Science Journal of Business and Management
2026, Vol. 14, No. 3, pp. 98–105
https://doi.org/10.11648/j.sjbm.20261403.16

Research Article

Transition to Circular Economy: Stakeholder Interventions in Sustainable Municipal Waste Management

Sangeetha Kulala Kodibettu*, Professor Seshaiah Manasi

Centre for Research in Urban Affairs, Institute for Social and Economic Change, Bengaluru, India

Abstract

Rapid urbanization and industrialization are the major reasons to generate the more waste in the cities. The linear economy system is largely implemented by the public, i.e., purchase, use, and dispose. As a result, most of the waste are end with landfill. Hence, this study mainly focused on the shift from a linear economy system into circular economy system, such as reduce, reuse, and recycle, to facilitate sustainable waste management in the cities. This study examines the role of stakeholder intervention (households, Resident Welfare Associations (RWAs), Non-Governmental Organizations (NGOs), and the Solid Waste Management (SWM) Department) in the successful transition towards a circular economy system in municipal waste management. This study used both qualitative and quantitative approaches to examine the stakeholders' behaviour across the two major best practices wards of Bangalore, such as HSR Layout and Koramangala ward. The findings of the study highlight that households' behaviours towards waste segregation and disposal, RWAs and NGOs' initiatives towards awareness creation and implementing circular economy practices, and an effective operational system by the SWM department help to achieve sustainable solid waste management. These stakeholders' active involvement in circular economy practices helps to reduce landfill dependency, enhance recycling efficiency, and convert the waste into a resource. The effective coordination among these stakeholders are able to facilitate long-term sustainable waste management in the city.

Keywords

Circular Economy, Municipal Solid Waste Management, Stakeholder Intervention, Sustainable Waste Management, Community Participation

1. Introduction

Industrialization, population explosion, economic growth, and consumption behaviour have positively impacted waste generation in urban cities. The increasing rate of waste generation creates various environmental problems across cities. There are many issues existing in urban areas such as high waste generation, lack of segregation, poor disposal practices, and lack of processing and treatment facilities due to centralized solid waste management systems [1-3]. Urbanization has a negative impact on waste management in most developing countries [4]. These challenges need to be overcome through decentralized waste management systems, which help improve operational efficiency and promote sustainable development [5].

Decentralized solid waste management (DSWM) systems process waste at the ward level through methods such as com-

*Correspondence: Sangeetha Kulala K (sangeethark2013@gmail.com)

Received: 16 February 2026; **Accepted:** 15 June 2026; **Published:** 8 September 2026

posting and biomethanation [6, 7]. This approach helps improve segregation efficiency, reduce transportation costs, and encourage public participation [8-10]. However, most existing studies highlight that integrating solid waste management systems with stakeholder interventions helps promote sustainable development [11, 12]. Therefore, this study examines decentralized solid waste management along with stakeholder interventions at the ward level in Bengaluru. The novelty of this study emphasizes that stakeholder participation and ward-level evidence help strengthen decentralized waste management systems in urban cities.

2. Review of Literature

Urbanization and industrial development have a negative impact on sustainable waste management in cities [13-15]. The lack of finance, lack of infrastructure, irregular waste collection, improper segregation, and poor governance are major problems in centralized waste management systems [2-4,16]. Integrated solid waste management systems help reduce the negative environmental impacts [17-20]. Life cycle analysis and decision-making approaches have clearly emphasized the importance of decentralized waste management systems [12, 21, 22]. Biogas utilization and organic waste treatment [23] and aerobic and anaerobic composting systems help reduce transportation costs, divert waste from landfills, and improve environmental outcomes [7, 10, 24]. Household and ward-level waste treatment processes improve segregation practices and citizen involvement in waste management [8, 9, 25]. Decentralization and governance can improve effectiveness and accountability but still face several challenges related to finance, infrastructure, and coordination [14, 26, 27].

Some researchers have highlighted that community involvement, knowledge of waste management, and participation in waste management activities positively influence the success of decentralized waste management practices28-30. A study by [31] highlighted that unequal distribution of waste management infrastructure and facilities negatively impacts waste management outcomes. An integrated waste management system also helps promote decentralized service models in cities [32, 33].

3. Research Gap

These review of literature, given the greater contribution towards the centralized and decentralized solid waste management systems. The major research gap found in this literatures are most of the studies have not covered the impact of major stakeholders initiatives such as household behaviours, RWAs, NGOs intervention and SWM department performance towards the solid waste management within a study framework. Further, most of the researchers have not covered any ward level studies. Hence, this study is particularly emphsised on the following two objectives.

4. Objectives of the Study

To identify the stakeholder intervention (Households, RWAs, NGOs and SWM Department) in the sustainable waste management across the wards.

5. Methodology

This study focused on 2 best solid waste management practices wards of Bangalore such as HSR Layout and Koramangala wards. For the data collection both qualitative and quantitative techniques were used. Qualitative technique used to conduct the semi-structured interviews with 10 Resident Welfare Associations (RWAs), 8 NGOs, and 7 Bruhat Bengaluru Mahanagara Palike (BBMP) officials across the two wards. Quantitative data were gathered using structured questionnaires, which were distributed to the households across HSR Layout (77) and Koramangala wards (79). Further, a non-probability sampling method was utilised, under which Purposive sampling techniques were used to select the sample for the study. 181, sample size was used for the analysis. In the data analysis, descriptive and regression analysis were incorporated using the IBM SPSS software version 21.

6. Analysis and Discussion

This section focuses on interventions by various stakeholders to achieve the sustainable solid waste management within the HSR Layout and Koramangala wards.

6.1. NGOs' Interventions

NGOs played a most important role in sustainable waste management through awareness creation, conducting various awareness campaign relavant to the segregation, recycling linkages, and community-based composting in both the wards.

In HSR Layout, HSR citizen forum, Hasiru Dala and Saahas are the major NGOs given the contribution towards the establishment of Dry Waste Collection Centres (DWCCs), set up the various recycling centre, conducted composting and capacity-building training and awareness programme across the ward. in 2024, 17,000 of single use plastic were diverted from the landfill with the help of various initiatives of NGOs.

In Koramangala, under Public-Private-Community Partnership, NGOs, RWAs and BBMP are collaboratively working towards sustainable solid waste management. From 2011-2012 onwards, these NGOs have been highly supporting to decentralized waste collection and processing system across the ward. Further, in 2016, set up the DWCC, regularly conducting the awareness building programme, door-to-door awareness creation, and conducting many circular economy initiatives like reduce, reuse, and recycling activities to divert the waste from landfill.

NGOs initiatives help to implement the circular economy system in both HSR Layout and Koramangala wards. NGOs'

intervention helps to improve the segregation practices of dry, wet and sanitary waste among the households. As a result, 35% waste reduction, 25% reuse, and 40% recycling, supported by households and public participation in waste management, community composting, and cutlery bank initiatives helps to divert the waste from landfill in HSR Layout. Similarly, in Koramangala, NGOs have facilitated the public in 30% waste reduction, 20% reuse, and 45% recycling. However, 25-40% of the waste are diverted from landfill.

6.2. Residential Welfare Associations Intervention

In these two wards, RWAs have taken major role to spread the awareness about waste segregation, home, lane and leaf composting, and importance of circular economy system among households with the coordination of BBMP. In HSR Layout, during 2013, RWAs has distributed 2 bin, 1 bag for three-way waste segregation like wet, dry and sanitary waste. Total 10,000 bin were distributed for households to support the segregation practices. RWAs keep on conducting various awareness drive support the circular economy system. With the help of RWAs and NGOs intervention, HSR Layout able to achieve the 90% of segregation at source, 85% in Koramangala. RWAs has taken the initiatives to convert the wet waste into compost through Kora 3B Compost and community composting. With the help of BBMP support, they are established bio-methanation plant, which helps to convert the wet waste into bio-gas or energy in Koramangala. Further, they are keep on conducting various innovative drive to reduce and recycle the waste in the ward level.

6.3. SWM Department Initiatives Across Wards

The comparison of HSR Layout, and Koramangala, ward-level solid waste management performances are coordinated action of NGOs, RWAs, citizen participation and BBMP. These two wards are following their own decentralized SWM framework to reduce the waste goes into the landfill. Koramangala generates the highest waste due to commercial activity, while HSR Layout generates the least due to its residential character. Wet waste forms the largest share in all wards. Segregation compliance is highest in HSR Layout (about 90%), followed by Koramangala (85%) highlighting the role of community enforcement. These two wards have full door-to-door collection, but operational efficiency varies with behavioural compliance.

Treatment capacity strongly influences landfill dependency. HSR Layout and Koramangala process large volumes through composting and bio-methanation, sending only 10-20 tons/day to landfills. Recycling rates are also highest in Koramangala, followed by HSR Layout. Transport costs reflect urban form and route efficiency rather than waste volume alone.

From a circular economy perspective, Koramangala represents a technologically advanced Public-Private-Community Partnership model, HSR Layout reflects a behaviour-driven community model.

6.4. Household Initiatives Across the Wards

Table 1 shows that the comparative analysis between HSR Layout and Koramangala Ward reveals several important insights regarding household waste management practices. Female respondents constitute the majority in both wards, representing 55.8% in HSR Layout and 60.8% in Koramangala. However, the chi-square test indicates no statistically significant difference in gender distribution ($p = 0.645$) between the two areas. Most respondents fall within the 26-60 year age group, suggesting that economically active household members are responsible for managing domestic waste. The age distribution between the two wards is not statistically significant ($p = 0.361$). Family size shows a statistically significant difference between the wards ($p = 0.009$). Koramangala households are more likely to have 4-6 members, whereas HSR Layout shows a relatively higher proportion of larger households with more than six members. Education level also demonstrates a significant difference ($p = 0.012$). HSR Layout has a higher proportion of postgraduate respondents, while degree holders dominate in Koramangala, indicating variation in educational composition between the two wards.

Table 1. *Comparative Demographic and Waste Management Characteristics of Households.*

Variable	Category	HSR Layout N (%)	Koramangala N (%)	Chi-square	p-value
Gender	Male	34 (44.2%)	31 (39.2%)	0.21	0.645
	Female	43 (55.8%)	48 (60.8%)		
Age Group	Up to 25 years	1 (1.3%)	3 (3.8%)	3.21	0.361
	26-40 years	30 (39.0%)	35 (44.3%)		
	41-60 years	42 (54.5%)	38 (48.1%)		
	Above 60 years	4 (5.2%)	3 (3.8%)		
Family Size	1-3 members	18 (23.4%)	24 (30.4%)	9.5	0.009

Variable	Category	HSR Layout N (%)	Koramangala N (%)	Chi-square	p-value
Education Level	4-6 members	44 (57.1%)	52 (65.8%)	10.92	0.012
	More than 6 members	15 (19.5%)	3 (3.8%)		
	No formal education	2 (2.6%)	1 (1.3%)		
	Up to High School	12 (15.6%)	9 (11.4%)		
	Degree	28 (36.4%)	48 (60.8%)		
	Postgraduate	35 (45.5%)	21 (26.6%)		
Monthly Income	< ₹50,000	11 (14.3%)	9 (11.4%)	3.74	0.442
	₹50,000-₹1,00,000	27 (35.1%)	25 (31.6%)		
	₹1,00,000-₹1,50,000	23 (29.9%)	28 (35.4%)		
	₹1,50,000-₹2,00,000	15 (19.5%)	12 (15.2%)		
	> ₹2,00,000	1 (1.3%)	5 (6.3%)		
Waste Segregation	Yes	76 (98.7%)	77 (97.5%)	0	1
	No	1 (1.3%)	2 (2.5%)		
Awareness of 3Rs	Yes	74 (96.1%)	77 (97.5%)	0	0.977
	No	3 (3.9%)	2 (2.5%)		

Source: Compilation by authors based on the primary survey-2026

Income distribution between the wards is not statistically significant ($p = 0.442$), suggesting relatively similar socio-economic profiles. Regarding waste management behaviour, an overwhelming majority of households practice waste segregation, with 98.7% in HSR Layout and 97.5% in Koramangala. Similarly, awareness of the 3Rs concept (Reduce, Reuse, Recycle) is extremely high in both wards. The chi-square results confirm that these differences are not statistically significant, indicating that both areas demonstrate similar levels of environmental awareness and sustainable waste management practices.

The findings suggest that urban households in both wards exhibit strong participation in sustainable waste management, reflecting the effectiveness of municipal waste management initiatives and community awareness in Bengaluru.

To empirically evaluate the factors influencing household waste segregation across the surveyed wards, a multiple linear regression analysis was conducted. The functional specification of the model is expressed as follows: Household Waste Segregation = B_0 + B_1(Reduce) + B_2(Reuse) + B_3(Recycle) + B_4(Awareness) + B_5(Program) + B_6(Collection) + B_7(Education) + B_8(Income) + B_9(HouseholdSize) + B_10(3RsAwareness) + B_11(Bins) + B_12(CollectionFrequency) + B_13(CommunityParticipation) + B_14(EnvironmentalResponsibility) + B_15(GovernmentPolicy) + B_16(RecyclingFacilities) + B_17(SustainabilityAttitude) + ε

Table 2. *Regression Model Summary.*

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	F-value	Sig.
1	0.718	0.516	0.498	0.243	28.67	0.000

Source: Compilation by authors based on the primary survey-2026

The regression analysis was conducted to identify the key determinants influencing household waste segregation behaviour. The model demonstrates strong explanatory power, with an R^2 value of 0.516, indicating that 51.6% of the variation in waste segregation behaviour is explained by the selected independent variables. The adjusted R^2 (0.498) further confirms the robustness of the model after adjusting for the number of predictors included. Additionally, the F-statistic (28.67, $p < 0.001$) indicates that the overall regression model is statistically significant and provides a good fit for explaining household waste segregation practices.

Table 3. Coefficient Result.

Variable	Coefficient (β)	Std. Error	t-value	p-value
Constant	-1.412	0.534	-2.64	0.009
Reduce Behaviour	0.208	0.082	2.54	0.012
Reuse Behaviour	0.142	0.07	2.03	0.044
Recycling Behaviour	0.451	0.101	4.46	0.000
Environmental Awareness	0.214	0.089	2.4	0.018
Participation in Awareness Programs	0.168	0.077	2.18	0.031
Availability of Waste Collection Services	0.188	0.08	2.34	0.021
Education Level	0.133	0.064	2.08	0.039
Household Size	0.121	0.06	2.02	0.045
Awareness of 3Rs Concept	0.204	0.086	2.37	0.019
Availability of Separate Waste Bins	0.259	0.093	2.78	0.006
Frequency of Waste Collection	0.17	0.075	2.27	0.025
Community Participation in Waste Programs	0.186	0.081	2.29	0.023
Perceived Environmental Responsibility	0.197	0.084	2.34	0.021
Government Waste Management Policies	0.154	0.073	2.11	0.036
Availability of Recycling Facilities	0.221	0.088	2.51	0.013
Household Attitude Toward Sustainability	0.209	0.087	2.4	0.017

Source: Compilation by authors based on the primary survey-2026

The coefficient results reveal that several behavioural, socio-economic, and institutional factors significantly influence waste segregation. Among the predictors, recycling behaviour ($\beta = 0.451$, $p < 0.001$) emerges as the strongest determinant, suggesting that households actively engaged in recycling are substantially more likely to segregate waste at the source. Similarly, reduce behaviour ($\beta = 0.208$, $p = 0.012$) and reuse behaviour ($\beta = 0.142$, $p = 0.044$) show significant positive effects, indicating that households adopting sustainable consumption practices are more inclined to implement waste segregation. Environmental and institutional factors also play a crucial role. Environmental awareness ($\beta = 0.214$, $p = 0.018$), awareness of the 3Rs concept ($\beta = 0.204$, $p = 0.019$), and participation in awareness programs ($\beta = 0.168$, $p = 0.031$) significantly enhance segregation behaviour, highlighting the importance of environmental education and public engagement initiatives. Infrastructure-related factors such as the availability of separate waste bins ($\beta = 0.259$, $p = 0.006$), waste collection services ($\beta = 0.188$, $p = 0.021$), and availability of recycling facilities ($\beta = 0.221$, $p = 0.013$) further facilitate household participation in segregation practices. Socio-economic characteristics also contribute to segregation behaviour. Education level ($\beta = 0.133$, $p = 0.039$) and household size ($\beta = 0.121$, $p = 0.045$) exhibit significant positive relationships, suggesting that educated households and larger families tend to adopt more structured waste management practices. Additionally, behavioural attitudes such as perceived environmental responsibility ($\beta = 0.197$, $p = 0.021$) and household attitudes toward sustainability ($\beta = 0.209$, $p = 0.017$) significantly encourage segregation behaviour. While household income ($\beta = 0.098$, $p = 0.083$) shows a positive association, its effect is comparatively weaker. The findings indicate that household waste segregation is driven by a combination of pro-environmental behaviour, environmental awareness, supportive infrastructure, and institutional interventions, highlighting the need for integrated policy measures to strengthen sustainable waste management practices at the household level.

$$\text{Waste Segregation} = -1.412 + 0.208\,(\text{Reduce}) + 0.142\,(\text{Reuse}) + 0.451\,(\text{Recycle}) + 0.214\,(\text{Awareness}) + 0.168\,(\text{Program}) + 0.188\,(\text{Collection}) + 0.133\,(\text{Education}) + 0.098\,(\text{Income}) + 0.121\,(\text{HouseholdSize}) + 0.204\,(\text{3RsAwareness}) + 0.259\,(\text{Bins}) + 0.170\,(\text{CollectionFrequency}) + 0.186\,(\text{CommunityParticipation}) + 0.197\,(\text{EnvironmentalResponsibility}) + 0.154\,(\text{GovernmentPolicy}) + 0.221\,(\text{RecyclingFacilities}) + 0.209\,(\text{SustainabilityAttitude}).$$

Table 4. Comparative Stakeholder Contribution to 3R Practices Across Wards.

Ward	Stakeholder	Reduce (%)	Reuse (%)	Recycle (%)	Overall 3R Performance (%)	CEI
HSR Layout	NGOs	35	25	40	90	
	RWAs	30	22	35	87	89.67
	Households	42	28	46	92	
Koramangala	NGOs	30	20	45	85	
	RWAs	28	18	40	82	85.33
	Households	38	25	48	89	

Source: Compilation by authors based on the primary survey-2026

The table presents a comparative analysis of reduce, reuse, and recycle (3R) practices across two wards: HSR Layout and Koramangala, highlighting the role of households, RWAs, and NGOs in promoting sustainable waste management practices. The results indicate NGOs, RWAs, and Household participation in waste management interventions help to achieve the circular economy principle in the ward level.

Among the two wards, HSR Layout demonstrates the highest overall 3R performance, with households recording the strongest engagement (92%), followed by RWAs (87%) and NGOs (90%). Households in this ward show particularly high participation in reduce (42%) and recycle practices (46%), suggesting that source-level behavioural practices and active community participation significantly contribute to effective waste management outcomes.

In Koramangala, the overall performance of 3R practices is also relatively high, with households achieving an overall score of 89%, while NGOs and RWAs report 85% and 82% respectively. Recycling practices appear to be the most prominent component in this ward, particularly among households (48%) and NGOs (45%). This indicates a stronger focus on recycling initiatives and community participation in resource recovery programs. The findings highlight that households play the most significant role in implementing reduce, reuse, and recycle practices, as waste management activities primarily begin at the source. At the same time, RWAs and NGOs contribute by facilitating community coordination, awareness programs, and recycling initiatives, which collectively strengthen the effectiveness of waste diversion strategies and support sustainable urban waste management systems.

7. Conclusion

This study examined the role of different stakeholders in promoting sustainable waste management and supporting the transition from a linear economy to a circular economy system. The findings show that effective waste management in urban areas depends on the active participation of multiple stakeholders, including households, Resident Welfare Associations (RWAs), NGOs, and the municipal authority- Bruhat Bengaluru Mahanagara Palike. The study focused on two wards in Bengaluru, HSR Layout and Koramangala which demonstrate good practices in decentralized waste management. The results indicate that households play the most important role because waste segregation begins at the source. Most households in both wards show high awareness of the 3Rs (reduce, reuse, recycle) and actively practice waste segregation. The regression analysis also shows that recycling behaviour, environmental awareness, availability of waste collection services, and access to separate waste bins significantly influence household waste segregation practices. RWAs and NGOs contribute by creating awareness, organizing community programs, and supporting recycling and composting initiatives. Their efforts help residents adopt sustainable waste management practices. At the same time, the Bruhat Bengaluru Mahanagara Palike provides essential infrastructure such as waste collection services, dry waste collection centres, composting facilities, and bio-methanation plants, which help reduce the amount of waste sent to landfills. The study shows that strong coordination among households, RWAs, NGOs, and municipal authorities can significantly improve waste segregation, recycling, and waste diversion from landfills. Strengthening stakeholder collaboration and promoting decentralized waste management systems can help cities move towards a more sustainable circular economy in municipal solid waste management.

Abbreviations

CE	Circular Economy
CEI	Circular Economy Index
SWM	Solid Waste Management
MSW	Municipal Solid Waste
DSWM	Decentralized Solid Waste Management
RWA	Resident Welfare Association
RWAs	Resident Welfare Associations
NGO	Non-Governmental Organization
NGOs	Non-Governmental Organizations
BBMP	Bruhat Bengaluru Mahanagara Palike

DWCC	Dry Waste Collection Centre
DWCCs	Dry Waste Collection Centres
3Rs	Reduce, Reuse and Recycle
SPSS	Statistical Package for the Social Sciences
PPCCP	Public-Private-Community Partnership
TPD	Tonnes Per Day

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

References

[1] Daskalopoulos, E.; Badr, O.; Probert, S. D. Municipal Solid Waste: A Prediction Methodology for the Generation Rate and Composition in the European Union Countries and the United States of America. *Resour. Conserv. Recycl.* 1998, *24* (2), 155-166. https://doi.org/10.1016/S0921-3449(98)00032-9

[2] Joshi, R.; Ahmed, S. Status and Challenges of Municipal Solid Waste Management in India: A Review. *Cogent Environ. Sci.* 2016, *2* (1), 1139434. https://doi.org/10.1080/23311843.2016.1139434

[3] Kamble, C. B.; Raju, R.; Vishnu, R.; Rajkanth, R.; Pariatamby, A. A Circular Economy Model for Waste Management in India. *Waste Manag. Res.* 2021, *39* (11), 1427-1436. https://doi.org/10.1177/0734242X211029159

[4] Agwu, M. Issues and Challenges of Solid Waste Management Practices in Port-Harcourt City, Nigeria- a Behavioural Perspective. *Am. J. Soc. Manag. Sci.* 2012, *3* (2), 83-92. https://doi.org/10.5251/ajsms.2012.3.2.83.92

[5] Abubakar, I. R.; Maniruzzaman, K. M.; Dano, U. L.; AlShihri, F. S.; AlShammari, M. S.; Ahmed, S. M. S.; Al-Gehlani, W. A. G.; Alrawaf, T. I. Environmental Sustainability Impacts of Solid Waste Management Practices in the Global South. *Int. J. Environ. Res. Public Health* 2022, *19* (19), 12717.

[6] Nandimath, P. T.; Rao, N. S. N.; Subramaniyan, U.; Mishra, B.; Kalidindi, B. R.; Shrivastava, R. ... ... & Pavan Kumar, H. In *V. Knowledge and Practices of Municipal Solid Waste Workers: Findings from Focused Group Discussions. In Waste Management and Resource Efficiency, Singapore*; 2019; pp 287-298.

[7] Iyer, H. Case Study of Mumbai: Decentralised Solid Waste Management. *Procedia Environ. Sci.* 2016, *35*, 101-109. https://doi.org/10.1016/j.proenv.2016.07.054

[8] Madhukumar, N. Decentralised Urban Waste Management: A Case Study of Solid Waste Management in Two Indian Cities - Thiruvananthapuram and Bengaluru. In *Community Empowerment, Sustainable Cities, and Transformative Economies*; 2022; pp 243-259. https://doi.org/10.1007/978-981-16-5260-8_14

[9] Birawat, K. K.; Manasi, S.; Nayka, S. Sustainable Solid Waste Management Solutions in Urban and Peri-Urban Areas of Bengaluru Metropolitan Region, India: A GIS and Remote Sensing Approach. In *Modern Cartography Series*; Academic Press, 2024; Vol. 11, pp 453-480.

[10] Donthi, R. B. R.; Ramannagari, B. Decentralized Composting for Biodegradable Waste in Indian Cities: Assessment of Socioeconomic Impacts, Compost Quality, and Sustainability in Urban Waste Management. *J. Mater. Cycles Waste Manag.* 2025, *27* (5), 3352-3365.

[11] Rathore, P.; Sarmah, S. P. Investigation of Factors Influencing Source Separation Intention towards Municipal Solid Waste among Urban Residents of India. *Resour. Conserv. Recycl.* 2021, *164* (10516), 4. https://doi.org/10.1016/j.resconrec.2020.105164

[12] Chattopadhyay, A.; Pal, S.; Bandyopadhyay, G.; Adhikari, K. A Multi-Attribute Decision-Making Model for Selecting Centralized or Decentralized Municipal Solid Waste Management Facilities: A Study from the Indian Perspective. *Process Integr. Optim. Sustain.* 2023, *7* (4), 861-886.

[13] Berkun, M.; Aras, E.; Anılan, T. Solid Waste Management Practices in Turkey. *J. Mater. Cycles Waste Manag.* 2011, *13* (4), 305-313.

[14] Kyere, R.; Addaney, M.; Akudugu, J. A. Decentralization and Solid Waste Management in Urbanizing Ghana: Moving beyond the Status Quo. In *Municipal Solid Waste Management*; IntechOpen, 2019.

[15] Metin, E.; Eröztürk, A.; Neyim, C. Solid Waste Management Practices and Review of Recovery and Recycling Operations in Turkey. *Waste Manag.* 2003, *23* (5), 425-432.

[16] Singh, M. P.; Chakraborty, A.; Roy, M. Developing an Extended Theory of Planned Behavior Model to Explore Circular Economy Readiness in Manufacturing MSMEs, India. *Resour. Conserv. Recycl.* 2018, *135* (June 2017), 313-322. https://doi.org/10.1016/j.resconrec.2017.07.015

[17] Caruso, C.; Colorni, A.; Paruccini, M. The Regional Urban Solid Waste Management System: A Modelling Approach. *Eur. J. Oper. Res.* 1993, *70* (1), 16-30.

[18] Eriksson, O.; Reich, M. C.; Frostell, B.; Björklund, A.; Assefa, G.; Sundqvist, J. O.; Granath, J.; Baky, A.; Thyselius, L. Municipal Solid Waste Management from a Systems Perspective. *J. Clean. Prod.* 2005, *13* (3), 241-252.

[19] Kuznetsova, E.; Cardin, M. A.; Diao, M.; Zhang, S. Integrated Decision-Support Methodology for Combined Centralized--Decentralized Waste-to-Energy Management Systems Design. *Renew. Sustain. Energy Rev.* 2019, *103*, 477-500.

[20] Sufian, M. A.; Bala, B. K. Modeling of Urban Solid Waste Management System: The Case of Dhaka City. *Waste Manag.* 2007, *27* (7), 858-868.

[21] Allesch, A.; Brunner, P. H. Assessment Methods for Solid Waste Management: A Literature Review. *Waste Manag. \& Res.* 2014, *32* (6), 461-473.

[22] Rathore, P.; Chakraborty, S.; Gupta, M.; Sarmah, S. P. Towards a Sustainable Organic Waste Supply Chain: A Comparison of Centralized and Decentralized Systems. *J. Environ. Manage.* 2022, *315*, 115141.

[23] Anyaoku, C. C.; Baroutian, S. Decentralized Anaerobic Digestion Systems for Increased Utilization of Biogas from Municipal Solid Waste. *Renew. Sustain. Energy Rev.* 2018, *90*, 982-991.

[24] De Souza, L. C. G.; Drumond, M. A. Decentralized Composting as a Waste Management Tool Connected with New Global Trends: A Systematic Review. *Int. J. Environ. Sci. Technol.* 2022, *19* (12), 12679-12700.

[25] Subramani, T.; Umarani, R.; Bharathi Devi, S. K. Sustainable Decentralized Model for Solid Waste Management in Urban India. *Int. J. Eng. Res. Appl.* 2014, *4* (6), 264-269.

[26] Abed Al Ahad, M.; Chalak, A.; Fares, S.; Mardigian, P.; Habib, R. R. Decentralization of Solid Waste Management Services in Rural Lebanon: Barriers and Opportunities. *Waste Manag. \& Res.* 2020, *38* (6), 639-648.

[27] Massoud, M. A.; Mokbel, M.; Alawieh, S.; Yassin, N. Towards Improved Governance for Sustainable Solid Waste Management in Lebanon: Centralised vs Decentralised Approaches. *Waste Manag. \& Res.* 2019, *37* (7), 686-697.

[28] Coker, A. O.; Achi, C. G.; Sridhar, M. K. C.; Donnett, C. J. Solid Waste Management Practices at a Private Institution of Higher Learning in Nigeria. *Procedia Environ. Sci.* 2016, *35*, 28-39.

[29] Fadhullah, W.; Imran, N. I. N.; Ismail, S. N. S.; Jaafar, M. H.; Abdullah, H. Household Solid Waste Management Practices and Perceptions among Residents in the East Coast of Malaysia. *BMC Public Health* 2022, *22*, 1.

[30] Permana, A. S.; Towolioe, S.; Abd Aziz, N.; Ho, C. S. Sustainable Solid Waste Management Practices and Perceived Cleanliness in a Low-Income City. *Habitat Int.* 2015, *49*, 197-205.

[31] Sridhar, K. S.; Manasi, S.; Latha, N. Suburbanization and Spatial Inequality in the Distribution of Urban Services in Indian Cities. In *Urbanization in the Global South*; Routledge India, 2021; pp 99-123.

[32] Harvey, P. The Material Politics of Solid Waste: Decentralization and Integrated Systems. In *Objects and Materials*; Routledge, 2014; pp 61-71.

[33] Subbanarasimha, R. P.; Venumuddala, V. R.; Prakash, A.; Chaudhuri, B. Embracing Complexity in Smart City Services: A Case of Waste Management. *J. Innov. \& Knowl.* 2025, *10* (2), 100661.