

Domestic Solid Waste Pollution and its Impact on Estate Management Practice in Port Harcourt, Nigeria ¹

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Abstract

Domestic solid waste generation is synonymous with living and the pursuit of a better and improved quality of life by man. Similarly, urbanization is also geared towards improving man's quality of life however, when urbanization is unplanned, it gives rise to a series of problems thereby indirectly and negatively affecting man's quality of life. One of such problems stems from the poor management of the ever-increasing domestic solid waste generated by the ever-increasing human population. There is no gainsaying that poor management of domestic solid waste invariably leads to domestic solid waste pollution. Presently, domestic solid waste pollution is considered one of the major pollutions after those arising from black soot and oil exploration activities being experienced by Port Harcourt residents. It has also impacted on various businesses and economic activities. This paper employed the use of e-questionnaires to elicit data from 188 firms practicing Estate Management in Port Harcourt which was further subjected to analysis using one-sample t-test. It was found out that domestic solid waste pollution has an increasing adverse effect on the practice of Estate Management in the City. Recommendations were made in the light of encouraging efficient domestic solid waste management and bettering the lot of Estate Management practices. Areas of possible future research on this topic were also highlighted.

Keywords: Domestic Solid Waste Pollution, Estate Management Practices, Urbanization, Economic Activities, Quality of life

An Overview of Domestic Solid Waste Pollution in Port Harcourt

The definition of domestic solid waste as any substance such as food and drink packaging materials, clothing, paper, furniture, toys, ashes and other waste materials generated in the course of residential living and discarded into the environment because the holder no longer wishes to take responsibility for it will suffice for this paper. This definition is an encompassing one that hinges on definitions given by scholars on this concept in the past. Of particular significance is the definition given by Eionet, 2009 wherein domestic solid waste was defined to encompass wastes from households as well as other wastes, which by their composition, are similar to wastes

¹ How to cite this paper: Efekalam, I.C. (2021). Domestic Solid Waste Pollution and its Impact on Estate Management Practice in Port Harcourt, Nigeria; *PM World Journal*, Vol. X, Issue VIII, August.

from households. These wastes are generally regarded as garbage and rubbish originating from residential buildings.

When discarded into the environment, domestic solid waste could either go unnoticed with no striking impacts or noticeable with striking impacts. Domestic solid waste discharged into the environment usually goes unnoticed and of minimal impact in developed climates where adequate measures have been put in place for the collection, transportation, storage, recycling and ultimate discarding – this is regarded as an effective and efficient domestic solid waste management and is aimed at keeping our residential surroundings and by extension, the environment clean and safe from the harmful effects of domestic solid waste. It is perhaps against this backdrop that Gbekor, (2003) described domestic solid waste management as involving the processes of collection, storage, transportation and disposal of domestic solid waste.

Domestic solid waste management is therefore a network of coordinated activities geared towards protecting and safeguarding public health against waste-related hazards and risks. It further helps to maintain a balanced ecosystem through the intentional preservation of the natural environment and its resources and in so doing, preserving the aesthetics of the area. This is not the case in Port Harcourt where domestic solid waste has been known to cause various nuisance and impact adversely on the environment, peoples and businesses. The reason being that domestic solid waste is not efficiently and effectively managed hence has resulted to pollution. In a report on domestic solid waste situation in Lagos and Port Harcourt, Adelegan, (2004) stated that abysmal domestic solid waste problems abound in these cities where streets, open spaces and marketplaces are filled with domestic solid waste materials. It is a common sight in Port Harcourt to observe the indiscriminate accumulation of domestic solid waste in drains, roads, intersections, street corners and open spaces thereby reducing the quality of life and disrupting the operation of other businesses and public services. This according to Adelegan, (2004) describes domestic solid waste pollution.

Domestic solid waste pollution occurs when adequate and efficient processes are not in place for management of this waste. With increasing human population occasioned by urbanization, the quantum of domestic solid waste generated in a city is bound to increase. When increasing human population is not preceded by planned urbanization to cater for the needs of this increasing population which include efficient domestic solid waste management, there are bound to be various disconnect in the system one of which is domestic solid waste pollution. The rapid, unplanned and uncontrolled urbanization of cities in developing countries has given rise to a wide range of physical, environmental, social and economic problems. This is particularly challenging in Nigeria as these problems affect not just the State and its citizens but also the various businesses and means of livelihood of the people. One of such problems evident in Port Harcourt is domestic solid waste pollution.

An Insight into Estate Management Practices

Estate Management practice is varied and includes Landed Property Valuation and Investment Advising, Land Use Planning, Real Estate Management and Agency. It also covers such aspects as Feasibility and Viability Appraisals, Project Management, Land Development, Reform and Settlement, Facilities Management and offering of Land Policy Advisory Services (Hemuka, 2002).

Valuation and Investment Advising giving professional advice on the value of real property investment based on an Estate Surveyor and Valuers' determination of the monetary worth of the real property by forecasting all benefits accruable from the investment and then discounting or capitalizing appropriately.

In carrying out his Land Use Planning practice, an Estate Surveyor and Valuer is expected to facilitate the development of plans that are capable of realization as his expertise is essential in the preparation of planning and design briefs.

In carrying out the twin practice of Real Estate Agency and Management, an Estate Surveyor and Valuer is expected to carefully study and interpret the real estate market in order to be well equipped to sell, let/lease, acquire/purchase and generally manage interests in real property on behalf of his client. Facilities Management practice also require similar skills and knowledge.

The Feasibility and Viability Appraisal practice puts the Estate Surveyor and Valuer in a position where he not only determines the possibility of embarking on a proposed real estate investment and whether or not such an investment will be worthwhile, but he also studies real property market indicators and may be required to liaise with other professionals in order to give water-proof advice on real property development, redevelopment or investment.

In carrying out his practice of Project Management and Land Development, the Estate Surveyor and Valuer aims to bring about new real property developments in order to satisfy the accommodation needs of the people – this he does in conjunction with other professionals in the built industry. Likewise, in Land Reform and Settlement practice, the Estate Surveyor and Valuer acts as a middleman between government and the people to actualize land reform goals and resettlement plans.

Since real property development occurs on land, policy advice from the Estate Surveyor and Valuer is usually inevitable. The central resource here is land and buildings – this brings to core the relationship between Estate Management practice and domestic solid waste pollution. In the words of Akujuru (2003), the Estate Surveyor and Valuer practices his profession in the contemporary Nigerian society beset with multifaceted problems. He classified these problems into structural and societal problems. While the structural problems take root from the training of the Estate Surveyor and Valuer which is by no means comprehensive, the societal problems emanate from the fact that as part of the society, the activities of Estate Surveyors and Valuers are

influenced by the happenings in the society at large. The discussions in this paper center on the societal problems of domestic solid waste pollution. It is certain that issues that affect land and buildings also affect the practice of Estate Management as it is wholly based on land and buildings.

A Theoretical Review of the Effects of Domestic Solid Waste Pollution on Estate Management Practice

Over the years, scholars have carried out research on the effects of solid waste pollution on various aspects of the environment and human health. Kumar and Prakash, (2020) agreed that domestic solid waste pollution impacts mainly on land, air and water thereby questioning the very survival of human and animal life. They went further to assert that this pollution affects air quality thereby causing acute and chronic respiratory disorders and lung damage in humans in the same way it affects water quality leading to diseases such as malaria, diarrhea and cholera. The 2017 Global Climate Report has it that decomposing domestic solid waste creates harmful greenhouse gases leading to high temperatures, extreme weather conditions and global warming. Ifeoluwa (2019) went further to assert that solid waste pollution in Nigeria leads to significant and rapid environmental degradation making life unbearable for residents.

Estate Management practice is geared towards delivering quality services in order to achieve client satisfaction (Nwanekezie, Efekalam and Diala, 2016). The trio affirmed that a Firm's requirements of client satisfaction are the internally based processes, components, standards and criteria that a firm tries to achieve. The study found out that clients though not necessarily dissatisfied with the services of Estate Surveyors and Valuers were however limited in their choices by virtue of location particularly closeness to dumpsters.

Estate Management practice are affected by several factors such as income level of households (Efekalam, 2016), several contemporary input resources like machinery and equipment input resources, these input resources according to Agwu (2009) are by no means exhaustive as there are possibilities that other "unknown" factors could also affect Estate Management practice. Agwu (2009) foresaw the effect of some likely unknown factors on Estate Management practice perhaps, domestic solid waste pollution could be seen as one of those unknown factors considering the effects this is having on businesses, towns in particular and the country as a whole.

Gap in Literature

So much work has been done on the effects of solid waste pollution on the environment - water and air quality precisely – (Adelegan, 2004; Elionet, 2009; Gbekor, 2003). Several scholars have also looked at the effect of solid waste pollution on human health – (Kumar and Prakash, 2020). Agwu, (2012) considered the issues and challenges of solid waste management practice in Port Harcourt City, Nigeria. In his work, he tried to consider the various factors militating against efficient solid management.

In what appeared to be a drift, Oluyemi, Inah and Odunsi, (2017) revealed a link between increased domestic solid waste generation and poor management in increase in household income and size. This study tried to establish a linkage between poor domestic solid waste management which ultimately leads to pollution on the twin forces of urbanization and urbanization. This goes to support the submission of Efekalam and Diala (2017).

In view of the widespread pollution problems in the country especially those occasioned by domestic solid waste, Egbu and Okoroigwe (2014) carried out a study to examine the processes of informal collection of household solid waste in three towns of Anambra State, Nigeria. This study revealed the patronage of the informal sector, shabby involvement of the private sector and total failure of the public sector in solid waste collection and management.

However, none of the reviewed works has attempted to investigate the effects of domestic solid waste pollution on Estate Management practice. Since the practice of Estate Management is based on land, it is very likely that any act or thing that affects land, affects the practice just as everything that affects the practitioner (i.e the Estate Surveyor and Valuer) also affects the practice. It is on this premise that this paper provides a timely overview of the impact of domestic solid waste pollution on Estate Management practice in Port Harcourt. Herein lies the gap which this paper seeks to fill.

Methodology

This work investigated the effects of domestic solid waste pollution on Estate Management practice in Port Harcourt. It started by extensively reviewing literature on the effects of domestic solid waste pollution from where it was discovered that despite the existence of several works on solid waste pollution, none of those works sought to investigate the effects of domestic solid waste pollution on Estate Management Practice in general and in Port Harcourt specifically. Most reviewed literature laid emphasis on studying the effects of solid waste pollution on air quality, water quality and human health.

Relying on the advantages inherent in the use of mixed-methods research design which allows for combined quantitative and qualitative analytical methods in any given work, mixed-methods research design was adopted by the researcher. In doing this, an e-questionnaire was developed using the Google Form. After the usual reliability and viability test, the e-questionnaire was directly administered to all 188 practicing Estate Management firms in Port Harcourt. Thus the population of study equals the sample frame.

Using the snowballing technique, the e-questionnaire were sent through social media mainly Whatsapp and email to respondents. Returned questionnaire numbered 162 representing about 86% return rate. This questionnaire return rate is considered adequate and representative as it surpassed the 65% rate which is generally considered valid. The e-questionnaires distributed to respondents contained questions to elucidate if actually domestic solid waste pollution has effects on Estate Management practices in similar ways as it does on the environment and health as

revealed by literature review. Data generated were further analyzed using One-Sample T-test at a 0.05 confidence level. The results of the analysis backed up with literature review informed the outcome from this study and conclusions thereof.

Data Analysis and Results

Three hypotheses were formulated flowing from the aim and objectives of this study. They are:

H₀₁ – There exist no significant relationship between Estate Management practice and domestic solid waste pollution in Port Harcourt

H₀₂ – Domestic solid waste pollution is known to impact only on health and the environment

H₀₃ – Domestic solid waste pollution impacts only on undeveloped land hence does not affect developed land

The table below shows the results obtained from testing these hypotheses for acceptance or rejection using the One Sample T-test at a 0.05 confidence level:

Table 1 – One-Sample T-test

	Test Value = 0					
					0.05 confidence level	
	t	Df	Sig.(2-tailed)	mean difference	Lower	Upper
H ₀₁	93.149	162	.000	4.23827	4.1487	4.3278
H ₀₂	96.960	162	.000	4.19134	4.1062	4.2764
H ₀₃	78.929	162	.000	4.12996	4.0270	4.2330

Source: SPSS, Version 22

Inferring from the table above, all three null hypotheses were rejected thus giving room for accepting their corresponding alternate hypothesis. Consequently, it is correct to say that a significant relationship exists between Estate Management practice and domestic solid waste pollution (t=93.149; p<0.05) as such domestic solid waste pollution does not impact only on the environment and health (t=96.960; p<0.05) but impacts on developed land just as it impacts on undeveloped land (t=78.929; p<0.05).

Discussion of Results

In rejecting the null hypothesis that there exists no significant relationship between Estate Management practice and solid waste pollution in Port Harcourt, we accept the fact that there is indeed a significant relationship between Estate Management practice and domestic solid waste pollution. This relationship, though an inverse one, is evident in the problems associated with carrying on Estate Management practice in areas where domestic solid waste pollution is high. Such problems include the fact that business is slow as time taken to conclude a deal is usually longer than expected. This takes root from the fact that domestic solid waste pollution causes a fall in the value of real property thereby making the owner reluctant to sell, lease or let out at the crashed values. The proposed buyer, lessee or tenant is also reluctant to proceed with the transaction despite the lower value as it is perceived as tying down capital unnecessarily.

This study revealed that domestic solid waste pollution does not impact only on health and the environment but also on businesses, in this case, Estate Management practice. As such the second null hypothesis was rejected in favour of its alternate hypothesis. One may argue that the impact of domestic solid waste pollution on Estate Management practice is hinged on its impact on land as a resource. This argument is not far from the truth and will be further appreciated in the context of this study since land is the basic and perhaps only resource upon which Estate Management practice is founded.

The generally accepted definition of land to include the solid earth crust and everything permanently fixed to it gives credence to the rejection of the third hypothesis and acceptance of its alternate hypothesis thereby confirming that domestic solid waste pollution impacts also on developed land. All classes of buildings and development on land including open spaces and green areas can be negatively affected by domestic solid waste pollution to very large extents. Consider a situation where an open space or park is indiscriminately converted to domestic solid waste collection centre. Consider the effect of domestic solid waste being dumped in drains, markets, roads and street corners. These ultimately impact on real property developments, their owners and managers.

Conclusion

But for studies and research, it would have been considered false or misleading to link domestic solid waste pollution to Estate Management practice and other human endeavors. This study has interestingly proved that domestic solid waste pollution indeed has a significant negative impact on Estate Management practice principally because it impacts greatly on the very resource (land) upon which Estate Management practice is founded.

Efekalam and Diala (2017) asserted that though urbanization is generally associated with higher income and productivity and a major driver of productivity and growth, this can only be achieved with strict implementation of planned urbanization policies. It is perhaps against this backdrop that Okpala (2003) opined that in many countries of the world, particularly in sub-Saharan Africa,

urbanization did not bring the promised productivity increases and rising standards of living. It was rather accompanied by slum development in all its shades.

It is therefore put forward that in planning new cities, expanding existing cities and creating new settlements, efforts should be geared towards making adequate provisions for efficient domestic solid waste pollution. Once this provision is overlooked and missed out at the early stages, there are bound to be problems of domestic solid waste pollution which affects not just human health and the environment but also human endeavors, in this case, Estate Management practice.

Recommendations

Domestic solid waste pollution does no one any good. The responsibility for domestic solid waste collection and management in Port Harcourt rests on the government through its agency. Though some efforts are being made in this regard, the efforts seem to be unfelt. The problems of domestic solid waste pollution in Port Harcourt is caused by the seemingly over-population of the city following unplanned urbanization. It is based on the foregoing that this study recommends as follows:

1. There is need to scale up the current approach to domestic solid waste management by embracing a more robust and integrated approach which incorporates holistic participation through the process of promotion of good practices where all stakeholders form part of the waste collection and management cycle.
2. Government on its part has to truly and fully commit itself to domestic solid waste collection and management by improving financial allocation, waste management facilities, equipment and personnel while providing them with required legal support to enforce regulations on waste disposal and management.
3. In order to progressively overcome the problems associated with domestic solid waste pollution in Port Harcourt, there is need to draw up and implement a domestic solid waste management plan in line with global best practices. This is expected to spell out and work towards the realization of targets for waste collection, recycling and management.

Suggestions for further Studies

This study examined the impact of domestic solid waste pollution on Estate Management practice in Port Harcourt. However, based on findings of this study and certain factors that affected the study, new areas of study were thrown up. These areas include studies based on larger study areas where data collected from larger samples will be used to increase the precision of the analytical results and conclusion. Furthermore, Estate Management as described above has several practices wherein a practitioner can engage in. With the new trend in specialization in different skills, there is need for studies to look into the impact of domestic solid waste pollution on the various practices such as Property Management and Agency.

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