body is reduced to bone, ashes and fragments using intense heat. Thus, the water content of the body is evaporated and carbon is incinerated leaving inorganic bone ash and fragments (Auger, 2000). It is noteworthy that contamination from cremation results from two main sources: the burning process releasing atmospheric pollutants and disposal of ashes.

On the other hand, burial of human remains is a particular kind of landfill (Dent, 2002). It is another method of disposal where bodies are placed in the earth. Corpses may be buried directly in the ground, wrapped or placed in a coffin with artefacts and clothing. Dent (2002) further put it that plumes of indicator bacteria are traceable to burial as a method of disposal of corpses suggesting that microbiological decay products reach the groundwater. Earlier in their study, Ucisik and Rushbrook (1998) observed that the principal mechanism of contamination is by rainwater percolating through the soil and coming into contact with buried remains.

For carcass disposal, three main methods have been identified (Nutsh and Spire, 2004). These are trench burial, land filling and mass burial. Disposal by trench burial involves excavating a trough into the earth, placing carcasses in the trench, and covering with the excavated material (Nutsh and Spire, 2004). According to Henry (2004), trench burial has long been the common on-farm approach to disposing of dead animals and it requires relatively little expertise to perform. The detrimental environmental effects of trench burial are well documented (Ellis, 2001; Nutsh and Spire, 2004; Flory, Peer & Bendfeldt, 2006). The studies concluded that trench burial poses a threat to water quality through ground water contamination and also presents the risk of disease agents persisting in the environment.

Disposal of animal carcasses by means of landfills is done with technically complex systems specifically designed to protect the environment (Flory et al., 2002). However, landfilling of carcasses represents a means of containment rather than of elimination, and long-term management of the waste is required. Another possible disadvantage associated with landfill disposal is the potential spread of disease agents during transport of infected material to the landfill (Ellis, 2001; Nutsh and Spire, 2004; Flory et al., 2006). Mass burial has to do with disposal of high volumes of carcasses. Nutsch and Spire (2004) put it that mass burial has problems of high costs, environmental contamination, costly monitoring and management of the facilities, its use for containment rather than of elimination, presentation of opportunities for spread of disease during transport from farm sites to the mass burial site, and not generating a usable by-product of any value

It is glaring from the above that the issues of the disposal of the dead are not new in academic discourse. Douglas (2003) put it that there is practically no single aspect of death studies that inevitably engages with as many academic disciples as disposal of the dead. For instance, many anthropologists have explored issues related to death and disposal human bodies both in the distant and recent past (Kroeber, 1927; Brown, 1971; Rosenblatt et al, 1976;

Bloch and Parry, 1982; Chapman, et al. 1981; Metcalf and Huntington, 1991; Morgan, 2004; Pan American Health Organisation and World Health Organisation, 2004). Likewise, discussions abound on the disposal of dead animals (Ellis, 2001; Nutsch and Spire, 2004; Flory et al, 2006).

Studies based on the disposal of the dead and with environmental concern have revealed that the disposal methods of carcasses and corpses can have various environmental implications (Ellis, 2001; Morgan, 2004; Pan American Health Organisation and World Health Organisation, 2004; Nutsch and Spire, 2004; Flory et al, 2006). In the words of Guttman et al (2011), disposal of corpses represents an increasingly recognized source of pollution that needs to be accepted and addressed. They further asserted that both methods of disposal of corpses (cremation and burial) pose environmental and human health risks that need to be addressed by all stakeholders. Dairy Catch (2006) also put it that improper disposal of animal carcasses can contaminate drinking water sources or spread diseases as decomposing carcasses are a source of disease producing bacteria, and provide the ideal habitat for disease vectors. Likewise, the sight and smell of dead animals creates a bad living environment.

In Africa, disposal of the dead is recognized as a very important aspect of environmental sanitation (Government of Ghana, 1999; FGN, 2005; Republic of Sudan, 2010) which could be worrisome if not properly done. For instance, it is stated in Nigerian National Environmental Sanitation Policy that it is not uncommon to see animal carcasses and remains of destitute and accident victims left unattended on the streets for days and even weeks (FGN, 2005). Also, it is documented in the policy that the disposal of the dead is usually hinged on a number of factors including religious and cultural practices. As a result of the many variations in culture and tradition across different geographical boundaries, the issue of disposal of the dead are addressed in different ways and different methods are adopted.

Based on the foregoing, it is expedient to empirically investigate into the background of the people, in relation to their practices and environmental perception of the disposal of the dead. The introduction of perception in this study is based on the fact that perception data can be a tool in proffering solution to different problems in the different human endeavours (Afon, 2009). It has been applied to know residents' attitudes towards environmental hazards and risks (Sadalla et al, 1999) and to assess the environmental sanitation of residential areas (Daramola, 2015).

The importance of studying environmental perception stems from the fact that several aspects of man's daily living are affected by his perception. As noted by Sinclair (2006), perception affects awareness and analysis of problems, interpretations of data, judgment of potential outcomes and the way people organize and interpret the world around them in order to give meaning to their surroundings. Therefore, environmental perception makes the people aware of their environment, which consequently produces a change of attitude to the environment (Chokor, 1988). It cannot be gainsaid that an empirical study based on environmental perception is capable of improving environmental quality and promoting environmental pressure groups.

Thus, the thrust of this paper is to examine the perception and practices of residents as regards the disposal of corpses and carcasses in Ile-Ife, a traditional African city. In achieving this, the study examined the socio-economic characteristics of the residents in Ile-Ife; it assessed the residents' perception and practices of the disposal of the dead in the study and

also examined the factors responsible for the perception and practices of the residents of the city.

Materials and Methods

Ile-Ife, the study area, is one of the largest and most popular towns in Osun State of Nigeria. It is a traditional city that is widely regarded as the cradle of Yoruba race, a dominant ethnic group in Nigeria located in its southwestern part. Also, as an old city, it is rich in culture and tenacious in tradition. Ile-Ife lies between latitude north 7° and $7^{\circ} 35'$ and longitude east $4^{\circ} 20'$ and $4^{\circ} 45'$. It covers an area of 1,846 km² with a population of 214,258 (Federal Government of Nigeria, 2007). The city has two Local Government Areas – Ife Central and Ife East – with each divided into political wards for election purposes. However, 17 of such political wards are in the built area of the city.

Three political wards were randomly selected out of the 17 wards. Also, with the selection of every 30th residential building in the three selected wards, a total of 192 residents were sampled for questionnaire administration. Data collected through the questionnaire survey include socio-economic attributes of the residents and those pertaining to residents' perception and practices of the disposal of the dead. The questionnaire was designed to seek the opinion of residents on the level of agreement/disagreement on a 1-5 Likert – type scale using 1 for strongly disagreed, 2 for disagreed, 3 for just agreed, 4 for agreed and 5 for strongly agreed. Analysis of data was done using crosstabulation. The level of agreement/disagreement analysis was determined by dichotomising the five-point scale into two-point of 0 or 1 degree of agreement. A resident who scores any variable from 1-3 is coded as 0 meaning 'disagreed' while 4 and 5 is coded as 1 meaning 'agreed'. The results indicate the proportion of residents that 'agreed' and 'disagreed'.

Results and Discussion

Socioeconomic and Housing Attributes of Residents

The study considered the socioeconomic, demographic and housing characteristics of residents that can influence the determinants of perception and practices of the disposal of the dead. These are gender, education qualification, age, income, religion, tribe, and residents' house tenure. As presented in Table no. 1, findings revealed that 43.2% of the respondents were male while 56.8% were female. This gender distribution will afford the study to have perceptions based on gender differential. Also, majority of the respondents (90.9%) were between age of 20 and 60 years. Only 5.9% of them were less than 20 years while 3.1% of them were above 60 years. Further findings revealed that the minimum age was 18 years and the maximum age of the sampled residents was 60 years with mean age of 38 years. This indicates that the residents were of age to give reliable information on disposal of the dead because with their ages, they are expected to have experience in relation to the disposal of the dead.

Findings also revealed that 30.9% of the residents sampled in the study area had primary education while 36.3% and 32.8% had secondary and tertiary education respectively. This indicates that all the residents have had access to formal education and almost one-third (32.8%) of them had tertiary education while more than two-third (68.2%) of the residents had minimum of secondary education. In the same vein, data collected pertaining to the number of year the residents have spent in pursuit of formal education revealed that the minimum period

was 6 years while the maximum was 25 years and the mean number of years spent in school by the residents was 15 years.

For ease of analysis, the initial quantitative data on residents' average monthly income were grouped into three: low, medium and high. Income below N20,000 categorised as low. The reason is that the minimum wage at the federal level in Nigeria is N18,000 while it ranges from N15,000 to N20,000 in the states of the federation. The medium monthly income was categorised from N20,000 to N50,000 while residents earning above N50,000 were categorised as high income earners. Based on the categorisation, variation in income class existed among the residents in the study area. Findings revealed that 13.9% of the residents earned less than N20,000; 63.0% earned from N20,000 – N49,999; 18.9% earned N50,000 – N99,999; while 4.2% earned N100,000 and above. Further findings revealed that the minimum income was N8,500 while the maximum was N250,000. The average mean income of the sample residents in the study area was N47,720. This indicates that the residents were mainly of the middle income earning.

Table no. 1 – Socioeconomic Attributes of Residents

Variable	Frequency	Percentage	Variable	Frequency	Percentage
Gender Distribution			Average Monthly Income (in Naira)		
Male	83	43.2	< 20,000	27	13.9
Female	109	56.8	20,000-49,999	121	63.0
Total	192	100.0	50,000-99,999	34	18.9
Age Distribution (in years)			≥100,000	8	4.2
Below 20	11	5.9	Total	192	100.0
20-39	75	39.2	Educational Qualification		
40-59	100	51.7	Primary	59	30.9
60 & above	6	3.1	Secondary	70	36.3
Total	192	100.0	Tertiary	63	32.8
Marital Status			Total	192	100.0
Single	86	44.8	House Tenure		
Married	106	55.2	Owner-occupied	110	57.3
Total	192	100.0	Rented	82	42.7
Religion			Total	192	100.0
Christianity	125	64.9	Tribe		
Islam	49	25.7	Yoruba	177	92.2
Traditional	18	9.4	Others	15	7.8
Total	192	100.0	Total	192	100.0

Source: research findings

Other identifiable parameters in relation to the disposal of the dead are religion and tribe. These are relevant because they have to do with people's culture and tradition. Findings revealed that 64.9% of the respondents were Christians while 25.7% were Muslims and 9.4% of the respondents were practising traditional religion. These are the two major religions in Nigeria; the third being the traditional religion. It should however be stated that even some

who take part in activities of traditional religion still adherents of either of the two major religion. Findings on tribes of the residents sampled also revealed that they were mainly Yorubas (92.2%) as expected since the study area is a Yoruba city. Nevertheless, 7.8% of the residents were of other tribes such as Hausa and Ibo.

Investigation was also made into the house tenure of the residents to know whether the house were owner-occupier or rented. The essence of this variable is that the ownership or otherwise of the house occupied by a resident can make him bury his dead loved ones inside his house or not. It was discovered that 57.1% of the residents sampled were owners of the houses they occupied while 42.9% rented their houses.

Practices of the Disposal of the Dead

Information on the practices of the disposal of the dead in the Ile-Ife City as put by the residents are presented in Table no. 2. Starting with the disposal of dead animals, the usual methods in the study area are burial, burning, dumping by the roadside, dumping in a stream, dumping on a dumpsite and disposal by the local government. Findings revealed that mostly, the methods were dumping in streams (42.7%), on open dumpsites (23.9%) and by the roadside (15.6%). This was without much variation across the residential zones of the study area. Also, 9.9% and 6.8% of the residents were of the opinion that burial and burning were methods of disposal of dead animals respectively. However, the only method that can be considered environmentally-friendly (disposal by the local government) was recognised by just 1.1% of the residents. This revealed that the practice of the disposal of the dead animals in the study area is not environmentally – friendly.

Table no. 2 – Practices of the Disposal of the Dead

Parameter	Frequency	Percentage
Usual Disposal Methods of Dead Animal		
Buried	19	9.9
Burnt	13	6.8
Dumped by the roadside	30	15.6
Dumped in a stream	82	42.7
Dumped on a dumpsite	46	23.9
Disposal by Local Govt	2	1.1
Total	192	100.0
Burial of Dead Ones around Houses		
Yes	150	77.1
No	42	22.9
Total	192	100.0
Preferred Method for Burial of Dead Persons		
Burial with coffin	128	66.7
Burial without coffin	59	30.7
Burning of dead bodies	5	2.6
Total	192	100.0

Source: research findings

Findings on the disposal of corpses revealed that cremation is not practiced in the study area but burial. As such investigation was made on the common practice of burying dead persons around the house. It was discovered that the residents were mostly in support of burial of their dead ones around houses. Quantitatively, 77.1% of residents in the Ile-Ife City would bury their dead around houses. On the preferred method burial of dead persons, 66.7% of the residents preferred burial with coffin while 30.7% said they would prefer burial without coffin. The remaining 2.6% of the residents were in support of burning as a disposal method. These findings are in accordance with the religion of the people. It was earlier stated that Christians form the majority among the sampled residents (64.9%). Thus, it is expected that more people would prefer burial with coffin to without coffin since Christians usually use coffin for burial while Muslims do not.

Locational Perception of Burial of the Dead Persons

Findings on the perception of the residents in respect of where the dead person should be buried are as presented in Table no. 3. It is discovered that majority of the residents (85.4%) disagreed with the opinion that burial should be inside the house. However, despite the fact that majority of the residents would not bury their dead person inside the house, they agreed that the dead could be buried around the house. This was the perception of 57.4% of the residents while 18.1% were neutral to the proposition and 24.5% disagreed with the proposition. These findings indicate that mainly, the residents were of the opinion that burial of the dead should be around his house or the houses of his/her survivor and it is a normal cultural practice that should be upheld.

The perception of the residents was also sought on issues that have to do with burial inside/around the house. It was discovered that 62.3% of the residents in the study area agreed that burial inside/around the house indicates ownership of the house by the dead, 12.0% of the residents were neutral while the remaining 24.7% disagreed with the proposition. There were also findings on the agreement or otherwise of the residents with the proposition that burial inside/around the house assures of the presence of the spirit of the dead. Findings revealed that 82.8% of the residents disagreed with the proposition. A little more than 10.4% of the residents in the study area were neutral to the proposition while only 6.8% agreed. Information were also sought on the perception of the residents on the proposition that burial inside/around the house causes pollution of nearby water sources. It was discovered that only 29.7% of the residents agreed that burial inside/around the house causes pollution, 51.0% were neutral to the proposition while 19.3% disagreed. These findings revealed that the residents had no knowledge about the polluting effects of disposal of the dead on the nearby water sources as contained in the studies conducted by Pan American Health Organisation and World Health Organisation (2004), Nutsch and Spire (2004), Flory, Peer & Bendfeldt (2006) and Guttman, Watson and Miller (2011). This can be deadly in a city where majority of the residents draw water from their hand-dug wells.

Table no. 3 – Residents’ Locational Perception of Burial of the Dead Persons

Perception	Frequency	Percentage
Burial should be inside the house		
Agreed	26	13.5
Neutral	2	1.1
Disagreed	164	85.4
Total	192	100.0
Burial should be around the house		
Agreed	110	57.4
Neutral	35	18.1
Disagreed	47	24.5
Total	192	100.0
Burial inside/around the house shows the dead owned the house		
Agreed	120	62.3
Neutral	23	12.0
Disagreed	49	24.7
Total	192	100.0
Burial inside/around the house assures of the presence of the spirit of the dead		
Agreed	13	6.8
Neutral	20	10.4
Disagreed	159	82.8
Total	192	100.0
Burial inside/around the house causes pollution of nearby water sources		
Agreed	57	29.7
Neutral	98	51.0
Disagreed	37	19.3
Total	192	100.0

Source: research findings

Perceived Determinants of the Burial of Corpses

Sequel to the expression of the perception on residents practices of the burial of dead persons, findings were also made on the determinants of the practices as presented in Table no. 4. In the City of Ile-Ife, it was discovered that 37.5% of the residents were of the opinion that culture determined the burial of the dead while 52.1% disagreed and 10.4% were neutral. In contrary, majority of the residents were of the opinion that religion was a determinant of the disposal of corpses in the study area. As contained in table no. 4, 76.1% of the residents were of the opinion that religion is a determinant of the burial of dead persons in the study area while 16.1% of the resident had contrary opinion and 7.7% were neutral. This indicates the perception that religion is a determinant of disposal of corpses holds sway in the study area.

Findings on the determinants of disposal of corpses also revealed that, most of the residents, 82.8% agreed that burial around the house indicates honouring the dead. Also, 80.7% were of the opinion that it creates the memory of the dead to their living loved ones respectively. Further findings on whether concern for environment and public health are determinants of disposal practices of the corpses in the study area. It was found that 20.8% of the residents agreed that concern for environment was a determinant for burial practices, 4.2% were neutral and 75.0% disagreed. The implication of these findings is that the lack of environmental concern by the residents in the disposal of their dead bodies may pollute the built environment and adversely affect its liveability. In the same vein, 20.8% of the residents agreed that concern for public health is a determinant for burial of corpses; whereas 66.7% disagreed and 12.5% were neutral. These findings can be related to the level of education. It is revealed here that despite the fact that most of the residents in the city had formal education, they were not advanced in environmental education. Thus, the findings revealed that despite the academic achievements of the residents in the study area, the people are in need of environmental education in order to increase their level of environmental consciousness and public health concern.

Table no. 4 – Determinants of the Burial of Dead Persons

Determinant	Frequency	Percentage
Culture		
Agreed	72	37.5
Neutral	20	10.4
Disagreed	100	52.1
Total	192	100.0
Religion		
Agreed	146	76.1
Neutral	15	7.8
Disagreed	31	16.1
Total	192	100.0
Honouring the dead		
Agreed	158	82.8
Neutral	15	7.8
Disagreed	18	9.4
Total	192	100.0
Creation of the memory of the dead		
Agreed	155	80.7
Neutral	4	2.1
Disagreed	33	17.2
Total	192	100.0
Concern for environment		
Agreed	40	20.8
Neutral	8	4.2
Disagreed	144	75.0

Total	192	100.0
Concern for public health		
Agreed	40	20.8
Neutral	24	12.5
Disagreed	128	66.7
Total	192	100.0

Source: research findings

Conclusions and Recommendations

This study has considered residents' perception and practices of the disposal of the dead (both corpses and carcasses) in the Ile-Ife City. The study found that the residents are of different characteristics (gender, income, educational status, religion and house tenure). It was also found that free range method of animal rearing was the usual practice. The residents perceived that the burial of the dead should be around his house or the houses of his survivor, but the preferred method can either be with or without coffin. It can then be concluded that dumping was the commonest method of the disposal of dead animals while the disposal of corpses was mainly determined by religion and culture. Thus, the disposal of the dead in the study area is not environmentally – friendly and with no health concern. It is therefore recommended that the local authorities in the city diligently and effectively enforce regulations prohibiting free range animal rearing in the study area and be alive to its responsibility of disposal of the dead in the public areas to avoid indiscriminate dumping. Also, the residents should be duly educated to be environmental concerned in their practices of the disposal of the dead in the study area.

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