

Beyond the Bin: Understanding Public Resistance to Sustainable Waste Management in Seremban, Malaysia

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ABSTRACT

Malaysia's waste management sector faces growing challenges due to increasing waste generation, inadequate infrastructure, heavy reliance on landfills, and low recycling rates. This study examines factors influencing public resistance to effective waste management practices in Seremban, focusing on financial constraints, public participation and awareness, and socio-cultural attitudes. Guided by the Theory of Planned Behavior (TPB) and the Norm Activation Model (NAM), a cross-sectional quantitative survey was conducted among 122 respondents from urban and rural areas using a five-point Likert-scale questionnaire. The findings revealed that all three factors significantly influenced public resistance to waste management practices. Multiple regression analysis showed that the model explained 80.9% of the variance in public resistance, with socio-cultural attitude emerging as the most influential factor. The findings highlight the importance of culturally sensitive interventions, community engagement, public awareness, and improved financial and infrastructural support in promoting sustainable waste management. However, the cross-sectional design, convenience sampling, self-reported data, and small sample size limit the generalisability of the findings. Future studies should consider larger samples and mixed-method approaches.

Keywords: Waste Management, Public Resistance, Financial Constraints, Community Engagement, Socio-Cultural Attitudes

INTRODUCTION

Effective waste management has emerged as a central concern in achieving environmental sustainability particularly in rapidly urbanizing countries

such as Malaysia. The nation faces increasing volumes of municipal solid waste (MSW) driven by population growth, urban expansion and heightened industrial and commercial activity. Despite the development and implementation of modern waste management technologies and regulatory frameworks, Malaysia continues to experience systemic inefficiencies that compromise the effectiveness of waste collection, segregation and recycling initiatives (Salleh, Ahmad & Noraini, 2022). Empirical evidence indicates that these inefficiencies are shaped by a complex interplay of resistance factors that span institutional, economic, social and cultural dimensions. Without a nuanced understanding of these interdependent barriers, policy and technological interventions alone are insufficient to achieve sustainable outcomes (Subri, Yusof & Mahmud, 2024).

One major challenge lies in weak enforcement and fragmented policy implementation. Legislative instruments such as the Solid Waste and Public Cleansing Management Act 2007 (Act 672) and complementary laws like the Environmental Quality Act 1974 provide a comprehensive framework for integrated waste management. However, inconsistencies in the application of these laws, varying adoption across states and inadequate monitoring undermine their effectiveness (Moh & Manaf, 2017). Weak

enforcement not only reduces compliance but also diminishes public trust and engagement while creating a feedback loop in which citizens perceive waste management as futile or irrelevant. This institutional fragility highlights the importance of understanding how policy and governance factors interact with societal behaviors to shape the overall performance of waste management systems.

Another significant barrier is low public awareness and participation. Although many Malaysians are aware of recycling programs its highly active participation remains limited, reflecting a disconnect between knowledge and behavior (SWCorp, 2023). and community engagement is further constrained by perceived inconvenience, inadequate infrastructure and socio-cultural norms that frame waste management as the sole responsibility of municipal authorities (Agamuthu & Fauziah, 2011 & Subri, 2024). These attitudes not only inhibit source segregation and recycling efforts but also perpetuate behaviors that reinforce inefficiencies such as improper disposal, illegal dumping and resistance to waste infrastructure development, including the prevalence of “not in my backyard” (NIMBY) syndromes.

Financial constraints at both institutional and community levels exacerbate these challenges. Municipalities often operate under limited budgets, restricting investment in advanced waste processing technologies, modern landfill management and public education campaigns (Moh & Manaf, 2017). At the level, limited access to resources hinders the adoption of sustainable practices such as composting or participation in recycling programs (Bernama News, 2024). This economic limitation reinforces reliance on low-cost, unsustainable practices such as landfilling, creating a cycle where fiscal realities inhibit long-term planning and innovation in waste management infrastructure.

Sociocultural attitudes further compound resistance to effective waste management. Deeply ingrained beliefs that waste disposal is a municipal duty that coupled with generational norms and lack of civic education, limit individual accountability and proactive engagement (Subri et al. 2024). Conversely, certain cultural and religious values such as religiosity, have been shown to positively influence personal norms and encourage pro-environmental behaviors like reducing food waste (Aktas, 2018). Understanding these nuanced influences offers opportunities for culturally tailored interventions that leverage intrinsic motivation alongside policy enforcement and technological solutions.

Given the complex and interrelated nature of these barriers, this study aims to investigate the resistance factors that impede the effectiveness of waste management in Seremban. By examining institutional, financial and socio-cultural constraints alongside public participation patterns, the research seeks to provide evidence-based recommendations for improving policy design, operational strategies and community engagement. Ultimately, the study contributes to the broader understanding of sustainable waste management in Malaysia that offers insights to policymakers, industry stakeholders and local communities on practical interventions to overcome systemic resistance and enhance environmental sustainability.

LITERATURE REVIEW

To analyse the resistance factors affecting Malaysia’s waste management effectiveness, this study adopts a conceptual framework that integrates the Theory of Planned Behavior (TPB) and the Norm Activation Model (NAM). The TPB (Ajzen, 1991) explains waste-related behaviours such as recycling and segregation through three determinants of intention attitude, subjective norms and perceived behavioural control where supportive perceptions and social expectations increase the likelihood of sustainable actions (Hassan, 2021). Complementing this rational-intentional perspective, the NAM (Schwartz, 1977) emphasises moral obligation and proposes that personal norms are activated when individuals recognise the consequences of inaction and feel responsible for addressing them and influenced by factors such as social pressure, cultural values and information exposure (Aschemann-Witzel, 2017). Prior research also shows that elements like religiosity can strengthen moral responsibility towards waste reduction, particularly in food waste contexts (Aktas, 2018). Integrating these models provides a holistic lens to understand how psychological, social and moral drivers interact with resistance factors ultimately shaping public participation in Malaysia’s waste management practices.

Southeast Asian countries such as Indonesia, Thailand and the Philippines face waste management challenges similar to Malaysia's, driven by rapid urbanization, population growth, limited infrastructure and weak governance capacity (Ismail & Manaf, 2022). These shared constraints hinder the development of efficient and sustainable waste systems across the region. Next, in Indonesia, over 190,000 tonnes of waste are generated daily, with most disposed of in landfills that are reaching capacity, including the Bantar Gebang site (World Bank, 2021). Although Law No. 18/2008 provides a national framework for waste governance, implementation remains inconsistent due to resource limitations and governance gaps (Agustina, 2022). Public participation in segregation and recycling is also low particularly in rural communities. Thailand continues to rely heavily on landfilling, yet attempts to introduce new facilities often face NIMBY-driven community resistance that is similar to Malaysia's experience (UNEP, 2021). Waste governance is fragmented across multiple ministries, creating enforcement gaps and coordination challenges that mirror Malaysia's federal-state disconnect. In the Philippines, the Ecological Solid Waste Management Act of 2000 offers a progressive framework but local implementation is weak due to insufficient funding, manpower and political commitment (Bacongus, 2020). The dominance of the informal recycling sector and historical tragedies such as the Payatas landfill collapse further demonstrate systemic governance failures.

In spite of that, Malaysia's waste management system is under increasing strain due to rapid urbanization and population growth which continue to drive up waste generation and overwhelm limited disposal sites. SWCorp in 2024 warned that the country risks becoming a "dumping ground" if current trends persist with daily waste estimates ranging from over 23,000 tonnes to as high as 40,000 tonnes according to the World Bank in 2021 and Khamis et al. (2022). Despite policy efforts, Malaysia remains heavily dependent on landfilling with 80 to 90 percent of municipal waste still disposed of in landfills that are nearing capacity as reported by SWCorp in 2023 and Yusof et al. (2021). Recycling rates have improved to 37.9 percent in 2024 but remain insufficient relative to total waste generation, particularly given earlier rates that were below five percent as highlighted by Mokhtar et al. (2023). Food waste continues to dominate Malaysia's waste composition followed by plastics with rising plastic consumption presenting significant challenges identified by UNEP in 2021 and Zainuddin et al. (2022). Inadequate waste management contributes to severe environmental and health risks including greenhouse gas emissions, microplastic contamination and toxic exposure from poorly managed e-waste as documented by the Department of Environment Malaysia in 2022, WWF-Malaysia in 2023 and Rahman et al. (2023). The persistent reliance on landfills and the slow advancement of recycling indicate deep structural and behavioural barriers, a concern raised by Manaf et al. (2021), underscoring the need for targeted strategies focused on waste reduction, source segregation and public behavioural change, as emphasized by Mokhtar et al. (2023) and UNEP in 2021.

Inadequate Public Participation and Awareness

Public participation in waste management in Malaysia remains a major challenge despite high environmental awareness. Surveys show that while approximately 99 percent of Malaysians are aware of local recycling programs, fewer than 30 percent actively participate, indicating a significant gap between knowledge and action (Ismail & Manaf, 2022). Practical barriers such as perceived inconvenience, lack of time and inadequate access to recycling facilities further limit engagement (Zainuddin, 2022). Only six percent of s consistently practice waste segregation and nearly half report insufficient information on proper sorting at source (SWCorp, 2023). Beyond logistical issues, entrenched societal attitudes shape behaviour as waste management is often seen as the sole responsibility of municipal authorities accompanied by reluctance to pay fees or engage in civic responsibility (Khamis, 2022). Illegal practices among some waste collectors exacerbate challenges (Rahman, 2023). Opposition to facility siting, reflected in "not in my backyard" (NIMBY), "locally unacceptable land use" (LULU) and "not over there either" (NOTE) syndromes seemly increase operational costs and hinders the establishment of essential infrastructure (UNEP, 2021). Demographics also influence participation with rural residents, men and individuals with lower education or income levels exhibiting lower engagement, whereas urban populations are more active (Mokhtar, 2023). Public apathy is reinforced by systemic failures including inconsistent collection services and the mixing of segregated waste which diminish trust and create a cycle of disengagement (Manaf, 2021 & SWCorp, 2023). Addressing these challenges requires strategies that go beyond awareness campaigns to

build trust, ensure equitable responsibility and mitigate societal resistance to infrastructure, fostering more effective and sustainable waste management (Ismail & Manaf, 2022).

Public participation and awareness impact attitudes and social norms related to waste management and recycling. Despite a good deal of public awareness about recycling programs in Malaysia, participation continues to be low because of an individual perception of potential inconvenience, along with dependence on authority figures and general lack of understanding regarding proper waste separation (Ismail & Manaf, 2022). Moreover, public distrust created by inconsistent collection practices further lessen the willingness of people to engage in these programs, indicating that awareness alone is not enough for effective waste management unless there is also development of a stronger sense of social responsibility toward these initiatives (Manaf, 2021).

Financial Constraints

Financial constraints at both municipal and levels significantly impede the development of waste management infrastructure and the adoption of sustainable practices in Malaysia. The cost of managing municipal solid waste has risen steadily with the government allocating RM 1.9 billion for collection and public cleansing in 2023 (Manaf, Samah & Zukki, 2021). Waste collection and disposal alone can consume up to 60 percent of local authority budgets (SWCorp, 2023). Constructing new landfills requires substantial capital that potentially exceeds RM 7.75 million per site (DOE, 2022). Although landfilling remains relatively inexpensive at approximately RM 35 per tonne as many sites are nearing capacity and making the method increasingly unsustainable (Khamis, Rashid & Ghani, 2022). More sustainable alternatives, such as Waste-to-Energy plants, involve significantly higher costs with one project reported at RM 280 million for a capacity of 1,000 tonnes per day (Zainuddin & Isa, 2022).

Inconsistent government funding discourages private investment and limits opportunities for smaller operators to establish sustainable facilities (Rahman & Fadzil, 2023). Low electricity tariffs and regulated tipping fees further reduce the economic viability of waste-to-energy projects (Yusof & Azlan, 2023). As a result, Malaysia remains locked into a low-cost, unsustainable landfilling model despite long-term environmental costs (UNEP, 2021). Even with substantial allocations and green incentive programs including the Green Investment Tax Allowance, Green Income Tax Exemption and Green Technology Financing Scheme, perceptions of insufficient funding and discouraged investment persist, highlighting the need for more effective allocation, accessibility and market incentives to promote sustainable waste management (GreenTech Malaysia, 2022 & Rahman, 2023). Financial primarily affect perceived behavioral control. A lack of recycling bins, high operational costs or minimal access to collection centers makes pro-environmental behavior difficult to practice (Khamis, 2022). Economic burdens can also influence attitudes and cause individuals to view sustainable practices as an inconvenience rather than a moral or civic duty (World Bank, 2021).

Entrenched Socio-Cultural Attitudes

Sociocultural attitudes play a critical role in shaping public behavior toward waste in Malaysia, often contributing to persistent waste management challenges (Zukki, 2021). A widespread perception that waste management is the sole responsibility of municipal authorities, coupled with limited individual accountability and fosters behaviors such as laziness, refusal to pay collection fees and low civic engagement (Ghani, 2022; Ismail & Manaf, 2022). This mindset partly explains the persistent gap between awareness and participation as high knowledge of recycling programs does not translate into consistent practice (SWCorp, 2023). Societal syndromes such as “not in my backyard” (NIMBY), “locally unacceptable land use” (LULU) and “not over there either” (NOTE) further reflect collective resistance to essential waste infrastructure (UNEP, 2021). Cultural values and social influences. However, can positively shape behavior for example, religiosity has been shown to strengthen personal norms and intentions to reduce food waste (Aktas, 2018) while subjective norms from family and peers also support pro-environmental practices (Aschemann-Witzel, 2017). Information dissemination enhances moral obligation toward waste prevention (Azlan, 2023). Overall, entrenched socio-cultural attitudes undermine policy

enforcement and participation initiatives (Manaf, 2021), yet integrating culturally or religiously resonant messaging offers a potential avenue to foster intrinsic motivation and sustainable waste behaviors (Mokhtar, 2023).

Entrenched Socio-Cultural Attitudes shape both attitudes and subjective norms. The widespread belief that wastes management is solely a governmental responsibility undermines public ownership of the issue. This belief system discourages personal norms, limiting the emergence of internalized responsibility and intrinsic motivation (Ismail & Manaf, 2022). However, religious values such as anti-wastefulness in Islam or Buddhism can positively reinforce personal norms and make religiosity a potential leverage point (Aktas, 2018).

Several hypotheses developed in this study to determine the relationship between all the independents variables and dependent variable. The hypotheses are listed below:

H1: There is a significant relationship between public participationn and awareness with waste management resistance.

H1: There is a significant relationship between financial and waste management resistance.

H1: There is a significant relationship between socio-cultural attitudes and waste management resistance.

Conceptual Framework of the Study

Figure 1 presents the conceptual framework of the study, which proposes that public participation and awareness, financial constraints, and socio-cultural attitude are key factors influencing waste management resistance in Seremban. Public participation and awareness reflect the extent to which individuals understand and actively engage in sustainable waste management practices, while financial constraints represent economic barriers that may limit participation in such practices. Socio-cultural attitude refers to beliefs, values, norms, and community practices that may shape individuals' willingness to adopt appropriate waste management behaviours. These three factors are treated as the independent variables, whereas waste management resistance in Seremban represents the dependent variable. The framework therefore examines the extent to which each factor contributes to public resistance towards effective and sustainable waste management practices.

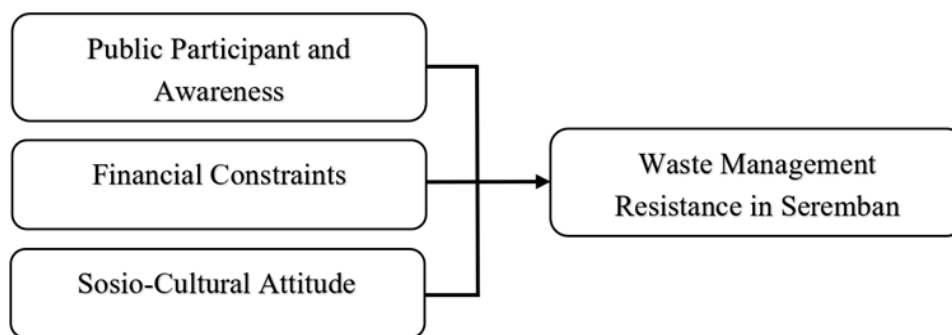


Figure 1: Conceptual Framework of the Study

METHODOLOGY

This study was conducted in Seremban, therefore the target population comprises residents of the state, encompassing a broad demographic spectrum ranging from young people, individuals under 18 to senior citizens aged 60 and above. In determining the sample size, this study adheres to the guidelines of Roscoe et al. (1975), suggesting a sample size range of 30 to 500 (Sekaran and Bougie, 2016). Accordingly, a sample size of 122 residents was conducted, where data will be collected via a questionnaire survey designed to capture the perceptions, attitudes and behaviours of the residents, thereby establishing the individual as the

unit of analysis. This sample size is further supported by Piper (2025) who highlights that 100 are sufficient to achieve a 95% confidence level with a 10% margin of error for large populations. Regarding the sampling technique, this study adopts a non-probabilistic approach, specifically convenience sampling, in which residents are selected based on their ease of access and availability, rather than through random selection or systematic criteria (Stratton, 2021). After securing the necessary permissions, the data collection process was initiated by disseminating the questionnaires via social media platforms, specifically Instagram and WhatsApp groups. The distribution strategy leveraged personal contacts, targeting friends and family members residing in Seremban. Additionally, the reach was expanded through academic circles, where students and lecturers were invited to participate.

Table 1 shows the results of the statistical validation test on the independent variables of this study such as financial constraints, public participation and awareness along with socio-cultural attitudes. In terms of reliability, the study instrument showed all variables have a good level of internal consistency with a Cronbach's Alpha value between 0.873 and 0.973, thus in line with study suggested by Pallant (2011). Since all these values exceeded the standard level of 0.70, this proves that the questionnaire used is stable and reliable for collecting data. In addition, in order to assess the distribution of the data, a normality test was also conducted on the study variables by performing Skewness and Kurtosis. Therefore, it indicates that the result was normally distributed as it is evidenced by negative skewness values (-0.598 to -0.880) and negative kurtosis (-0.349 to -0.638). George & Mallery (2010) confirm these fall within acceptable normality ranges (-2 to +2), where negative skewness shows left-tailed distributions with values concentrated right of the mean and negative kurtosis indicates platykurtic flatter shapes. Therefore, it is concluded that the study fulfilled the assumptions of normality and reliability tests, hence, the use of parametric statistical methods, namely Pearson correlation analysis, will be performed to check the relationship between factors of resistance to waste management in Seremban.

Table 1: Measurement of Variables, Normality Test and Reliability Test Results

Variables	Cronbach's Alpha	Skewness	Kurtosis
Financial Constraints	0.873	-0.598	-0.441
Public Participation and Awareness	0.973	-0.880	-0.638
Socio-Cultural Attitude	0.931	-0.810	-0.395
Waste Management Resistance	0.875	-0.806	-0.349

FINDINGS

Demographic Profiles

Referring to Table 2, for item age, out of 122 respondents, most age groups are 18-35 years and the least are below 18 years old. Next, for gender of the respondents, most of the respondents are female (n = 89, 73.0%) while the rest are male (n = 33, 27.0%). This is followed by ethnicity where most of them are Malay with 117 respondents (95.9%) and the balance is Bumiputera with 5 respondents (4.1%). Most of the respondents are single (n = 110, 90.2%) together with those who are married (n = 12, 9.8%). In addition, in terms of education level, most of the respondents obtained a Bachelor's Degree with 73 respondents (59.8%). For occupation status, most of the respondents is student (67.2%) followed by employed (25.4%). Then, for the monthly income, the number of respondents representing income range of RM1701 – RM5000 is the highest contributor (about 40% of the respondents in this study, while for the income range of RM5,001-RM9,000 and RM9,001 and above representing 13 respondents (10.7%) respectively. Finally, most respondents have resided in the urban area with 74 respondents (60.7%) followed by rural area with 48 respondents (39.3%).

Table 2: Demographic Profiles

Profile	Categories	Frequency (n)	Percentage (%)
Age	Below 18 years	4	3.3
	18-35 years	109	89.3
	36- 60 years	9	7.4
	60 and above	0	0
Sex/ Gender	Male	33	27.0
	Female	89	73.0
Ethnicity	Malay	117	95.9
	India	0	0
	Chinese	0	0
	Bumiputera	5	4.1
Marital Status	Single	110	90.2
	Married	12	9.8
	Divorced	0	0
Educational Level	Primary	0	0
	Secondary	15	12.3
	Diploma	29	23.8
	Bachelor's Degree	73	59.8
	Master	3	2.5
	PHD	1	0.8
	No Formal Education	1	0.8
Occupation	Employed	31	25.4
	Unemployed	2	1.6
	Self-Employed	7	5.7
	Student	82	67.2
	Other	0	0
Monthly Income	Below RM1,700	46	37.7
	RM1,701- RM5,000	50	41.0
	RM5,001- RM9,000	13	10.7
	RM9,001 and above	13	10.7
Location of Residence	Urban	74	60.7
	Rural	48	39.3

Pearson Correlation

Pearson correlation analysis was conducted to test the hypotheses and examine the relationships between the independent variables and waste management resistance as the dependent variable. As presented in Table 3, all three independent variables showed strong, positive, and statistically significant relationships with waste

management resistance. Among the variables, socio-cultural attitude demonstrated the strongest positive correlation with waste management resistance ($r = .878$, $p < .001$), followed by public participation and awareness ($r = .871$, $p < .001$) and financial constraints ($r = .818$, $p < .001$). These findings indicate that higher levels of socio-cultural barriers, limitations in public participation and awareness, and financial constraints are associated with greater resistance towards effective waste management practices in Seremban. Therefore, the null hypotheses of no significant relationship are rejected, while the corresponding alternative hypotheses are supported. Table 3 presents the result of Pearson correlation in this study.

Table 3: Correlation Analyses

Variables	Pearson correlation	Waste Management Resistance
Financial Constraints	Pearson Correlation	0.818**
	Sig (2-tailed)	0.000
Public Participation and Awareness	Pearson Correlation	0.871**
	Sig (2-tailed)	0.000
Socio-Cultural Attitudes	Pearson Correlation	0.878**
	Sig (2-tailed)	0.000

Multiple Regression

Multiple regression analysis was conducted to examine the influence of the independent variables on waste management resistance. As shown in Table 4, the regression model was statistically significant and explained 80.9% of the variance in waste management resistance. Among the predictors, socio-cultural attitude emerged as the most influential factor ($\beta = .378$, $p < .001$). This finding indicates that socio-cultural attitudes play an important role in shaping public resistance towards waste management practices in Seremban. Specifically, stronger socio-cultural barriers are associated with higher levels of waste management resistance. Therefore, efforts to promote positive cultural values, strengthen personal and social norms, and encourage environmentally responsible attitudes may help reduce public resistance and improve sustainable waste management practices in Seremban.

Table 4: Regression Analysis

Constructs	Beta (β)	Sig. (p)
Financial Constraints	0.188	0.025
Public Participation and Awareness	0.306	0.000
Socio-Cultural Attitudes	0.378	0.000
R ²	0.813	
Adjusted R ²	0.809	
Sig.	0.000	

DISCUSSION

Human interactions with the environment have always resulted in waste production. Amasuamo et al (2016) and Qian et al (2022), highlighted that at the first place, waste production along with management was not a major issue but not until people began living together in communities, and later on the population and purchasing power of people increases worldwide, thus, more goods are produced to meet the needs of people, thereby leading to the production of more waste (Qian et al., 2022; Amasuamo et al., 2016; Vergara et al., 2012). In fact, waste growth has become a critical global issue particularly in s which since the era of globalization come into existence, the world is facing constant environmental ramification due urbanization

and over-consumerism patterns as it could affect the stability of environmental and social life of a society (Raghu & Rodrigues., 2021) as these continuous flows of waste resulting from human activities itself. In a broader sense, waste management is a standard part of life as it is subject to a set of standards and norms whereby the environment within which people have established their waste disposal habits can vary significantly from place to place (Veliverronena & Davidstone., 2024). On top of that, studies on individual waste management practices have shown the underlying factors in defining waste-related behaviour and thus this study aims to examine the influence of financial, community engagement and cultural norms on public refusal to manage waste in Seremban.

This study demonstrated that financial, public participation and cultural norms significantly influenced in shaping waste management resistance among communities in Seremban. From a practical standpoint, this result demonstrates that as financial burden, community engagement and cultural norms increase, there is a corresponding rise in a waste management resistance too, which directly supports the overall hypothesis. Based on the results of multiple regression analysis, demonstrating that cultural norms are the most influential factor contributing to public refusal in managing waste. This aligns with the perspective on cultural norms that exert meaningful influence on waste management practices with items, particularly related to family values, religious beliefs, generational habits and social shame, highlighting that waste behavior is deeply embedded in cultural expectations. Other studies further affirm that psychologists recognize the underlying psychological mechanisms vary across societal and cultural contexts in shaping environmental behavior (Pong, 2024). Therefore, the study found that to be consistent with this literature, demonstrating that some cultural values align with environmental protection and thereby promote pro-environmental behaviour.

In another light, the study data established that cultural elements such as values, beliefs and norms impact waste generation practices. This is when individuals engage in waste generation and disposal is contingent on the interpretation ascribed to waste within their cultural milieu, as this indirectly implies that the generation and disposal of waste by individuals is influenced by the cultural, social and historical contexts that clarify their understanding along with interpretation of the waste (Fakunle, 2025). More deeply, the dominance of this cultural norm shows that 'coercion' or laws from the top may be less effective when compared to initiatives from within the community itself (Perry et al. 2021). Since this habit of littering is already intertwined with family values and a sense of 'shame' with neighbors, future strategies should focus on 're-norming' or forming new norms. Due to this, we can use the influence of community leaders, religious figures or local 'influencers' to make this practice of separating garbage a moral identity that is proud of in the community. Niu et al. (2023) support this approach by stating that social norms within groups can drive pro-environmental actions even when personally costly, by turning them into internalized community obligations rather than external mandates. Therefore, this study is applicable to underscore the pivotal role of cultural norms in shaping individuals' behaviour and attitudes towards waste management.

CONCLUSION, LIMITATIONS, AND FUTURE DIRECTIONS

The main goal of this research was to look at the factors that cause people not to manage their waste properly and to see if these factors could be identified. The factors that were found to be important were financial problems, low levels of involvement in waste management activities by the community and deep-rooted cultural beliefs and practices regarding waste management with culture being the strongest factor identified. The findings of this study, which are based on the Theory of Planned Behaviour and Norm Activation Models, demonstrate that the problems associated with improper waste management in Malaysia extend beyond the issues of policy and infrastructure the problem is much more likely to be due to people's intentions to behave a certain way to manage their waste effectively, their perceived ability to manage their waste and their moral beliefs about managing their waste, all shaped by their social and cultural environments. The findings also highlight the cyclical nature of factors that contribute to resistance to waste management as financial limitations restrict a person's ability to manage their waste sustainably, low community involvement diminishes a person's desire to take on community responsibility for managing their waste and cultural beliefs that view waste management as simply a responsibility of the government diminish a person's responsibility for managing their own waste.

The study has several limitations that should be considered when interpreting the findings. First, its cross-sectional design limits the ability to establish causal relationships among the variables, while the use of convenience sampling may restrict the generalisability of the findings. Second, reliance on self-reported data may introduce social desirability and common method biases, as respondents may overstate their environmentally responsible behaviours or awareness to conform to perceived social expectations (Podsakoff et al., 2003). Consequently, the reported levels of waste management practices and environmental awareness may not fully reflect actual behaviour. Furthermore, the questionnaire-based approach provides limited insight into deeper cultural beliefs, moral considerations, and informal social norms that may shape waste management behaviour, particularly within Malaysia's collectivist context (Ajzen, 2020). The sample, which consisted predominantly of younger and urban respondents, may also underrepresent groups with different socio-economic conditions, access to waste management services, and culturally shaped perceptions of environmental responsibility (Mokhtar, 2023). Finally, the study did not extensively examine institutional and governance factors, such as consistency of enforcement, service reliability, and accessibility of waste management facilities, which may influence behavioural intentions and perceived behavioural control (Manaf, 2021). Therefore, future research should employ longitudinal or mixed-method designs, more representative samples, and incorporate institutional factors to provide a more comprehensive understanding of public resistance to sustainable waste management practices.

Future studies should take a longitudinal methodology to capture how attitudes, intentions and behaviours develop over time. Doing so will improve the ability to establish stronger causal links between financial limitations, cultural beliefs and participation in community activities (Ajzen, 2020). Employing a mixed-methods approach to focus groups or qualitative interviews will help provide greater context and insight into how cultural norms, moral responsibilities and social pressures shape the ways manage their waste (Schultz, 2014). Future researchers should also expand their sample diversity, particularly in rural communities, older individuals and those of lower-income backgrounds in order to broaden the implications and applicability to policy decisions (World Bank, 2021). The interrelationships among organisations within a community, individual social capital and the physical environment warrant additional attention in terms of how the structural constraints to limited services and financial barriers will impact the waste management performance of a community strong ties between communities could mitigate some of the negative effects associated with these constraints (UNEP, 2021). Additional examination of how community organisations, religious leaders and local cultural leaders could serve as agents for promoting improved waste management behaviours would provide ideas for developing comprehensive and effective waste management strategies in Seremban and other areas that have socio-cultural similarities (Ismail & Manaf, 2022).

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