

Solid waste management in emerging economies: opportunities and challenges for reuse and recycling

Chien, C-F., Aviso, K., Tseng, M-L., Fujii, M. & Lim, M.

Author post-print (accepted) deposited by Coventry University's Repository

Original citation & hyperlink:

Chien, C-F, Aviso, K, Tseng, M-L, Fujii, M & Lim, M 2021, 'Solid waste management in emerging economies: opportunities and challenges for reuse and recycling', Resources, Conservation and Recycling, vol. 172, 105677.

<https://dx.doi.org/10.1016/j.resconrec.2021.105677>

DOI 10.1016/j.resconrec.2021.105677

ISSN 0921-3449

Publisher: Elsevier

NOTICE: this is the author's version of a work that was accepted for publication in Resources, Conservation and Recycling. Changes resulting from the publishing process, such as peer review, editing, corrections, structural formatting, and other quality control mechanisms may not be reflected in this document. Changes may have been made to this work since it was submitted for publication. A definitive version was subsequently published in Resources, Conservation and Recycling, 172, (2021) DOI: 10.1016/j.resconrec.2021.105677

© 2021, Elsevier. Licensed under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International

<http://creativecommons.org/licenses/by-nc-nd/4.0/>

Copyright © and Moral Rights are retained by the author(s) and/ or other copyright owners. A copy can be downloaded for personal non-commercial research or study, without prior permission or charge. This item cannot be reproduced or quoted extensively from without first obtaining permission in writing from the copyright holder(s). The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the copyright holders.

This document is the author's post-print version, incorporating any revisions agreed during the peer-review process. Some differences between the published version and this version may remain and you are advised to consult the published version if you wish to cite from it.

Solid waste management in emerging economies: opportunities and challenges for reuse and recycling

Chen-Fu Chien* (Managing Guest Editor), Department of Industrial Engineering and Engineering Management, National Tsing Hua University, Taiwan, E-mail: cfchien@mx.nthu.edu.tw

Kathleen Aviso, Center for Engineering and Sustainable Development Research, De La Salle University, Manila, Philippine, E-mail: kathleen.aviso@dlsu.edu.ph

Ming-Lang Tseng*, Institute of Innovation and Circular Economy, Asia University, Taiwan, E-mail: tsengminglang@gmail.com; tsengminglang@asia.edu.tw

Minoru Fujii, Center for Social and Environmental Systems Research, National Institute for Environmental Studies (NIES), 16-2 Onogawa, Tsukuba, Ibaraki 305-8506, Japan; Email: m-fujii@nies.go.jp

Ming K. Lim, Faculty Research Centre for Business in Society, Coventry University, United Kingdom; E-mail: ac2912@coventry.ac.uk

***Managing Guest Editor**

In emerging economies, the environmental challenges facing human society have become increasingly concentrated due to rising living standards and the countries have a high population density that tremendously increases its solid waste generation. In the face of these changes, the government must implement various solid waste management (SWM) practices; nevertheless, waste treatment infrastructure is continuously strained despite the efficient operation of its waste minimization and resource recovery program in emerging economies. The structural changes in the community behavior of an economic system and solid waste disposal routines influence SWM execution (Tsai et al., 2021). Dissociations between economic growth, environmental pressures, and societal sustainability greatly impedes SWM technology, which is then pressed to its limits, placing unexpected burdens on society (Araee et al., 2020). More in-depth studies are necessary to improve waste processes and move towards sustainability, as well as to create a society free from the risk of resource exhaustion, where cities' ecosystems, especially, opportunities and challenges for reuse and recycling, are preserved without being threatened.

However, rapid elaboration, cumulative discernment, and diverse social, political, environmental and economic challenges result in very different technical and nontechnical barriers, making solid waste management (SWM) a complex and uncertain topic (Bui et al., 2020; Fukuda, 2020). Indeed, SWM would need to understand the opportunities and challenges for reuse and recycling in solving key social and environmental problems. Highlighting these opportunities and challenges are a significant step towards improving waste management outcomes, developing technologies and implementing alternative solutions. For instance, Bui et al. (2020) identified a set of barriers related to SWM practice and revealed that social acceptability, technical integration, and financial and economic problems are factors that affect SWM. The essential nature of technical perspectives, certain gaps related to aligning the technical barriers to reuse and recycling concept, and the nontechnical characteristics of sustainable perspectives to improve SWM can be addressed by examining the opportunities and challenges for reuse and recycling.

Indeed, understanding the SWM opportunities and challenges for reuse and recycling to enhance

the resource utilization and environmental protection in emerging countries is critical and challenges for most of emerging countries (Tseng et al., 2018; Chien et al., 2021). SWM resource utilization seeks to achieve both social and environmental sustainability by catalyzing innovations that underpins sustainable development. Improper disposal of SWM create unsanitary conditions, and these conditions in turn can lead to pollution of the environment; on the other hand, how to turn this situation into opportunities needs to apply the “recycle and reuse” concepts. Prior studies which examine these opportunities and challenges for SWM reuse and recycling need to be integrated. This special issue is to further take the paradigms or challenges from countries in emerging economies.

- What are the roles of government and none-government organization for SWM reuse and recycling in emerging economies?
- How the industry turns this SWM reuse and recycling concept into sustainable business model? For instance, the industry 3.5/4.0 concept to mitigate the SWM burdens
- How is the innovation and technology to benefit the SWM opportunities?
- How to build and understand the behavior pattern in facing solid waste management opportunities and challenges for reuse and recycling?
- What are the transition models for SWM toward sustainability?
- What are the sustainable paradigm cases in practice for SWM opportunities and challenges?

Nevertheless, this special issue is to bring the discussions among the SWM academic communities and address the theoretical model/ practical solution/ methodology contributions.

Manuscript Preparation and Submission

A Virtual Special Issue (VSI) is an online-only grouping of Special Issue articles traditionally assigned to a single Special Issue. The articles in a VSI will be assigned a unique identifier and published in a regular journal issue. The unique identifier allows to simultaneously adding the article to a VSI in ScienceDirect.com. Articles grouped together in a VSI retain their original citation details. A VSI speeds up the publication of individual articles as, unlike the publication process for conventional Special Issue articles, a VSI does not need to wait for the final article to be ready before publication.

A detailed submission guideline is available as “Guide for Authors” at:

<http://www.journals.elsevier.com/resources-conservation-and-recycling>. All manuscripts and any supplementary material should be submitted through the online editorial system (<https://www.editorialmanager.com/recycl>). The authors must select “SI: Solid waste management” in the submission process.

Important Dates

- Full paper submission deadline: 31th December, 2021
- Final decision notification: 01st June, 2022
- Publication: As soon as accepted (VSI)

References

Araee, E., Manavizadeh N., Bosjin, SA., 2020. Designing a multi-objective model for a hazardous waste routing problem considering flexibility of routes and social effects. *Journal of Industrial and Production Engineering*, 37(1), 33-45.

- Bui, T. D., Tsai, F. M., Tseng, M. L., Ali, M. H., 2020. Identifying sustainable solid waste management barriers in practice using the fuzzy Delphi method. *Resources, conservation and recycling*, 154, 104625.
- Chien, C.-F., Tseng, M.L., Tan, R.G., Tan, K., Velek, O., 2021. Industry 3.5 for Sustainable Migration and Total Resource Management. *Resources, Conservation & Recycling*, 169, 105505.
- Fukuda, K., 2020. Science, technology and innovation ecosystem transformation toward society 5.0. *International Journal of Production Economics*, 220, 107460.
- Tsai, F. M., Bui, T. D., Tseng, M. L., Wu, K. J., 2020. A causal municipal solid waste management model for sustainable cities in Vietnam under uncertainty: A comparison. *Resources, Conservation and Recycling*, 154, 104599.