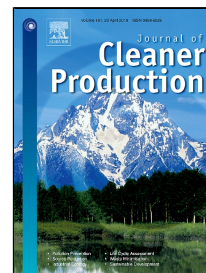


Accepted Manuscript

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PII: S0959-6526(18)30724-8
DOI: 10.1016/j.jclepro.2018.03.067
Reference: JCLP 12325
To appear in: *Journal of Cleaner Production*
Received Date: 06 November 2017
Revised Date: 13 February 2018
Accepted Date: 07 March 2018

Please cite this article as: A.P. Rodrigues, M.L. Fernandes, M.F.F. Rodrigues, S.C. Bortoluzzi, S. Gouvea Da Costa, E. Pinheiro De Lima, Developing criteria for performance assessment in municipal solid waste management, *Journal of Cleaner Production* (2018), doi: 10.1016/j.jclepro.2018.03.067

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Developing criteria for performance assessment in municipal solid waste management

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Abstract

Sustainable development is being approached as new economic paradigm that establishes a general context for organizations and institutions develop their strategies and processes. This is particularly true for public administration, where a change process is being taking place towards the development of sustainable and smart cities. Complex operations networks and closed-loop supply chains define structures for managing the flow of materials, energy and information. This paper addresses the problem of managing solid waste in small cities, and based on an in depth case study that is used to illustrate the application of a performance measurement assessment exercise. The development of the assessment model is based on an adaptation of the methodology for Multi-criteria Decision Aid – Constructivist (MCDA-C), that allows the comparison of the proposed strategic objectives for solid waste management and the available performance information. Experts play an important role in aligning objectives with the performance measurement system, as the performance indicators could be objectively defined, and integrated to the assessment model, which produces at the end a global score that could be used for benchmarking, particularly for tracking the evolution over the years. The model is applied in the context of a small city that formally addresses sustainability in its institutional strategic plan. The model is tailor-made for the application case, and it is verified that the sustainability index for assessing the solid waste management obtained a score of 30.5 points, considering as reference the anchorage of intervals with performance "Neutral" 0 (zero) points and "Good" 100 (one hundred) points. It is identified objective opportunities for improvement in areas associated to governance and operational efficiency. It could be concluded that the performance assessment of the municipal solid waste management becomes an important element to ensure compliance, and to realize the sustainability strategy plan. Besides that, it provides information to control and an integrated management of the key performance dimensions, mainly due to the identification of factors that connect measures to diagnosis and improvement processes. Based on a case study, a performance assessment could take place and shows its value to the practice of municipal solid waste management.

Keywords: *Sustainable operations, Performance assessment, Solid waste management, Methodology for Multi-criteria Decision Aid – Constructivist.*

1. Introduction

Public administration is experimenting a revolution in how their services are being conceived and provided. A New Public Management (NPM) model have been developed over the last 10 years, and this is influencing how smart and sustainable cities are being redesigned. The public administration agenda considers sustainability as key success factor, as new technologies are enabling to develop and to provide sustainable public services (Deslatte et al., 2017, Homsy and Warner, 2015, Gnan et al., 2013).

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