

[Home](#) > [Journal](#) > [Earth & Environmental Sciences](#) > [JEP](#)
[Indexing](#) | [View Papers](#) | [Aims & Scope](#) | [Editorial Board](#) | [Guideline](#) | [Article Processing Charges](#)
[JEP](#) > Vol. 3 No. 7, July 2012



A Situational Assessment of Socioeconomic Factors Affecting Solid Waste Generation and Composition in Freetown, Sierra Leone

PDF (Size: 340KB) PP. 563-568 DOI : 10.4236/jep.2012.37067

Author(s)

Foday Pinka Sankoh, Xiangbin Yan, Alhaji Mohamed Hamza Conteh

ABSTRACT

The generation of solid waste has become an increasing environmental and public health problem, especially in developing countries. These problems associated with the generation of solid waste are part of social changes where households play an important role. Invariably, these social changes influence the size, structure and characteristics of given households. This paper presents the findings of a study carried out in Freetown municipal area in Sierra Leone to assess socioeconomic factors affecting household solid waste generation and composition in Freetown, Sierra Leone. Structured questionnaires were administered with respect to these socioeconomic factors in four (4) selected constituencies of the city. These are the most populated constituencies that generated 70% of the total quantity of solid waste in the city. Therefore, they are suitable samples of the study area. The rate of waste generation was determined by using door- to-door approach in five (5) selected households from each constituency through sorting and weighing of solid wastes respectively. The dependent variables were solid waste generation and composition, and the independent variables were family size, education, income levels among others. The data obtained were subjected to statistical analysis to determine relationships between independent variables and dependent variables through correlation. The results showed that the solid waste generation and composition in Freetown was significantly affected by average family size, employment status, monthly income, and number of room(s) occupied by households. In general, the paper adequately suggests new insights concerning the role of socioeconomic factors in affecting the generation and composition of household solid waste.

KEYWORDS

Socioeconomic Factors; Solid Waste Generation; Freetown; Family Size

Cite this paper

F. Pinka Sankoh, X. Yan and A. Mohamed Hamza Conteh, "A Situational Assessment of Socioeconomic Factors Affecting Solid Waste Generation and Composition in Freetown, Sierra Leone," *Journal of Environmental Protection*, Vol. 3 No. 7, 2012, pp. 563-568. doi: 10.4236/jep.2012.37067.

References

- [1] Population and Housing Census results, 2004. <http://www.statistics.sl/>
- [2] M. B. Gleave, " Port Activities and the Special Structure of Cities: The East of Freetown," *Journal of Transport Geography*, Vol.5, No. 4, 1997, pp. 257-275.
- [3] W. Wang and Y. Wu, " Succession of Contemporary City Waste Policy and Necessity of Greeting the Waste Industry," *Ecological Economy*, Vol. 10, 2001, pp. 34-37.
- [4] O. Buenrostro and G. Bocco, " Solid Waste Management in Municipalities. In Mexco: Goals and Perspectives," *Resources, Conservation and Recycling*, Vol. 39, No. 3, 2003, pp. 251-263. doi:10.1016/S0921-3449(03)00031-4
- [5] D. Pokhrel and T. Viraraghan, " Municipal Solid Waste Management in Nepal: Practices and Challenges," *Waste Management*, Vol. 25, No. 5, 2005, pp. 555-562. doi:10.1016/j.wasman.2005.01.020

- [Open Special Issues](#)
- [Published Special Issues](#)
- [Special Issues Guideline](#)

[JEP Subscription](#)
[Most popular papers in JEP](#)
[About JEP News](#)
[Frequently Asked Questions](#)
[Recommend to Peers](#)
[Recommend to Library](#)
[Contact Us](#)

Downloads:	301,518
Visits:	674,049

[Sponsors, Associates, and Links >>](#)

- [The International Conference on Pollution and Treatment Technology \(PTT 2013\)](#)

- [6] T. B. Yousuf, and M. Rahman, "Monitoring Quantity and Characteristics of Municipal Solid Waste in Dhaka City," *Environmental Monitoring Assessment*, Vol. 135, No. 1-3, 2007, pp. 3-11. doi:10.1007/s10661-007-9710-6
- [7] S. J. Burnley, "A Review of Municipal Solid Waste Composition in the United Kingdom," *Waste Management*, Vol. 27, No. 10, 2007, pp. 1274-1285. doi:10.1016/j.wasman.2006.06.018
- [8] S. S. Nas, and A. Bayram, "Municipal Solid Waste Characteristics and Management in Gumushane, Turkey," *Waste Management*, Vol. 28, No. 12, 2008, pp. 2435-2442. doi:10.1016/j.wasman.2007.09.039
- [9] F. Philippe and M. Culot, "Household Solid Waste Generation and Characteristics in Cape Haitian City, Republic of Haiti," *Resources, Conservation and Recycling*, Vol. 54, No. 2, 2009, pp. 73-78. doi:10.1016/j.resconrec.2009.06.009
- [10] X. Qu, et al., "Survey of Composition and Generation Rate of Household Waste in Beijing, China," *Waste Management*, Vol. 29, No. 10, 2009, pp. 2618-2624.
- [11] N. P. Thanh., Y. Matsui and T. Fujiwara, "Household Solid Waste Generation and Characteristics in a Mekong Delta City Vietnam," *Journal of Environmental Management*, Vol. 91, No. 11, 2010, pp. 2307-2321. doi:10.1016/j.jenvman.2010.06.016
- [12] I. A. Al-Khatib, et al., "Solid Waste Characterization, Quantification and Management Practices in Developing Countries. A Case Study: Nablus District—Palestine," *Journal of Environmental Management*, Vol. 91, No. 5, 2010, pp. 1131-1138. doi:10.1016/j.jenvman.2010.01.003
- [13] A. Rafia, H. Keisuke and T. Rabbah, "The Role of Socioeconomic Factors on Household Waste Generation: A Study in a Waste Management Program in Dhaka City, Bangladesh," *Research Journal of Applied Sciences*, Vol. 5, No. 3, 2010, pp. 183-190.
- [14] F. F. Hudson and H. M. David, "Solid Waste Generation and Services Quality," *Journal of Environmental Engineering*, Vol. 103, No. 2, 1997, pp. 935-946.
- [15] M. Sujauddin, S. M. S. Huda and A. T. M. Rafiqul Hoque, "Household Solid Waste Characteristics and Management in Chittagong, Bangladesh," *Waste Management*, Vol. 28, No. 9, 2008, pp. 1688-1695. doi:10.1016/j.wasman.2007.06.013
- [16] M. O. Saeed, M. N. Hassan and M. A. Mujeebu, "Assessment of Municipal Solid Waste Generation and Recyclable Materials Potential in Kuala Lumpur, Malaysia," *Waste Management*, Vol. 29, No. 7, 2009, pp. 2209-2213. doi:10.1016/j.wasman.2009.02.017
- [17] G. Tchobanoglous, H. Theisen and S. Vigil, "Integrated Solid Waste Management," McGraw-Hill, New York, 1993.
- [18] P. A. Vesilind, W. Worrel and D. Reinhart, "Solid Waste Engineering," Books/Cole Thomson Learning, Pacific Grove, 2002.
- [19] S. Ojeda-Benitez, C. A. Vega and M. Y. Marquez-Montenegro, "Household Solid Waste Characterization by Family Socioeconomic Profile as Unit of Analysis," *Resources, Conservation and Recycling*, Vol. 52, No. 7, 2008, pp. 992-999. doi:10.1016/j.resconrec.2008.03.004
- [20] M. Y. Marquez, S. Ojeda and H. Hidalgo, "Identification of Behavior Patterns in Household Solid Waste Generation in Mexicali's City: Study Case," *Resources, conservation and Recycling*, Vol. 52, No. 11, 2008, pp. 1299-1306.
- [21] N. J. Bandara, J. P. Httiaratchi, S. C. Wirasingbe and S. Pilapiiya, "Relation of Waste Generation and Composition to Socioeconomic Factors: A Case Study," *Environmental Monitoring and Assessment*, Vol. 135, No. 1-3, 2007, pp. 31-39. doi:10.1007/s10661-007-9705-3
- [22] K. L. Wertz, "Economic Factors Influencing Household's Production of Refuse," *Journal of Environmental Management and Economics*, Vol. 2, No. 4, 1976, pp. 263-272. doi:10.1016/S0095-0696(76)80004-6
- [23] A. H. Al-momani, "Solid Waste Management: Sampling, Analysis and Assessment of Household Waste in the City of Amman," *International Journal of Environmental Health Research*, Vol. 4, No. 4, 1994, pp. 208-222. doi:10.1080/09603129409356820
- [24] D. Grossmann, J. F. Hudson and D. H. Marks, "Waste Generation Models for Solid Waste Collection," *Journal of the Environmental Engineering Division*, Vol. 100, 1974, pp. 1219-1230.

- [25] R. A. Richardson and J. Havlicek Jr., " Economic Analysis of Composition of Household Solid Wastes," *Journal of Environmental Economics and Management*, Vol. 5, No. 1, 1978, pp. 103-111. doi:10.1016/0095-0696(78)90007-4
- [26] M. Medina, " The Effect of Income on Municipal Solid Waste Generation Rates for Countries of Varying Levels of Economic Development: A Model," *Journal of Resource Management and Technology*, Vol. 24, No. 1, 1997, pp. 149-155.
- [27] A. Bruvoll, " Factors Influencing a Solid Waste Generation and Management," *Journal of Solid Waste Technology and Management*, Vol. 27, 2001, pp. 156-162.