

CULTURAL DIMENSIONS OF ENVIRONMENTAL PROBLEMS: A CRITICAL OVERVIEW OF SOLID WASTE GENERATION AND MANAGEMENT IN NIGERIA

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ABSTRACT

Several studies have presented solid waste generation and management in urban centres as an engineering and technological concern. These studies neglected culture as the basic determinants of all happenings in human society; hence, the cultural facets of solid waste generation and management were rendered insignificant. As culture provides the context within which all human activities take place, culture was envisaged in this paper as a driving force for public perception, decision making and participation in solid waste generation and management in urban centres. Therefore, this study adopted both meta-analysis and meta-synthesis to pinpoint and discuss some theoretical key cultural factors and social practices influencing municipal solid waste generation and management. It identified trends and relationship between findings from the available empirical and theoretical studies. This paper discovered in the available relevant literature that cultural factors such as customs, belief and attitude of the urbanites that promoted their preference for food packaged with non-biodegradable material and the ways they conducted social practices resulted in solid waste generation. Lastly, methods and the cost of solid waste disposal, individualism and nonchalant attitude of people were found as the factors militating against proper management of solid wastes.

Keywords: Social Practices, Solid Waste, Urbanites, Belief, Perception.

INTRODUCTION

Generating solid waste as an integral part of human survival and development is inevitable in human world (Ohaka, Ozor, & Ohaka, 2013; Longe, Longe, & Ukpebor, 2009; Seadon, 2006). For instance, food is among the basic needs for the survival of human beings and among the major development that is evident in food production, in urban centres in particular, is packaged

products. Aschemann and Hamm (2010), noted that many urban dwellers have preference for and are familiar with the canned, frozen, and prepackaged foods in most western-style supermarkets that are common in larger cities. Human desire for convenience and easy-to-prepare foods sustains demand for production of fast-food and packaged products that in turn add to solid waste generated in the contemporary era (Kozup, Creyer, & Burton, 2003).

In human world, improper management of solid waste is among the reasons often cited for the prevalence of disease (Ajibuah, 2013). Environmental hazards and health risks associated with improper solid waste management are generated as indiscriminate disposal of refuse is unrestrained and this poses threats to public health in general (WHO, 2008). In solid waste generation, sizeable number of studies have significantly focused on environmental, economic, technical, institutional and political factors (Bilitewski, 2008; Anastas & Zimmerman, 2003; Cheremisinoff, 2003) while few in-depth studies were carried out to explore cultural factor (Dessein et al., 2015; Duxbury, Cullen, & Pascual, 2012).

As culture provides the context or stage setting within which all human activities take place, the influence of culture is felt on a host of societal functions including generating of wastes (Purcell & Magette, 2010). The significance of culture suggests that many social activities and societal circumstances are linked to cultural considerations and thereby emphasizing the role of culture in solid waste generation. In many developing countries, the deplorable condition of urban waste management poses a challenge to public health with more adverse effect in low-income residential areas (McCoy, Hall, & Ridge, 2012). This effect has made environment the prime concern of scholars, non-governmental organisations (NGOs) government and international organisations. The current growing interest in promoting public health at the grass-roots level lends credence to this study. However, the current study reviewed relevant literature to pinpoint and discuss some key cultural factors and social practices influencing urban solid waste generation and management in Nigeria.

Theoretical Framework

This study explored theory of social constructionism of Berger and Thomas (1966) based on the capability of the tenets of the theory to present explanations on urban culture and as it influences solid waste generating and management through social activities of urban residents. Social constructionism seeks to explain the influence of urban culture on waste generation and management in human society on the basis of social framing. The theory holds that process of solid waste generation in human world can be understood without recourse to the divine. This assumption indicates that a supreme being or nature is not responsible for solid waste generation in society but people generate waste as they endeavour to construct their social life. As the theory explains, people devise culture of generating solid waste through social construct; however, not always deliberately. Social constructionism asserts that parts of urban culture that induce generating waste are socially constructed.

Discussion of Relevant Literature

Solid Waste and Society

Generating solid waste is among the human habits. Literature has indicated that waste is a dynamic concept that has to do with time, location, perception and situation; hence, what is regarded as a waste might not be so in other instances (Iyanda & Olaniyi, 2014; Blitstein & Evans, 2006; Lawal, 2004). For instance, Suttibak and Nitivattananon (2008) conceived waste as the item, material or substance that an individual consider useless at a given time and place.

According to Nadarajah and Yamamoto (2007), wastes refer to “substances or objects, which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law”. The definition of waste depends on the type or category of waste under consideration. Some of the dominant types of waste according to Nkwoada, Alisa, and Duru (2013), include municipal waste, solid waste, hazardous waste and, electronic waste.

Nadarajah and Yamamoto (2007) pinpointed the unwanted materials from domestic, commercial, institutional, community and industrial sources as the main form solid waste commonly found in urban centres of most developing countries. Moreover, according to Kofoworola (2007), differentiating between excreta and solid waste becomes difficult as solid waste mixes with excreta to the extent of being potentially hazardous to human health in many instances. Also, Tunmise (2014) presented solid waste as the materials produced by households or through commercial, institutional and industrial activities that are of no value the initial user while Walling, Walston, Warren, Warsley, and Wilhelm (2004), succinctly viewed solid waste as any material that people decide to dispose of. These definition indicates that that solid waste includes all items that people no longer have any use for and people either intend to get rid of or have already discarded.

Culture and Urban Culture

The convergence of scholars’ ideas of culture is that culture represents the total way of life that encompasses socially inherited characteristics of human societies, such as symbols, language, beliefs, customs, values and norms. Adeboye (2001) and Adogu et al. (2015), highlighted examples of cultural practices, these include a broad range of activities, such as religious and spiritual practices, art, medical treatment, diet and interpersonal relationships. Hosagrahar (2009) defined cultural practices as “the norms in behaviour and standards that developed in ethnic groups and communities”. Aderemi and Falade (2012) noted that cultural practices cover many aspects of daily life and influence behaviours of individuals and entire societies.

Afangideh, Joseph, and Atu (2012) conceptualized urban culture as the specific pattern of attitudes of the people, customs, beliefs, and overall atmosphere and sense of connection of people in urban centres. Moreover, Hosagrahar (2009) posited urban culture as a set of beliefs, practices, customs and behaviours that are found to be common among the majority of people living in a certain urban centre. These definitions indicated that urban culture shape the way that urban dwellers live and influence their choices, ideologies and personalities in a certain way.

Park (1984) noted that different types of subcultures often emerge in the urban centres. Also, Flanagan (1993) added that within an urban centre, multiple cultures develop, interact, and tend to create social change. However, Adeyemo and Gboyesola (2013) maintained that a particular pattern of culture tends to dominate an urban centre and this dominant culture is evident in the temperament, overall vibe, mood and setting, openness of the people to change and the types of change that they are aiming for. Hosagrahar (2015) therefore depicted urban culture as the distinctive social and cultural patterns that develop in urban centres including the physical structures and the social activities in the centres.

Urban Culture, Solid Waste Generation and Management Migration and Solid Waste Generation

According to Kofoworola (2007), during the course of the twentieth century, industrialization and urbanization affected the lives of people in the world in general and the third world in particular. Industrialization and urbanization depict a complicated process of change and this

process has unfolded in a variety of ways across different countries (Hosagrahar, 2015). As the developing countries, including Nigeria, began to adopt industrialization, they began to experience rapid transformation from agricultural societies to industrial societies (Lawal, (2004). The change in these developing countries resulted in the migration of people from rural areas to urban areas with a hope to find jobs, have access to infrastructure and facilities that concentrate in the urban centres (WHO, 2008). Therefore, leaving the rural area for urban centres in search for a greener pasture has become a part of culture of people in urban centres in Nigeria (Ajibuah & Terdoo, 2013).

According to Aderemi and Falade (2012), culture of leaving rural areas for urban centres significantly contributes to rapid increase in informal construction of low-income residential areas and slums in many urban centres as population of people is on the increase. These slums add to the challenge of urban solid waste management as the physical constraints of dense and low-income settlement, the inadequacies of other infrastructure services such as roads, drains and sanitary facilities often exacerbate waste management problems. Modebe and Ezeama (2011) added that the access of collection vehicles or push carts may be difficult where roads and footpaths are unpaved.

As urbanization and economic development increases in many developing countries, certain culture has begun to emerge (Kirchberg & Kagan, 2013). Afangideh et al. (2012) observed that many urban centres in the contemporary period experience a constantly evolving and dynamic urban culture as high levels of migration, expansion of city boundaries and changing cultural preferences continue to occur on daily basis. With the influx of migrants, urban centres in Nigeria have grown to resemble many western urban centres (Adeyemo & Gboyesola, 2013). For instance, Aderemi and Falade (2012) reported Lagos to be a massive, overcrowded city filled with traffic jams, movie theaters, department stores, restaurants, and supermarkets. They also, found that the influx of people into the urban area has put a strain on many services including waste management service.

However, the increase in the number of people to the cities resulted in the increase in waste generation in cities. Increase in urbanization generates corresponding increase in the amount of urban solid waste (Jacobs and Price, 2003). As migrants from rural area settle in urban centres, an increase in the number of urban residents is inevitable and this results in the increase product consumption and waste generation (Babatunde et al., 2013). In recent decades, unprecedented urban growth the world experienced generated an increase in urban population and solid waste produced (Bilitewski, 2008). Iyanda and Olaniyi (2014) identified household rubbish, sewage sludge, wastes from manufacturing activities, packaging items, discarded cars, old televisions, garden waste, old paint containers as among the common solid waste in urban centres in developing country. Nadarajah and Yamamoto (2007) identified the immediate effect of urbanization on waste management as increase in resources required to manage waste generated; mainly storage and disposal. Moreover, increase in volume of solid waste generated and mismanaged poses a challenge to urban solid waste management with more adverse effect in low-income residential areas (McCoy *et al.*, 2012).

Culture, Gender and Solid Waste Management

Cultural practices vary widely around the world and from one ethnic group to another. Cultural practices cover many aspects of daily life and influence behaviors of individuals and entire societies (Hosagrahar, 2009). In every society, participation in cultural practices involve both gender; however, a specific gender tends to be attached to or involved in a certain cultural

practice in a certain cultural context (Hutchison, Gottdiener, & Ryan, 2014; Ojua & Omono, 2012). For instance, Izugbara and Umoh (2004) purposively employed more women (67 per cent) than men (33 per cent) in a study on solid waste management in Lagos. The selection was because the study considered that women tended to be more actively involved in solid waste disposal and management than men according to the cultural context of the people.

Solid Waste Management

Solid waste management refers to the collection, transportation, processing, recycling or disposal of waste materials (Wagner & Arnold, 2008). Waste management practices differ from one society to another as there exist different levels of technology, income, nature and forms of the waste and as culture differs from culture (*ibid.*). Urban solid waste management is considered as one of the environmental challenges confronting urban areas in developing countries (Lawal, 2004) and Nigeria is no exception. Studies have disclosed that solid waste generated in urban centres is on the increase while social relations in terms of solid waste management are transformed (Modebe & Ezeama, 2011).

For instance, in a comparative study, Okalebo, Opata, & Mwasi (2014) noted that a conventional western-industrialized culture is assumed when applying recycling as a process of waste management while incineration and indiscriminate waste disposal methods characterize developing society. These assertions indicate that cultural differences and social activities form the basis of a potential limitation or driving force that influence public participation in waste generation and management. Examining the role of the public in waste management, studies have suggested that method of community involvement varies from one community to another depending on socioeconomic, political and cultural contexts as communities are heterogeneous (Sassen, 2000).

Also, in the literature, some key factors determining community participation in improving sustainable public health in general, and solid waste management in particular, are identified. The factors include health-related experience in the community, socio-economic status, cultural activities, awareness, education, training, social supports, public policy, access services and basic needs to improve public health, marginalization (Femi & Helen, 2013). Moreover, these studies suggested that the role of the public and the challenges they are likely to confront in promoting public health services vary from one community to another as there are cultural differences. Environmental sustainability has drawn the attention of scholars towards public involvement in waste generation and management, while Adeboye (2001) emphasized the influence of cultural factors in the sustainability.

Urban Culture and Use of Non-Biodegradable Material

Household in the Nigerian rural areas largely utilize biodegradable materials, as many houses are made of wood and bamboo and topped with a roof made of fronds from raffia palms (Onwuejeogu, 1975). Moreover, Onwuejeogu (*op. cit.*) described houses in some rural areas tend to be made of a bamboo frame held together with vines and mud and covered with banana leaves. He further explained that houses in rural areas are very airy to allow heat and the smoke from cooking fires to escape easily. On the other hand, literature has indicated that urban culture has influenced large aspects of social life of many urban dwellers. Urban culture has prompted a large number of urban dwellers to largely utilize non-biodegradable materials (Adeyemo & Gboyesola, 2013). For instance, Longe et al. (2009) reported that household in urban centres of Nigeria mainly utilize non-biodegradable materials, as many houses are made of glass material,

aluminum and topped with a roof made of iron sheets. These materials in most instances unless recycled add to solid waste in urban centres.

Moreover, in traditional Nigerian community in the past, drinks were consumed mainly in calabash and meals were served in leaves (Onwuejeogu, 1975); therefore, solid wastes generated in through this form were not threats to community as they were largely biodegradable. According to Izugbara and Umoh (2004), while rural dwellers in Nigeria tend to stick more with traditional foods and preparation techniques, eating habits of Nigerian urban dwellers have been transformed in many ways. Nigeria experiences rapid population growth as number of young and urbanized consumers is on the increase (Kofoworola, 2007). Increase in number of this class of people continues to be a major driving force for packaged foods over the period.

Ohaka et al. (2013) also noted that human daily activities in their cultural context give rise to a large variety of different wastes arising from different sources. As culture influences activities of people, Aschemann and Hamm (2010) opined that waste is related to the way people behave in the context of the consumer society. Moreover, the reality that human needs are infinitudes and means of satisfying them are intricate lends credence to the complexity of nature solid waste generation (Banga, 2013). Also, as there is an increase in the formal working culture and women in such employment (Aderemi & Falade, 2012), the desire for convenience and easy-to-prepare foods sustains demand for as well as production of fast-food and packaged products which in turn adds to solid waste generated in the contemporary era. Loureiro, McCluskey and Mittelhammer (2001) and Robinson, Borzekowski, Matheson and Kraemer (2007) added that many urban dwellers have preference for and are familiar with the canned, frozen, and prepackaged foods found in most western-style supermarkets as foreign restaurants also are common in larger cities. Calabash for drinking were replaced with glass and plastic bottles and canisters. Therefore, many materials that are used to package the fast-food in urban centres are non-biodegradable and this is to preserve the content and quality of the food (Adeyemo and Gboyesola, 2013); however, the material add to the amount of solid waste generated in urban centres.

Studies on interaction have examined the effects of food package information and marketing on consumer beliefs, preferences, choices and some aspect of their culture (Nkwoada et al., 2013; Longe et al., 2009). These most of studies adopted an experimental design in which some element of package labeling is manipulated. These studies found that nutrition-related claims, food packages and product branding, promotions, and other product information are used to entice the individuals preference for canned and packaged food. Also studies found that marketing activities, advertising and the shift in emphasis towards smaller packaging units also significantly influenced the preference of people some aspect of their culture (Oyeniyi, 2011).

However, Adeboye (2001) maintained that supermarkets and restaurants often are too expensive for the average Nigerian; thus, only the wealthy can afford to eat there like Westerners. Ayodeji (2012) opined that accessing package food and canned drinks has ceased to remain an exclusive preserve of the aristocratic class is no longer a status symbol or a prerogative of only the rich and affluent. Moreover, Aderemi and Falade (2012) found that most urban Nigerians tend to combine traditional cuisine with a little of Western-style foods and conveniences. Food in Nigeria is traditionally eaten by hand (Onwuejeogu, 1975). However, with the growing influence of Western culture in urban centre, in particular, forks and spoons are becoming more common, even in remote villages. Most of these utensils are recyclable; however, they add to the quantity of solid waste generated in urban centres.

Social Practices and Solid Waste Generation

Culture of most of the communities in Nigeria embraces social practices, rituals and festive events that are habitual activities that structure the lives of communities and groups (Ojua & Omono, 2012). Benjamin, Emmanuel and Gideon (2015) further explained that many social events in each community are shared by and relevant to majority of the members of the community. These social practices vary from small gatherings to large-scale social celebrations and commemorations. These scholars adduced the significance of these social practices as reaffirming the identity of those who practise them as a group or a society and, whether performed in public or private, are closely linked to important events.

Communities in Nigeria are rich in social practices such as wedding ceremonies, family meetings, funerals, economic, religious and leisure activities (Onwuejeogu, 1975). These social practices in most cases require serving meals. Adeniran (2005) emphasized that food plays a central role in the social practices of virtually all ethnic groups in Nigeria and most of the ceremonies in Nigeria would not be complete without participants sharing in a meal. According to him, Nigerian traditional culture considers inviting guests and not sharing a meal when they visit rude. He added that the culture considered inviting visitors to a special event such as a marriage, naming, graduation or a burial ceremony without serving meal undignified. Generating solid wastes is common in the practice of food customs at ceremonial occasions, in particular, when non-biodegradable material is used as the food container.

Prior to the past century, communities in Nigeria were mainly agrarian (Egharevba, Amengialue, Edobor, & Omoigberale, 2013); hence, solid wastes generated in the industries were largely biodegradable. However, with the advent of colonialism, industrialization and globalisation in the country, as petroleum production and industry began to boom, concentration on the new industries at the expense of agriculture took place and this compounded the challenges faced in solid waste generation and management (Enete, 2010).

Existing literature have pinpointed the significance of public participation and awareness to enhance environmental quality. Ayodeji (2012) posited that public awareness of the health-related challenges and communicable diseases resulted from improper management of solid waste enhanced participation of the public in environmental sanitation in particular and promoting public health in general.

Prevention is better than cure; hence, imbibing culture that enhances reduction of solid waste generation helps and serves as the beginning of solid waste management. Several studies suggested reduction of the quantity of solid waste as a way to maintain environmental sanitation and solid waste management (Ajibuah & Terdoo, 2013; Cheremisinoff, 2003; Ohakwe, Nnorom, & Iwunze, 2011). Moreover, Babatunde et al. (2013) found that majority of the respondents under his study were interested in reduction of the quantity of the household solid waste generated. However, other studies found that majority of people in most developing countries were yet to devise ways to reduce the household solid waste generated (Walling, *et al.* 2004). Femi and Helen (2013) also added that the cost involved in the process of reduction was found amounted to inability to actualize the quantity reduction. Modebe and Ezeama (2011) found that there are several approaches to waste management in southeastern Nigeria. The study revealed that solid waste in study location is managed through economic instruments, landfills, incineration or open burning, recycling or reuse.

Moreover, on solid waste management in Nigeria, literature indicated that burning of solid refuse as a method of solid waste disposal is cultural and common in the country (Ulaeto, Nnorom, Alisa, & Ewuzie, 2015; Lawal, 2004). Ajibuah & Terdoo (2013) considered the

awareness of people on environmental implication of burning refuse, the study indicated that majority of residents in urban centres of southwestern Nigeria were aware of the implication and yet cited burning as the cheapest means of solid waste management known and cultural to them.

Enhancing solid waste management in developing countries has prompted conducting studies on recycling process in Nigeria. For instance, in a study on awareness of the people about recycling of some solid waste such as nylon, plastic, iron and aluminum materials, Kofoworola (2007) found that majority of educated people in urban centres are aware of the recycling process while larger percentage of people with low level of education are not aware. The unfamiliarity of urbanites in Nigeria with the process lends credence to assertion of Tunmise (2014) that perpetual enlightenment on recycling process, in particular in urban areas, is low. Moreover, Kofoworola (*op. cit*) found that majority of residents in urban centres in Nigeria were not practicing the recycling process in spite of claiming being aware of the process. Moreover, he maintained that being aware of recycling process does not automatically translate to practicing the process as he found that majority of the people in Northern Nigeria were not involved in the recycling process. Tunmise (2014) added that people considered recycling of some cheap solid waste as time wasting and this factor constituted a challenge militating against practicing recycling process the country. As literature indicated that practicing recycling as a process of solid waste management is low in the country, the current review concluded that recycling method is not part of indigenous culture in Nigeria.

Factors Militating Against Proper Management of Solid Wastes

On solid waste management, studies indicated that members of communities in urban centres develop the idea of formulate a residential law to facilitate management and proper disposal of solid waste among themselves (Skumatz, 2008). Also, studies have suggested making laws to inhibit people from indiscriminate disposal of solid waste and if possible, to adopt concept of zero waste and pay-as-you-throw (Young, Ni, & Fan, 2010; Bilitewski, 2008). However, Achor and Nwafor (2014) have maintained that the efficacy of law, in particular on waste management depends on its applicability, the cost involved and the context of the culture in which the law exists. Another factor that scholars have found militating against proper management of solid waste is the cost required as the solid waste user charge (Izugbara & Umoh, 2004; Lawal, 2004). Moreover, studies adduced cooperation and social cohesion among people as another important factor to achieve sustainable environmental sanitation management. For instance, Bilitewski (2008) suggested that people in urban centres through social association tend to make and enforce the law to promote environmental sanitation in their environment. On the potential factors that influenced the perception of people concerning solid waste management, studies have established that socio-economic factors such as education and level of income significantly affect peoples perception about waste management (Tunmise, 2014; Abasiokong, 2010).

Ohakwe et al. (2011) cited nonchalant attitude and poor understanding of people towards proper solid waste management as among the significant factors that pose threats to achieving sustainable environmental sanitation and enhancement of public health. Hence, these scholars advocate orientation on proper management of the solid waste generated among people. Adeolu, Enesi, and Adeolu (2014) suggested provision of materials to facilitate sustainable management of solid waste in urban centres as they identified absence of public waste bins in some urban areas as among the reasons for poor waste management. Also, Adeyemo and Gboyesola, (2013) adduced availability of trucks, public bins and designed dumpsite facilitates proper disposal of waste and keeping the environment clean. Lasker and Weiss (2003) pinpointed the community as

the most important stakeholder in waste management activities, and therefore community must actively participate in the solutions by modifying peoples cultural patterns. For example, they recommended exerting discipline in separating waste, using containers in a beneficial way, and exercising environmentally friendly purchasing habits.

CONCLUSION

The current theoretical study concluded that solid waste generation and management in urban centres is not confined to being within the purview of engineering and technological concern. Studies have established that the cultural facets of solid waste generation and management are significant as culture constitutes the basic determinants of all happenings in human society. Therefore, it is hereby suggested that incorporating culture in the studies of solid waste management in human world is important to achieve the sustainable environmental maintenance.

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