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Opportunities to tackle apathy in solid waste management in rural integrated urban environment: The case of the Urora community in Benin City, Nigeria

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In sub-Sahara African countries, there exists apathy towards solid waste management and services. Indiscriminate waste disposal in Urora is addressed through a recent study which uses a combination of concepts from the sense of community, empowerment and phenomenological principles to explore how to engage households with other stakeholders to address the disconnect that has resulted in environmental degradation. The findings revealed that the problem of indiscriminate waste disposal in this community could not be meaningfully understood without understanding their communal living, behaviour and practices as mediated by rituals unmitigated by passage of time. Based on these results, this paper argues that 'living in the community' means taking an active part in the settlement's physical environments for effective income generating opportunities.

***Keywords**: Apathy, Community, Empowerment, Ritual, Solid Waste Management*

1. Introduction

Indiscriminate waste disposal is a pervasive problem across cities of developing countries (Medina, 2010; UN-Habitat, 2010; Guerrero, *et al.,* 2013). Solid wastes are variously defined and they manifest in various form but common identifiable characteristics. Solid wastes could be garbage, refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control

facility and other discarded materials including solid, liquid, semi-solid, or contained gaseous material, resulting from industrial, commercial, mining and agricultural wastes.

Several factors account for indiscriminate disposal of solid wastes, this includes the collapse of the traditional waste management systems, rapid rates of urbanisation unmatched by commensurate infrastructure and services, and above all, poor attitudes to waste management across society, including households and businesses (Addaney and Oppong, 2015). Global solid wastes generation is projected to escalate rapidly by 2050, jumping from 2.01 billion tonnes in 2016 to 3.4 billion tonnes by 2050. Daily per capita waste generation is found to be highest in high income or developed economies, this is projected to rise by 19 % by 2050. The low to middle income countries will experience the highest per capita solid waste generation, this is projected to increase by more than 40 %. According to the World Bank (2018), this comes as no surprise as waste generation was generally found to increase at a faster rate for incremental income changes at lower income levels than at high-income levels. The total quantity of waste generated in low-income countries is expected to increase by more than three times by 2050.

Several factors have been adduced for the growth trend in solid wastes (Mighua *et al.,* 2009, Burntley, 2007). Indeed, increasing population, economic growth, increase in living standards and rapidly changing lifestyles, and rapid urbanisation have been identified as significant factors underpinning acceleration in solid wastes production (Minghua *et al.,* 2009). Observable global trend shows that as countries achieve accelerated economic growth and development, particularly where the proceeds of such growth is equitably distributed, not only will lifestyles and pattern of consumption begin to change, also, the quantity and format of good and services consumed will begin to change (Bello, 2016). Other implicit factors contributing to solid wastes generations include inadequate organizational and institutional management and building capacities (Douti *et al.,* 2017; Oteng-Ababio *et al.,* 2013), which is exacerbated by the narrow capital base effect solid waste management systems and processes (Burntley, 2007; UN Habitat, 2010).

However, while these factors generally apply to the analysis of solid wastes across countries, analysing them within a country-specific context allows policies to be tailored to country peculiarities, taking on board the socio-cultural elements and dimension to solid wastes generation. In particular, the roles of communities, which serves as critical agents of change in mechanical societies, as represented at local levels in developing countries, can best be ascertained by seeking local solutions at relevant scales to global solid wastes problems. Doing so will further accomplish two things, firstly, it will deepen the interests of local communities in solid wastes. Secondly, it will also bridge capacity gaps both in terms of financial and human capital resources by opening up participatory opportunities for solid wastes management at local levels.

A key contributory factor to waste generation is the current and traditional linear extract-produce-use-dump (throughput flow model) material and energy flow that has been popular with the modern economic system but unsustainable (Korhonen *et al.*, 2017; Frosch and Gallopoulos, 1989). Accordingly, the flow runs down the system where it operates, where it takes it source and where it releases its wastes. To stem its tide, a circular/sharing economic system with a cyclical, alternative flow is advocated; this economic system emphasises product, material reuse, repair, refurbishing, biomass, wind solar and waste-derived energy throughout the product value chain (leung, *et al., 2019*; Korhonen, *et al.*, 2017; Mihelcic *et al.*, 2003: Rashid *et al.*, 2013). The sense of community and empowerment requires the conscious and fruitful combination of body, brain and environment which is possible through phenomenological study (see Figure 1). Phenomenology is an attempt to understand, adequately describe, analyse and interpret the consciousness and lived experience of an actor without addition or subtraction (Wertz *et al.*, 2011). Therefore, phenomenology is a philosophy and a research method designed to explore and understand people's everyday lived experiences through the use the three variables of intentionality, perception and embodiment of research subjects.

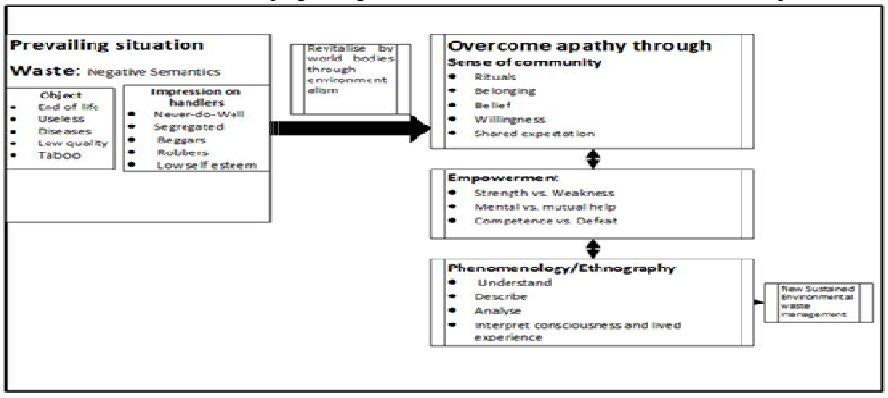

Figure 1. Conceptual Mapping of Apathy and Opportunities of Indiscriminate Waste Discourse

2. Research methodology

2.1. Study area: Urora

Urora lies between latitudes 60 22'04", 60 22'43" N and longitudes 50 41'11", 50 42'23" E with a population of 48 219 (2018 estimate projected from the 2006 National Population Census). However, the study location has been engulfed by Benin City, the state capital, due to population explosion especially arising from rapid urbanisation (see Figure 3). Figure 3 shows the map of Edo state showing Ikpoba-Okha where the Urora community is located. Administratively, Urora falls under the Benin Kingdon, the King or the Oba is the ultimate traditional authority

to whom all traditional leaders' reports. In other words, all traditional rulers, the Enigies in the Benin Kingdom, are hierarchically subordinate to the Oba. Additionally, Urora has a traditional priest (Ohen). Traditionally, and also for contemporary administrative convenience, the community is sub-divided into three quarters, namely Urora I (Ohen quarters), Urora II (across the Benin-Okene-Abuja highway), and Urora III (Aideyanba Quarters). Each of these quarters has their local traditional head as chiefs or Ohen. By the 1999 constitution, and as it is the case in many parts of the world, municipal waste management and service operations are executed by local councils or local authorities (Rotich *et al.*, 2006). The capacity of local authorities to function effectively in this role predicates upon their capital base, particularly the scope for local income generation through local taxations and ability to borrow from the capital market. As it is the case the world over, the ability of local authorities to raise revenue through taxation and access the capital market is severely restricted by national governments. In the particular case of Nigeria, local authorities or Councils are politically and economically emasculated by State Governments.

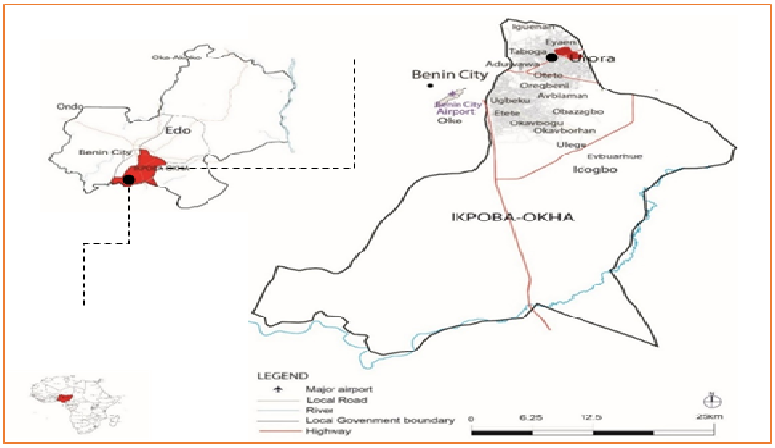

Figure 2. Source: Adapted and modified from DIVA-GIS and Edo State Ministry of Lands Surveys

Data for the study were collected as part of a more extensive research conducted throughout 4 months between late November 2016 to early March 2017 and 7-21 July 2017. The study has four main stages: ***Stage 1*** involve GPS in order to produce an updated base map with readings of meaning-making features of the settlement as none was readily available. The primary data collection stage of the study was facilitated by a resident gate-keeper/key informant who guided the researcher around to see the settlement. Secondly, the researcher visited locations like the Ogua-edion (elders' sanctuary), shrines, sacred groves and unauthorised dump sites

(Figure 3). This visit includes the names and different locations of worship centres in the settlement. *Stage 2* involved interviews with 3 key informants who have insights of happenings within and outside the community (Marshall, 1996) who have lived in the settlement for more than ten years (Kyle and Chick, 2007). Questions revolved around social mechanism of waste-disposal patterns and related attitudes in connection with waste generation and management. In selecting the key informants, the study used the purposeful sampling technique to select them based on the recommendations of community members - the second-person phenomenological interview method as elaborated upon by Olivaires *et al.* (2015) to interview the key informants. The study undertook direct observation through participation in ceremonies such as marriages, burials and church programmes at households and community platforms while maintaining the status of observer-as-participant (Marshall, 1996). In *Stage 3*, the researcher conducted interviews with twenty focus group discussants who provided insight into the impassivity of the waste phenomenon in the settlement and beyond.

2.2. Data analysis

The study used Colaizzi (1978) phenomenological study in analysing participants transcripts. This method is subdivided into five steps:

- Read and re-read each transcript to have a general picture about the unfolding episode through bracketing of ideas, thoughts and feelings.
- For each transcript, the significant statements that concern resident apathy and opportunities stem impassivity is emphasised and thereby derive meaning units from the statements.
- Cluster the meaning units into themes and categories.
- Place findings of the study into an exhaustive description of the phenomenon of apathy and opportunities.
- Describe the fundamental structure of the phenomenon and approach the participants a second time to validate the researcher's descriptive results with their experiences.

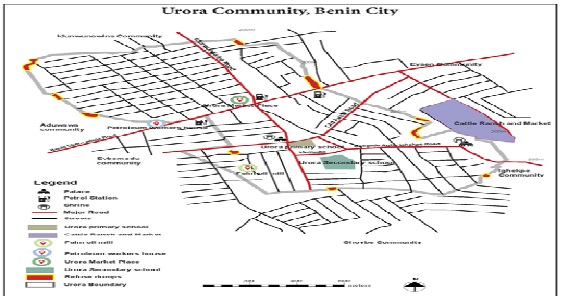

Figure 3. Urora community and urban feature. Source: Author field survey, 2016

Table 4. Statement of significance and formulated meaning

Significant Statements	Meaning Unit
Question: Describe your experience or encounter with living together in the community, as to roles and responsibilities with solid waste disposal/management process from generation at home to disposal at the public open space? **Response:** In my house we have division of labour and responsibilities; males and females perform separate functions so also with the age of members of the family. For waste matters, my wife and children undertake that responsibility especially when the waste in the house are from the kitchen. Females take care of the homes while my children depending on their age assist my wife in doing the house chores. They gather the waste in and around the house as they take turn on weekly basis. This arrangement does not include those serving punishment for which they could be punish through the clearing waste for the period the punishment would last. This practice is passed down the generation and so become institutionalised. Wastes emit petrifying odours, particularly where they are organic and exposed to serious weather conditions such as extreme heat and wet seasons. After collection, we use the bucket or the wheelbarrow depending on the quantity to convey the waste to the moat. **Question:** How regular is the solid waste generated and disposed of from your household? **Response:** After we gather the waste in a disused container for about three days, they are transported in a wheelbarrow to the nearest dumpsite, others with backyard waste dumps avail themselves on daily basis as the remainder makes use of the push-cart vendors **Question:** Why would residents be disinterested with waste products? **Response:** To us, solid wastes are useless, condemned, and discarded dirty rubbish, and why would anyone want to be associated with it. In the local language, the '*Ihuen*' '*Iku*' – these are derogatory terms that no one wants to be associated. Besides, wastes breed disease-carrying vectors such as flies, rodents, cockroaches that contaminate food and cause diseases.	**Home division of labour based on age and gender consideration**

3. Results and discussion

Given that the study undertook a combination of ethnographic and phenomenological studies, three broad themes/results are discernible-

- Residents apathy towards waste management is rooted in social and cultural norms which residents have been accustomed.
- Certain waste products have value and can form the basis of income-generating opportunities for households, if oriented towards that goal. However, given the stigma attached to anyone or anything associated with solid wastes in the community, considerable doubts remain whether such initiative will attract anyone from the community.
- To achieve continued success in the settlement and elsewhere there must be a stakeholders' dialogue between all stakeholders, including religious and community leaders, residents, governments, waste managers and prospective private sector investors.

Urora residents associates wastes with stigmas see the presence of waste and connotations regarding waste as a taboo and to avoid its occurrence. An average household in the locality has an internal division of labour along the lines of gender and age considerations (see Table 4) - this position further alienates most of the residents from participating in the waste management or disposal service as it is considered menial tasks to be left to the children. Further, the stigmas associated with waste and wastes handlers also exacerbate solid wastes problems in Urora. These findings corroborate those of Medina (2000) and Fahmi (2006) found for Asia and Latin America respectively that the stigmas attached to solid wastes are a major hindrance to sustainable solid wastes management.

The sense of community is instructive in its emphasis that the community as an entity endures while individuals come and exit the community. The implication being the importance of embedding sustainable wastes management into communities in terms of norms and values so that those who come in or exit the community buy into the value or take the value with them where ever they go. This encourages both the present and future generations of residents to imbibe community values, which comes to them as a way of life. This will persist irrespective of their ethnic and religious colourations. The absence of waste repositories is a huge constraint on sustainable wastes management, forcing residents to dispose their waste openly on uninhabited lands, road junctions, burrow pits and moats. Given the vagaries of the weather between wet and dry seasons, improper or indiscriminate disposal of solid wastes poses huge environmental hazards to the Urora community. A common feature of indiscriminate solid wastes disposal in Urora is the proliferation of the non-degradable wastes such as plastics, which the community could seize upon to make paving slabs (Kumilarbi *et al.*, 2018).

A significant source of opportunity yet to be tapped is the waste from the herds of cattle at the cattle ranch/market. This category of waste continues to pose prob-

lems for the community given the free-range of the heads and the damage to farmlands and gardens in the process and the droppings spread indiscriminately to create environmental nuisance of smell and unsightliness. However, with appropriate technology and know-how, the droppings from the cattle can be used for composting to increase the yield of agricultural produce. Aside, these organic wastes are a ready source of renewable energy for cooking. Indeed, studies by Rao *et al.,* (2010) and Cuellar and Webber (2008) have ascertained this type of wastes can be processed through anaerobic digestion into methane gas suitable for cooking.

Also evident from the results is the current rudimentary practice of using push-cart vendors for waste collection from households and those that scavenge for indiscriminately disposed waste products of intrinsic value for resale, indicating huge scope for a circular economy. However, such subsistence approach to solid waste management has proved unsustainable owing to the increasing rate of solid wastes generation. This is corroborated by the huge amounts of solid wastes left unattended and burnt openly with huge pollution effects. Evident from the fieldwork is the presence of various ethnic nationalities in Nigeria reside in the community, including the *Benins,* the *Esans*, the *Ibos,* the *Hausas*, the *Fulanis* and the *Urhobos* among others. These ethnic nationalities are of different religious backgrounds and they meet regularly to foster inter-communal unity and cooperation. This provides an effective platform for the community to strategise and formulate effective solid wastes policies that the community can take full ownership. Such a strategy could involve a community recycling depot, which will offer employment and income generating opportunities (Wilson, *et al.,* 2006)[5].

The community-scale solid waste management intervention is critical to sustainable waste management. Sensitising the community about the hazards posed by indiscriminate solid wastes disposal empowers people to protect their own and family's health. The community waste management strategy should focus more on wastes reduction, reuse, recycle, recover, and less on disposal.

4. Conclusion

The objectives of the study were to explore and understand the apathy towards responsible disposal of solid wastes in Urora community; to explore the scope for generating employment and income generating opportunities for the Urora community from sustainable solid wastes management and to explore the reasons behind the low solid wastes collection and processing in Urora and the role of culture in effecting sustainable solid wastes management.

These objectives have been fulfilled, the study shows that the apathy towards indiscriminate solid wastes disposal in Urora is as a result of lack of effective wastes management strategies, policies, and infrastructure. Above all, the stigma attached to solid wastes is a major deterrence to households associating with solid

wastes despite the employment and income generating opportunities in existence but not seized upon. What the study also shows is the pivotal role community and religious leaders have to play in reversing the stigma attached to solid wastes management in communities such as Urora.

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