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Page: 410 - 416

A REVIEW OF ECONOMIC IMPLICATIONS OF WASTE MANAGEMENT PRACTICES IN UGANDA

Ogwal Emmanuel
College Of Economic and Management (MEPP), Kampala International University, Uganda
Email Address: emmanuel.ogwal@studmc.kiu.ac.ug /ogwalemmablessed@gmail.com
ORCID iD: https://orcid.org/0009-0003-3274-5277
Phone No: +256 777 366 181

Abstract

This review investigated the economic dimensions of waste management in urban areas, with a focus on Uganda. Urbanization and population growth in Uganda have led to increased waste generation, presenting economic challenges. This review aimed to comprehensively evaluate the economic costs and benefits associated with waste management practices, ultimately contributing to sustainable urban development. The review was based on the Environmental Kuznets Curve (EKC) theory, which posits that environmental degradation initially rises with economic development but declines as societies adopt eco-friendly practices, environmental deterioration decreases after initially increasing with economic progress. Concepts from urban and environmental economics guided the review's examination in an urban setting. Concepts from environmental and urban economics guided the review's study in an urban setting. Both quantitative and qualitative data were examined. As used in several earlier studies, the desktop research approach is used in this work to gather and analyse pertinent data from the body of current literature. The results showed that Uganda's ineffective waste management has serious financial repercussions, such as increased medical expenses, environmental damage, and lost recycling chances. Sustainable waste management options, on the other hand, demonstrated possible financial advantages that might support the expansion of the city's economy. Modernising waste management infrastructure, encouraging recycling and waste reduction programs, putting policies in place for sustainable waste management, increasing public awareness, and conducting ongoing research to track economic effects and guide policy changes were among the study's recommendations. To sum up, this review article helps inform policy decisions for sustainable urban development by offering insightful information about the economic elements of garbage management in Uganda.

Keywords: Waste Management, Recycling, Economics, Uganda

Introduction

Chaudhary, A., Chen, C., and Mathys, A. (2020). Global food waste includes both environmental and nutritional losses. Canxi Chen, Abhishek Chaudhary, and Alexander Mathys' essay "Nutritional and environmental losses embedded in global food waste" (2020) attempts to evaluate how food waste affects a number of sustainable development goals (SDGs). The paper by Chen, C., Chaudhary, A., & Mathys, A. (2020) evaluates the impact of food waste towards several sustainable development goals (SDGs) and significantly advances our knowledge of the nutritional and environmental losses inherent in global food waste.

According to the study, 1.13 million tonnes of edible food products are wasted daily worldwide, with an average of 178 g of food waste per person per day (or 65 kg annually). The amount of garbage varies greatly each nation. An average of 307 g per capita per day is projected to be wasted in high-income countries, about twice as much as in upper-middle-income countries (163 g), and four to six times as much as in low-middle-income (81 g) and low-income (43 g) countries. In some high-income nations, such as the US, Australia, New Zealand, and Ireland, food waste even surpasses 500 g per person per day.
According to their data, China ranks 46 out of 151 countries with a daily food waste per capita of about 276 g. Brazil and India are estimated to have 133 g and 40 g per inhabitant per day, respectively. As a result, it suggested that patients, pharmaceutical firms, and legislative authorities work together immediately to address this issue.

Kigho Moses Oghenejoboha et al. (2021): "Value added cassava waste management and environmental sustainability in Nigeria. The article “effective management of cassava solid and liquid wastes, Nigeria” by Kigho Moses Oghenejoboha,* , Henry Oghenero Orugbaa , Ufuoma Modupe Oghenejobohb , Samuel Enahoro Agarryc (2021) aims to evaluate effective management of cassava solid and liquid wastes in Nigeria. They define waste as anything produced that comprises of actions that identify materials as no longer useful, leading to their disposal either through discarding or collection for proper disposal.

Kigho Moses Oghenejoboha et al.'s article from 2021 also significantly advances our knowledge of how to conduct research on the efficient management of cassava solid and liquid wastes in developing cities, which facilitates generalisation and transfer to other contexts. It was noted that properly managed cassava waste can support a sustainable environment by using MFC technology to generate electricity to power low voltage laboratory equipment and by bio-remediating wastewater by lowering COD, BOD, and other harmful organic materials before it is safely dumped into soil or water bodies.
It suggested that the Nigerian government and pertinent parties increase their research and development (R&D) expenditures in the field of cassava waste management and entice investors to enter the market.

"Environmental Sustainability Impacts of Solid Waste Management Practices in the Global South" by Ismaila Rimi Abubakar et al. (2022). Ismaila Rimi Abubakar 1,*, Khandoker M. Maniruzzaman 2, Umar Lawal Dano 2, Faez S. AlShihri 2, Maher S. AlShammari 2, Sayed Mohammed S. Ahmed 2, Wadee Ahmed Ghanem Al-Gehlani 3, and Tareq I. Alrawaf 4 evaluate the effects of solid waste management (SWM) practices on human and environmental health in the Global South in their article "Environmental Sustainability Impacts of Solid Waste" (2022).

Ismaila Rimi Abubakar et al.'s article from 2022 made a significant contribution to our knowledge of how research on the effects of solid waste on environmental sustainability might be conducted. It was discovered that common SWM practices include combining hazardous waste with household and commercial garbage during handling and storage, storing waste primarily in outdated or poorly maintained facilities like storage containers, having an inadequate and unofficial transportation system, and disposing of waste primarily through uncontrolled dumping, open-air incinerators, and landfills. In order to reduce the risks to public and environmental health posed by the current SWM practices in the Global South, the study did not examine how the unique characteristics of each Global South nation can affect the choice of the SWM approach, components, aspects, technology, and institutional/legal frameworks suitable for each locality.

"Awareness and Practice of Medical Waste Management among Healthcare Providers in National Referral Hospital" was published by Zimba Letho et al. in 2021. The article by Zimba Letho1 *, Tshering YangdonID2, Chhimi Lhamo3, Chandra Bdr Limbu3, Sonam Yoezer3, Thinley Jamtsho3, Puja Chhetri3, and Dawa Tshering3 titled "Awareness and practice of medical waste management among healthcare providers in National Referral Hospital" (2021).

Its objective is to evaluate healthcare providers' knowledge and application of medical waste management at National Referral Hospital. The article by Zimba Letho et al. (2021) significantly advances our knowledge of how research can be conducted to evaluate the medical waste management awareness and practice among the National Referral Hospital's support staff and healthcare providers, as well as its adherence to current national guidelines and policies.

Because medical waste management among healthcare workers is frequently limited by inadequate sensitisation and improper implementation of the existing National guidelines at the study site, it was discovered that half of the hospital wastes are not being transported correctly based on the correct segregation process. The study suggested that healthcare professionals and support staff receive frequent training in order to ensure prompt and efficient monitoring. Additionally, improving National Referral Hospital's waste management system would have a positive effect on patient safety protocols.

"COVID-19 Pandemic and Healthcare Solid Waste Management Strategy – A Mini-Review" by Atanu Kumar Das et al. (2021). Evaluation of the COVID-19 Pandemic and Healthcare Solid

Waste Management Strategy is the goal of the paper "COVID-19 Pandemic and Healthcare Solid Waste Management Strategy – A mini-review" by Atanu Kumar Das a, ∗, Md. Nazrul Islam b, Md. Morsaline Billah c, and Asim Sarker d. (2021).

While discussing the various healthcare solid waste management strategies used in various countries, the difficulties encountered during this management, and potential solutions for overcoming these difficulties, the article by Atanu Kumar Das et al. (2021) makes a significant contribution to our understanding of the COVID-19 Pandemic and Healthcare Solid Waste Management Strategy. It discovered that the high prevalence of infection with the new COVID-19 virus is causing a huge increase in the amount of healthcare waste.
In order to accommodate excess healthcare waste, it also noted that disinfecting trash, followed by appropriate segregation and on-site treatment, mobile treatment, and temporary storage options, may help manage healthcare waste sustainably without spreading the virus further. Additionally, effective waste management in the healthcare industry can aid in recycling garbage or turning it into useful items like electricity.
In order to help stop the COVID-19 virus from spreading, the study suggested appropriate healthcare waste management if national economies were to be enhanced for sustainable development.
"Implementation of Circular Economy Principles in Industrial Solid Waste Management: Case Studies from a Developing Economy (Nigeria)" by Obiora B. Ezeudu and Tochukwu S. Ezeudu (2019). Obiora B. Ezeudu 1, * and Tochukwu S. Ezeudu 2.'s article "Implementation of Circular Economy Principles in Industrial Solid Waste Management: Case Studies from a Developing Economy (Nigeria)" (2019) attempts to evaluate the application of these principles in industrial solid waste management.
By analysing the opportunities and difficulties of applying the circularity principle at the industrial sector level of a typical developing economy, the paper by Obiora B. Ezeudu and Tochukwu S. Ezeudu (2019) significantly advances our understanding of the Implementation of Circular Economy Principles in Industrial Solid Waste Management. It was discovered that there are unofficial waste-picking operations in all industries. Concluding that recycling e-waste in a safe, well-organised, and effective manner has the potential to be a significant business endeavour. Therefore, in order to accomplish this goal, the current industrial solid waste management system needs to be redesigned. In developing nations, the importance of informal waste recycling activities has been recognised as a crucial part of the CE waste valorisation system.

"Expired Medication: Societal, Regulatory, and Ethical Aspects of a Wasted Opportunity" by Faez Alnahas et al. (2020). Implementation of Expired Medication: Societal, Regulatory, and Ethical Aspects of a Wasted Opportunity is evaluated in the article "Expired Medication:

Societal, Regulatory, and Ethical Aspects of a Wasted Opportunity" by Faez Alnahas 1, Prince Yeboah 1, Louise Fliedel 2, Ahmad Yaman Abdin 1, and Khair Alhareth 2,* (2020). While evaluating procedures linked to the disposal of unneeded pharmaceuticals, the paper by Faez Alnahas et al. (2020) significantly advances our knowledge of Expired Medication: Societal, Regulatory, and Ethical Aspects of a Wasted Opportunity. It was discovered that the overproduction, overprescription, and overconsumption of pharmaceuticals have resulted in a large number of expired medications, which have numerous negative effects, particularly on the environment, in the lack of specific laws governing the disposal of expired medications. As a result, it suggested that patients, pharmaceutical companies, and legislative authorities work together urgently to address this issue.

Municipality solid waste management system for Uganda's Mukono District (Abdulfatah et al., 2019). Abdulfatah Abdu Yusufa, Onu Peter, Abdurrahaman S. Hassanb, Lawal A. Tunjic, Ismail A. Oyagbolac, Mundu M. Mustafad, and Danjuma A. Yusufe's article "Municipality solid waste management system for Mukono District, Uganda" (2019) attempts to assess and analyse the current solid waste management in Mukono Municipality and create a suitable system that is both scalable in developing cities worldwide and adaptable in Mukono. Waste, according to their definition, is everything created that includes processes that determine materials are no longer valuable and result in their disposal, either by collection for appropriate disposal or by discarding. A few instances of this type of trash are Abdulfatah et al. (2019).

According to the authors, if these techniques are successfully implemented, they could support different stakeholders' healthy lives that align with the MDG. Abdulfatah and associates (2019). Therefore, the findings will be easy to generalise and transfer to other areas. The article by Abdulfatah et al. (2019) makes a significant contribution to our understanding of how research can be done in areas where evaluation and analysis of the existing solid waste management is greatly required, especially the emerging cities. It is imperative to make sure that this research gap is filled because the study did not specify the theoretical viewpoint that served as its foundation.

Theoretical framework

The review was predicated on the Environmental Kuznets Curve (EKC) theory, which holds that as civilisations embrace eco-friendly practices, environmental deterioration decreases after initially increasing with economic progress. Concepts from environmental and urban economics guided the review's study in an urban setting.

The studies mentioned above, keeping this framework in mind, give readers a methodical approach to the research question and have developed a logical and coherent structure that begins with the definition of the problem and its goals and objectives and concludes with a

discussion, conclusion, and recommendations based on the research findings without mentioning any limitations. Finally, the studies suggest some areas for future research.

The limitations analysis may be extended to include some suggestions for further development, such as investing in suitable waste management systems, even if the authors critically analyse their findings at the end of the publication.

First off, despite the fact that the articles make extensive use of evaluation and analysis of the current solid waste management system, the authors do not go into detail about the economic costs of the solid waste management practices that could help prevent the solid waste management problems in each jurisdiction, which is relevant to the Ugandan context. This could provide readers with a better grasp of the amount to which Uganda's waste management policies are impacting the country's economy, necessitating the hunt for innovative approaches to further the field's study.

Without delving into the specifics of whether land, financial resources, or other resources are most needed, the researcher, for instance, merely generalised the issue of waste management in Mukono Municipal Council to a shortage of resources. Second, most authors' research processes are insufficient when they solely employ quantitative methods because they fail to account for information that cannot be quantified, such as sex, gender, etc., which is crucial for data collection but can significantly influence fundamental decision-making for different interest groups. Although I strongly agree with the Mukono Municipal Council study's recommendation to employ suitable technology in solid waste management, its vagueness makes it ineffective in addressing the current problem. Thirdly, the author only suggested using the two R's (reduce and recycle) for waste management, ignoring the third R, reuse, which is essential for waste reduction and lowering costs associated with the economy, health, and environment, among other factors.

Giving the suggestion a biassed appearance Furthermore, the satisfaction of the much broader policy implementers may be limited if new policy makers limit the scope of decision-making to only include the Reduce and Recycle techniques of waste management because they may prefer the other waste management strategy, "Reuse." It's also important to keep in mind that, despite the fact that the study was only completed in 2019, the researcher used a relatively outdated demography from the 1990s, which roughly corresponded to an average annual waste generation of 200 kilogrammes. This makes the amount of waste generated absolute because, according to recent findings, it is 2.24 billion tonnes of solid waste per day, or roughly 0.79 kilogrammes per person per day. Additionally, due to high rates of urbanisation and population growth, waste production is expected to increase by a significant 73% from 2020 levels to a staggering 3.88 billion tonnes by 2050.

This increase in garbage production calls for immediate action since it poses a serious obstacle to sustainable waste management. Solid Waste Management, World Bank, 2019. Therefore, if the writers focus on updating waste management infrastructure, encouraging recycling and waste reduction programs, putting policies in place for sustainable waste management, increasing public awareness, and conducting ongoing research to track economic effects and guide policy changes, the articles could be even better. Notwithstanding the limits of the previously discussed research, the paper contributes significantly to the study of the municipal solid waste management system, which can be utilised by various stakeholders for both practical application and future research.

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