Journal of Natural Resources and Environmental Management
http://dx.doi.org/10.29244/jpsl.15.5.751

RESEARCH ARTICLE

OPEN ACCESS

Check for updates

Understanding Household Waste Management: An Application of The Theory of Planned Behavior

Pitri Yandri[a], Uki Masduki[a], Nur Aini[a], Siti Irma Suryani[b], Isnan Hari Mardika[a], Aldi Fathurahman[a], Kardian[a]

[a] Faculty of Economics and Business, Institut Teknologi & Bisnis Ahmad Dahlan, Jakarta, 15419, Indonesia
[b] Planning, Development, Research, and Development Agency, Tangerang Selatan Municipality, 15417, Indonesia

Article History
Received 7 May 2024
Revised 14 July 2024
Accepted 1 August 2024

Keywords
intention, separation behavior, structural equation modeling, theory of planned behavior, waste facilities

ABSTRACT

The field of waste research has advanced significantly over the past fifteen years, encompassing both human behavior and the physical aspects of waste. The theory of planned behavior (TPB) has been extensively applied to explain the phenomena and behavioral patterns associated with waste management. Accordingly, the objective of this study is to apply the TPB to deepen our understanding of how households manage waste which is a critical step toward developing effective strategies and improving the quality of existing policies and program interventions. Conducted in South Tangerang, Banten Province, this study employed Likert-scale questionnaires and selected household samples based on specific criteria. Using structural equation modeling with SmartPLS, our analysis reveals that: (1) perceived behavioral control significantly influences intentions and actions related to waste management; (2) subjective norms have a positive but statistically insignificant effect; (3) intention significantly influences behavior; and (4) attitudes have a positive but insignificant effect. These findings have policy implications, particularly in encouraging the development of specialized waste management facilities and promoting community involvement in residential waste practices.

Introduction

Waste management programs are critical for Indonesia's present and future development objectives. This stems from Indonesia's commitment to a global consensus that seeks to achieve sustainable development by 2023. The Sustainable Development Goals (SDGs) framework specifically addresses waste, particularly within the framework of the environmental development pillar. Waste indicators are incorporated explicitly into the twelfth objective, which concerns ensuring sustainable production and consumption patterns, and the eleventh goal, promoting inclusive, safe, resilient, and sustainable communities and settlements. The objectives delineate three primary indicators: (1) the proportion of urban waste that is efficiently handled, (2) the number of green cities actively engaged in the development and implementation of ecologically sustainable waste practices in metropolitan areas, and (3) the number of landfills engaged in recycling initiatives.

However, Indonesia is experiencing significant challenges in achieving the defined goals. In 2022, the Ministry of Environment and Forestry of the Republic of Indonesia reported that 21.1 million tons of waste had been accumulated in landfills. Of the entire amount of waste the country generates, 13.9 million tons (65.71 percent) are managed effectively, while 7.2 million tons (34.29 percent) are not efficiently handled. Furthermore, food waste accounted for a significant portion of household waste, accounting for 44.44 percent of the total waste (Figures 1 and 2). These data present an initial example of the significant challenges faced in achieving SDG targets.

Corresponding Author: Pitri Yandri p.yandri@gmail.com Faculty of Economics and Business, Institut Teknologi & Bisnis Ahmad Dahlan, Jakarta, Indonesia.

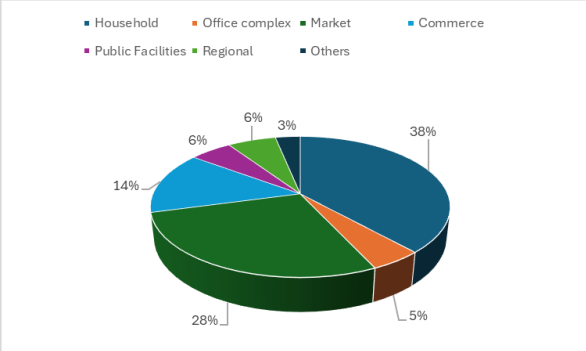

Figure 1. Waste composition based on the source of waste in Indonesia. Source: [1].

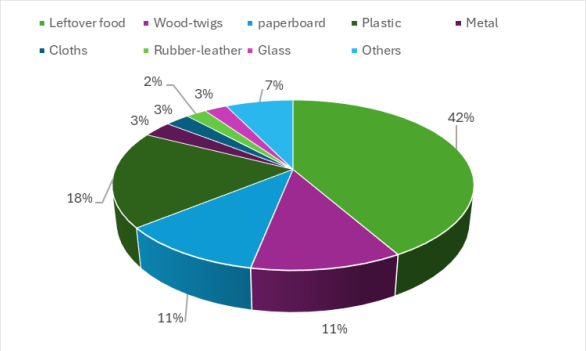

Figure 2. Waste composition based on the type of waste in Indonesia. Source: [2].

Our study conducted in Tangerang Selatan Municipality reveals that the daily quantity of household waste is 800 tons (as of 2022), translating to an annual total of 292,000 tons. When distributed among 445,570 households [3], each household contributes 1.8 kg of waste per day. Households emerged as the primary contributors to the overall waste in Tangerang Selatan Municipality, accounting for 93.03 percent of the total waste production in 2022 (Figure 3). Food waste constituted the majority (35.65 percent (Figure 4)).

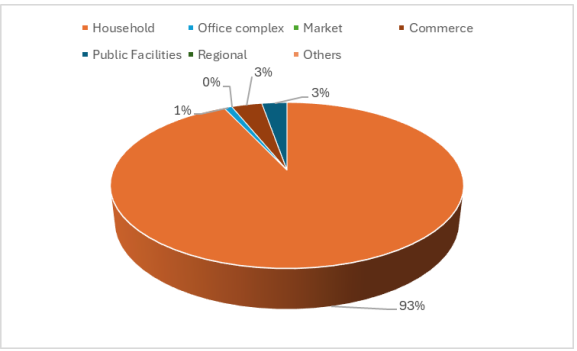

Figure 3. Waste composition based on the source of waste in Tangerang Selatan Municipality. Source: [1].

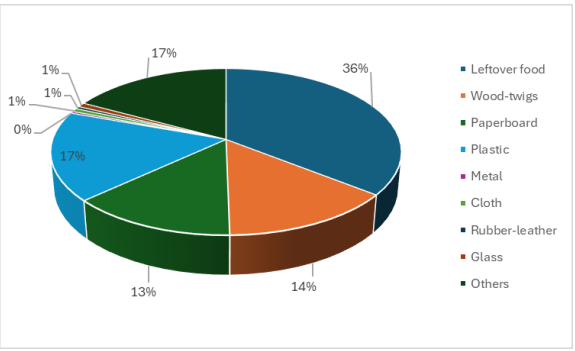

Figure 4. Waste composition based on the type of waste in Tangerang Selatan Municipality. Source: [2].

In pursuing effective waste management, the Tangerang Selatan Municipality Government instituted regulations to govern this endeavor. Regional Regulation No. 13/2019, which amends Regional Regulation No. 3/2013, specifically addresses waste management. This regulatory framework includes provisions outlining sanctions for entities contravening the stipulated regulations. Furthermore, Tangerang Selatan Municipality has already implemented Head of Municipal Regulation Number 83 of 2022, specifically focusing on reducing plastic waste. Collectively, these regulations strive to enhance the management of waste-related issues in the region. Operationally, since June 2012, the Tangerang Selatan Municipality Government, through its Environmental Office, has been utilizing the Cipeucang Landfill as part of its program. Spanning 2.5 hectares with a height of 16 m, the landfill boasts a daily capacity of 300 tons, whereas the actual waste intake is 400 tons daily. However, the information gathered from diverse sources highlights various landfill challenges, including overcapacity, olfactory emissions affecting nearby residents, noise pollution from transport trucks, and groundwater contamination [4–6].

Given the current conditions of landfills, community involvement in waste management is necessary. Research findings suggest that implementing community-based recycling is a more sustainable waste management strategy [7]. Additionally, a study conducted by Wan et al. [8] Hong Kong emphasizes the importance of coherently aligning waste management frameworks to garner increased public support and optimize the effectiveness of policies in this domain. Furthermore, the community-based waste management framework receives backing from regulatory clarity, specifically outlined in the Presidential Decree of the Republic of Indonesia Number 97 of 2017, which addresses National Policies and Strategies for Household Waste Management and Similar Household Waste. This decree articulates the government's waste management policy, which aims to reduce and manage household waste and similar types by 30 percent of

landfill volume by 2025. This implies that 30 percent of household waste will be slated to be addressed at the community level by 2025, with the remaining 70 percent managed by the government through landfill disposal. A similar division of responsibilities in waste management between the government and citizens has also been implemented in South Africa [9].

Additionally, the government enacted Regulation 81 of 2021, addressing the management of households and similar household waste. This regulation comprehensively governs several vital aspects, including (1) policies and strategies related to waste management, (2) execution of waste management, (3) compensation mechanisms, (4) advancement and utilization of technology, (5) information systems, (6) societal role, and (7) coaching initiatives. Nevertheless, the challenge lies in the fact that household-level management endeavors to address the issue of limited community awareness regarding waste management, as indicated by Nurmaisyah and Susilawati [10]. A study by Harun [11] in Hegarmanah Village, Bandung, found that 71 percent of respondents demonstrated suboptimal waste management behaviors, particularly in sorting. These findings underscore the importance of public education regarding proper waste handling, as instances suggest a positive correlation between people's knowledge and active participation [12].

However, specific communities have implemented waste sorting practices in Bali [13]. Notably, higher levels of waste sorting within households correlate with a diminished volume of waste in landfills [14]. This alleviates the strain on landfills and mitigates issues such as odor pollution, noise pollution from transport trucks, and groundwater contamination. From a regulatory standpoint, the success of sorting practices aligns with the waste reduction objectives outlined in Indonesian Republic Presidential Regulation Number 97 of 2017 on national policies and strategies for household waste management and similar household waste, thereby contributing organically to attaining SDG targets. Considering this background information, our study attempts to investigate and understand how households in Tangerang Selatan Municipality handle the waste they generate. The investigation of household waste-handling practices is a critical stage that offers vital information for designing effective policies and improving the effectiveness of current policy frameworks. Numerous studies have addressed community behavior in waste management through the theory of planned behavior (TPB). However, these studies resulted in varied conclusions, leading to inconsistent findings. These variations in knowledge about how citizens behave regarding waste management lead to uneven global policy responses inside the borders of specific nations.

Materials and Methods

The research used an observational design. The design was followed using a multivariate descriptive-quantitative approach with data collection instruments in the form of questionnaires. The questionnaire answers were ordinally sorted (Likert Scale) from strongly agree (weight 5) to strongly disagree (weight 1). Purposive sampling was used to guide the collection of the household samples. The criteria for household samples were as follows: (1) domiciled in Tangerang Selatan Municipality, and (2) at least 18 years old, with a maximum age of 70 years. As previously discussed, this region faces a significant waste management challenge that is predominantly driven by household waste generation (Figure 3). Concurrently, local governments have implemented various policies to mitigate this issue. Given these factors, this region is highly pertinent to scholarly investigations. In this study, we used the framework of Ajzen's [15]. The theory of Planned Behavior consists of five variables. Three variables were assumed to affect behavior: attitudes, subjective norms, and perceived behavioral control. One variable, intention, is considered a moderating variable between the influencing and affected variables. Moreover, one variable, behavior, was assumed to be the affected variable. We divided these variables into the indicators expressed in the questionnaire. Complete information on all the indicators is presented in the appendix.

We delivered up to 50 printed questionnaires, in addition to online Google Forms questionnaires, as part of the data collection procedure. Following the results of the 50 printed questionnaires, 47 respondents returned the questionnaires, indicating that three could not be used for the analysis. We collected 41 completed questionnaires from the results of the online questionnaire. However, two respondents were excluded from the study because they did not meet the eligibility criteria and were younger than 18 years of age. Ultimately, 86 respondents were included in the final analysis. With a structural model (described in mathematical expression 2), the analysis technique used a variant-based Structural Equation Model (SEM PLS). The primary advantage of SEM PLS is that it enables the use of small sample sizes [16–18]. SmartPLS 4 for Microsoft Windows was used for data analysis and tabulation in Microsoft Excel.

$$H_j = \Sigma_i \beta_{ji} \eta_i + \Sigma_i \gamma_{jb} \xi b + \varsigma_j \quad (1)$$

$$x = \lambda x \xi + \varepsilon x \,/\, y = \lambda y \eta + \varepsilon y \quad (2)$$

Model (1) represents the mathematical formulation of the inner model, in which i and b denote the index range along *i* and *b*, *j* indicates the number of endogenous latent variables, β_{ji} is the path coefficient linking endogenous latent variables (η) to other endogenous variables (η), γ_{jb} is the path coefficient linking endogenous latent variables (η) to exogenous variables (ξ), *and ζ* represents the measurement error. Model (2) is thematical formulation of exogenous latent variables (ξ), y is an indicator of endogenous latent variables (η), λ*y* constitutes the loading matrices that describe the relationships between latent variables and their respective indicators, γ_{jb} is the path coefficient connecting endogenous latent variables (η) to other exogenous variables (ξ), and ζ denotes the inner residual variable. The procedures required in the PLS-SEM analysis process are as follows: (1) development of theoretical models, indicators, and constructs; (2) collection of field data and questionnaires; (3) tabulating the results; (4) creation of a path diagram model based on the data collected; (5) evaluation model based on CR and AVE values; and (6) analysis of the findings if the model produces valuable data. Table 1 presents the model analysis and evaluation results.

Table 1. PLS-SEM Model evaluation criteria.

Numb	Criterion	Threshold value
A	Reflective measurement model	
1	Internal consistency reliability (CR) should be more than 0.70, while 0.60 to 0.70 is still appropriate for exploratory research.	≥ 0.6
2	Indicator reliability: loadings of the indicator are higher than 0.70. However, 0.4 is still appropriate for exploratory study.	≥ 0.4
3	Convergent validity: Average Variance Extracted (AVE) ≥ 0.50.	≥ 0.5
4	Validity of discriminants: According to the Fornell-Larcker Criterion, each construct's AVE is higher than the highest squared correlation of the other constructs. Loading indicator is greater than cross loading.	Based on standards
B	Structural model	
1	The R^2 for endogenous variable constructs is 0.75 (substantial), 0.50 (moderate), or 0.25 (weak).	According to the result
2	The path coefficient is significant. For the two-sided test, the critical t-statistic values are 1.65 (significance level = 10%), 1.96 (significance level = 5%), and 2.58 (significance level = 1%).	According to the result
3	Predictive relevance: cross-validated redundancy with omission distance (d) value between 5–10, Q^2 value greater than 0.	According to the result

Results

Tangerang Selatan Municipality is a suburban region located outside Metropolitan Jakarta. In this region, the population is growing at an annual rate of 3.56 percent. Residential land accounts for 79 percent of the total land area. Residential areas, such as housing complexes developed by private developers, characterize the settlements in Tangerang Selatan Municipality [19–22], and the remaining area comprises small-scale agricultural land, public service facilities, industry, trade/service land, and uninhabited areas. In this study, we present residential location information as unique details that distinguish it from demographic groupings in other regions of Indonesia, considering both the demographic and spatial contexts. Comprehensive demographic information of the respondents is presented in Table 2.

Examining the validity and reliability of the data was necessary before testing the relationships between the variables in this study. Model evaluation was employed to test whether the data fit well. This test was conducted by examining the outer model or measurement model. If the loading factor value was greater than or equal to 0.4, the t-statistic was more significant than 1.6, or the p-value was less than 0.05. The model is generally considered to have strong validity and can reflect the latent variables. Each indicator may be valid and reliable in terms of the variables, based on the results of the outer loading test. The loading factor value was at least 0.4, the p-value was less than 0.05, and the t-statistic was greater than 1.6. The inner model of a good fit or each latent-variable construct must subsequently be tested. This test aims to confirm the validity and reliability of constructs or variables. This condition can be satisfied if the minimum AVE and CR values satisfy the criteria. If the AVE value is more significant than 0.5, and the CR value is more significant than 0.6, the latent constructs or variables have good validity and reliability. Table 3 presents the test results for the CR and AVE models.

Table 2. Respondent demographics.

Profile/Identity	Category	%
Status in the family	Head of family/husband	59.1
	Wife	27.3
	Child	13.6
The settlements	Housing complex	52.3
	Non-housing complex	47.7
Status of residence	Own residence	45.5
	Rent housing	35.2
	Parents	19.3
Education attainment	Elementary school	1.1
	Junior high school	1.1
	Senior high school	43.2
	Diploma degree	10.2
	Bachelor's degree	37.5
	Master degree	5.7
	Doctoral degree	1.1
Employment status	Civil servant	3.4
	Private officers	14.8
	Entrepreneur	8
	Others	77.2
Age (in years)	18–24	54.5
	25–44	19.3
	45–59	23.9
	60–75	0
Number of members in the family (in people)	1	3.4
	2	6.8
	3	9.1
	4	31.8
	5	34.1
	> 5	14.8
Family income (IDR/month)	Less than1,200,000	26.1
	1,200,000–4,551,451	48.9
	Above 4,551,451	25

Table 3. CR and AVE result.

Variables	CR	AVE	Annotation
Attitude toward behavior	0.900	0.5	
Subjective norm	0.956	0.7	
Perceived behavioral control	0.961	0.6	Reliable
Intention	0.963	0.7	
Behavior	0.925	0.6	

The path analysis results indicated that the intention-to-behavior coefficient was 0.859 (p = 0.000). It shows how an individual's purpose in doing something affects their conduct. In behavioral research, intention is the will to do something followed by action. In addition, impulses lead to intention. Regarding the behavior associated with treating home waste, the community will participate or be active in managing waste, such as separating organic and non-organic waste, if such actions are intended (Table 4).

Furthermore, the behavioral attitudes toward intention test discovered a coefficient value of 0.23 (p-value = 0.065). According to the test results, it can be drawn that attitudes regarding behavior influence intentions to manage household waste in an advantageous but not significant sense. It also indicates that public perceptions and knowledge, such as beliefs about the effects of waste piles or generation, or the advantages of managing household waste, are no longer utilized as a barometer of how effectively the community handles waste at home. In general, individuals are mindful of the adverse effects of improper domestic waste management on the environment. We argue that today's knowledge needs to be improved to encourage individuals to take interest in waste management. Individuals can comprehend information about waste management because of their education and financial stability [23]. This is closely related to the profile of respondents who have obtained a reasonably high education level. Thus, promotional interventions that are more attractive are required to have a more positive attitude toward the waste issue.

Table 4. Path analysis result.

Relationships between variables	Path coefficient	Sample mean	Standard deviation	T-statistics	P-values
Attitude toward behavior → intention	0.231	0.238	0.125	1.846	0.065
Intention → behavior	0.859	0.861	0.032	27.019	0.000
Perceived behavioral control → intention	0.609	0.602	0.138	4.423	0.000
Subjective norm → intention	0.102	0.102	0.124	0.823	0.411

Subjective norms on the intention to manage household waste in a manner beneficial to others were also insignificant. The coefficient had a value of 0.10 (p-value = 0.411). This indicates that while subjective norms affect intentions and behavior, it is not statistically significant. Subjective norms in the context of SDGs refer to an individual's behavior that is influenced or driven by the behavior of others. This study did not show that community activities to manage household waste result from witnessing others following suit. This correlates with increased mobility and more exclusive and individualist metropolitan communities. Self-interest and ignorant behaviors are found among people with an excellent quality of life [24]. Therefore, following the example of others (who are not in the profession) does not encourage doing so. In this instance, they acted differently.

From a theoretical perspective, subjective norms are rooted in two main elements: normative beliefs and the motivation to comply [15]. Normative beliefs may be influenced by religion, which shapes an individual's moral, ethical, and social framework. This issue will be further discussed in the discussion section. Compared with attitudes and subjective norms, perceptions of behavioral control significantly influence individuals' intentions and actions regarding household waste management. This is evidenced by the results indicating a coefficient value of 0.60 for the attitude variable toward behavior (p-value = 4.423 and p-value = 0.000). The perception of behavioral control is a crucial factor motivating individuals to engage in waste management practices, mainly when supported by knowledge, skills, and access to adequate facilities. These facilities primarily include community-based waste management facilities like organic and inorganic waste sorting centers. Further details regarding the path coefficients from the measurement results are provided in Figure 5.

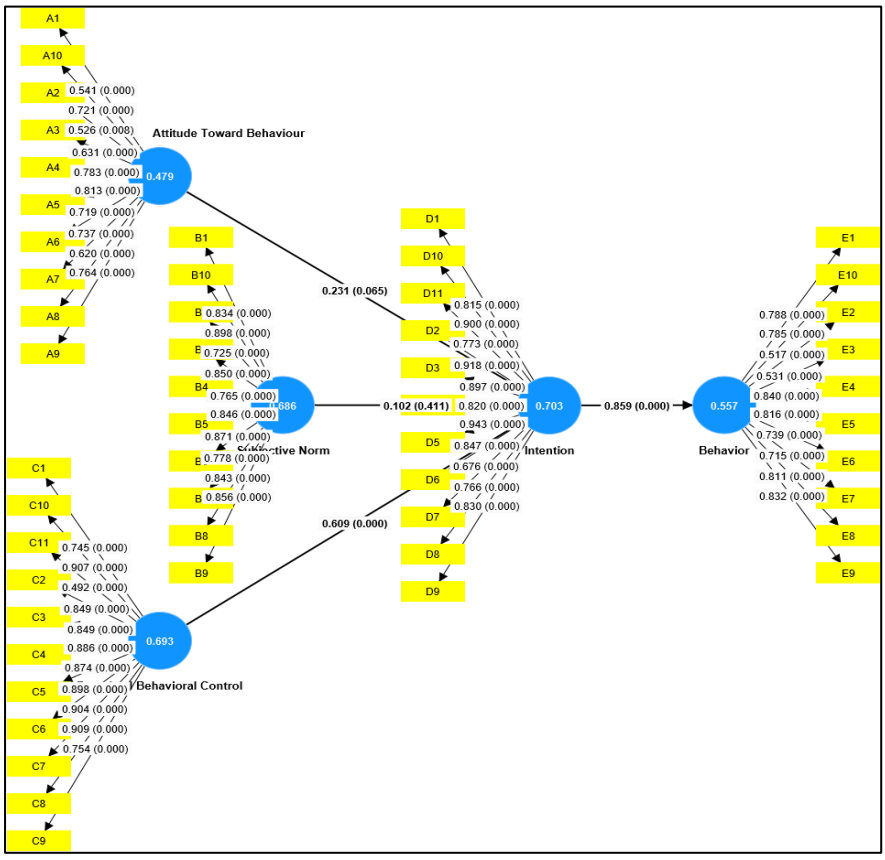

Figure 5. Path diagram result of household behavior in handling waste.

Discussion

Numerous studies have explored community behavior regarding waste management through the theory of planned behavior. However, these studies have yielded varied conclusions, resulting in inconsistencies across findings. The variations in knowledge about how citizens behave concerning waste management lead to uneven policy responses on a global scale, as well as within the borders of specific nations. In this regard, we have developed an explanatory model of how individuals manage the waste they generate daily. Using the TPB as presented in the Structural Equation Model (Figure 5), we identified several unique findings in the case under study. In the model illustrated in Figure 5, we hypothesize that individuals' waste management behavior is influenced by attitude toward the behavior, subjective norms, and perceived behavioral control. At the same time, intention serves as a mediating variable linking these three constructs.

How does the intention to handle waste transform into an action? In this particular case, people realize the importance of preserving a clean lifestyle. Individuals are psychologically attracted to cleanliness, regardless of their socioeconomic level (rich or poor), educational attainment, or belief systems. As mentioned above, the statement has its foundation in social norms indoctrinated in children from elementary school, including the belief that "cleanliness is part of faith" [25]. Subsequently, the application of these values transforms into a culture. At this point, culture influences behavior [26,27]. Consequently, they believed that handling waste is vital for maintaining sanitary practices. According to Yandri et al. [28], people in Indonesia's hygiene practices are influenced by their religious beliefs and, at the same time, health and education [24,25].

The research findings indicate that knowledge about the environmental or health benefits of waste management can motivate individuals to manage household waste. One's actions in managing household waste are also influenced by subjective norms, such as encouragement from or the similar actions of others, including family members, neighbors, or community members. This study also highlights the importance of perceived behavioral control in influencing household waste management through behavioral intention. Individuals are more likely to manage household waste if they perceive themselves as having the capability and access to adequate facilities. However, when comparing several recent studies that employed the TPB to explain individuals' waste management behaviour. It was found that subjective norm is significantly related to attitude and perceived behavioral control. Moreover, attitude has a positive relationship with behavioral intention, whereas the relationship between perceived behavioral control and behavioral intention is not significant. Finally, personal norm has a significant relationship with behavioral intention [29,30]. Another study conducted by Xu et al. [31] reported that subjective norm was the major factor in predicting participation intention, followed by risk perception and attitude.

The findings of the TPBs approach analysis of community behavior in household waste management may have implications for designing policies that encourage community involvement in waste management, such as providing infrastructure and facilities (e.g., places or tools for managing organic and inorganic waste), expanding the reach of 3R landfills and waste management communities, making coordinators for household waste management available, and enhancing community knowledge and skills in managing waste: educating individuals how to make eco enzymes, maggots, bio-pore infiltration hole, and other activities. The findings and discussion of this study can also serve as the basis for policy formulation by the government. For instance, perceived behavioral control plays a significant role in shaping individuals' intentions to manage household waste. Based on these findings, government policies should not only focus on providing physical infrastructure but also address the psychological aspects of the community. Behavior-based approaches have proven effective in improving public compliance. The government should implement education and communication strategies grounded in behavioral nudging principles, such as visual reminders on waste bins and social incentives like environmental awareness stickers for homes or neighborhoods.

Each of these elements is an incentive to encourage individuals to improve how they manage their waste. In theory, incentives constitute anything that encourages individuals to modify their behavior as they want [32]. The Tangerang Selatan Municipality Government established waste governance goals, and the expected improvements align with those goals. Numerous studies have addressed community behavior regarding waste management through the TPB. However, these studies resulted in varied conclusions, leading to inconsistent findings. These variations in knowledge about how citizens behave regarding waste management lead to uneven global policy responses within the borders of specific nations.

Conclusion

Our study is based on the TPB, which scholars frequently cite to explain people's waste management practices. According to our studies, individual objectives greatly influence how they manage waste. However, a critical question emerges: How could these intentions generate actual behavior? Individuals acknowledge the value of maintaining clean materials in this context as a fundamental component of daily living. The perennial saying, "cleanliness is part of faith", has remained integral to societal values for decades. It encourages this notion from an early age.

We find that (1) the perception of behavior control has a significant influence on a person's intentions and actions in managing household waste; (2) subjective norms have an insignificant positive effect on community behavior in managing waste; (3) intention has a significant positive effect in shaping community behavior in managing waste; (4) attitudes have a positive but insignificant effect on community behavior in managing waste. However, a key factor affecting waste management behaviors is the perception of behavioral control; individuals are more likely to participate in waste management activities when they have access to adequate resources, facilities, knowledge, and skills. The TPB framework can be employed to examine household waste management practices in the community and provide insights for creating policies that encourage community participation in handling waste. It can be achieved by providing tailored, community-based waste management facilities.

Author Contributions

PY: Conceptualization, Methodology, Writing – original draft, Writing – review & editing; **UM**: Software, Writing – review & editing, Formal Analysis; **NA**: Conceptualization, Methodology; **SIS**: Supervision; **IHM**: Writing – review & editing; **AF**: Writing – review & editing; and **K**: Data Curation.

Conflicts of Interest

There are no conflicts to declare.

Acknowledgments

The article is part of a research project entitled "Study of Household Waste Management in Reducing Landfill in Tangerang Selatan Municipality" Planning, Development, Research, and Development Agency Tangerang Selatan Municipality for fiscal year 2023. The authors would like to thank the local government for financing the research and any parties who have contributed to it. There is no conflict of interest in this research.

References

1. Kementerian Lingkungan Hidup dan Kehutanan. Sistem Informasi Pengelolaan Sampah Nasional: Komposisi Sampah Berdasarkan Sumber Sampah. 2024. Available online: https://sipsn.kemenlh.go.id/sipsn/public/data/sumber (accessed on 1 September 2025).
2. Kementerian Lingkungan Hidup dan Kehutanan. Sistem Informasi Pengelolaan Sampah Nasional: Komposisi Sampah Berdasarkan Jenis Sampah. 2024. Available online: https://sipsn.kemenlh.go.id/sipsn/public/data/komposisi (accessed on 1 September 2025).
3. BPS (Badan Pusat Statistik) Kota Tangerang Selatan. *Kota Tangerang Selatan Dalam Angka 2025*; BPS: Kota Tangerang Selatan, ID, 2025;
4. Tunggadewi, T.; Akbar, U.U. Analisis Willingness to Accept Dana Kompensasi Masyarakat Sekitar Tempat Pemrosesan Akhir (TPA) Cipeucang. *J. Educ. Dev.* **2023**, *11*, 444–449, doi:10.37081/ed.v11i2.4644.
5. Devaranti, S.; Khaerudin, M.R.; Lita, F.N.; Alamsyah, M.R.; Anggara, M.Y.; Kurniawan, I.A. Kebijakan Pengelolaan Sampah di Kabupaten Tangerang dan Tangerang Selatan. *J. Pendidik. Sej. dan Ris. Sos. Hum.* **2023**, *3*, 98–107.
6. Putri, A.D.; Oktavia, F.K. Evaluasi Kebijakan Dan Strategi Pengelolaan Sampah di Kota Tangerang Selatan. *Syntax Idea* **2023**, *5*, 1821–1836.

7. Moh, Y.C.; Manaf, L.A. Overview of household solid waste recycling policy status and challenges in Malaysia. *Resour. Conserv. Recycl.* **2014**, *82*, 50–61, doi:10.1016/j.resconrec.2013.11.004.
8. Wan, C.; Shen, G.Q.; Choi, S. Differential public support for waste management policy: The case of Hong Kong. *J. Clean. Prod.* **2018**, *175*, 477–488, doi:10.1016/j.jclepro.2017.12.060
9. Botha, M.; Terblanche, S.E.; Luies, R. A decision support system for business development around decentralised waste utilisation in South Africa. *Clean. Environ. Syst.* **2022**, *7*, 100101, doi:10.1016/j.cesys.2022.100101.
10. Nurmaisyah, F.; Susilawati, S. Pengetahuan Masyarakat dalam Pengelolaan Sampah Rumah Tangga di Kecamatan Percut Sei Tuan. *PubHealth J. Kesehat. Masy.* **2022**, *1*, 91–96, doi:10.56211/pubhealth.v1i1.47.
11. Harun, H. Gambaran Pengetahuan dan Perilaku Masyarakat Dalam Proses Pemilahan Sampah Rumah Tangga di Desa Hegarmanah. *J. Apl. Ipteks untuk Masy.* **2017**, *6*, 86–88.
12. Hendrati, N. Persepsi Masyarakat Kota Surabaya Terhadap Bank Sampah Induk. *J. Econ. Dev. Issues* **2018**, *1*, 12–25, doi:10.33005/jedi.v1i2.16.
13. Sukerti, N.L.G.; Sudarma, I.M.; Pujaastawa, I.B.G. Perilaku Masyarakat Dalam Pengelolaan Sampah dan Faktor-Faktor yang Mempengaruhi di Kecamatan Denpasar Timur Kota Denpasar, Provinsi Bali. *ECOTROPHIC J. Ilmu Lingkung.* **2017**, *11*, 148–155, doi:10.24843/ejes.2017.v11.i02.p05.
14. Razali, F.; Daud, D.; Weng-Wai, C.; Jiram, W.R.A. Waste separation at source behaviour among Malaysian households: The Theory of Planned Behaviour with moral norm. *J. Clean. Prod.* **2020**, *271*, 122025, doi:10.1016/j.jclepro.2020.122025.
15. Ajzen, I. The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes* **1991**, *50*, 179–211, doi:https://doi.org/10.1016/0749-5978(91)90020-T.
16. Hair, J.F.; Sarstedt, M.; Hopkins, L.; Kuppelwieser, V.G. Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *Eur. Bus. Rev.* **2014**, *26*, 106–121, doi:10.1108/EBR-10-2013-0128.
17. Yahya, A.; Affandy, A.; Narimawati, U. Pengembangan UMKM Melalui Pemanfaatan Model Layanan Fintech Syariah Ammana.id. *is Best: Account. Inf. Syst. Inf. Technol. Bus. Enterp.***2020**; *5*, 106–120, doi:10.34010/aisthebest.v5i2.3049.
18. Sarwono, J.; Narimawati, U. *Membuat Skripsi, Tesis, dan Disertasi Dengan Partial Least Square*; Penerbit Andi: Yogyakarta, ID, 2015;
19. Yandri, P. Residential Area and Income Inequality in Suburban Indonesia the important moment of changing in the pattern of development in Indonesia at least started in 2001. *Indonesian Journal of Geography* **2014**, *45*, 69–77.
20. Yandri, P. Conflicts and Segregation of Housing Cluster Communities and Its Surrounding. *J. Kependud. Indones.* **2015**, *10*, 75–88, doi:10.14203/jki.v10i2.68.
21. Yandri, P.; Priyarsono, D.; Fauzi, A.; Dharmawan, A.H. Pengembangan kriteria kawasan perumahan berkelanjutan di daerah suburban Indonesia.In Prosiding Seminar Nasional Seri 7, Yogyakarta, ID, 22 November 2017.
22. Yandri, P.; Priyarsono, D.S.; Fauzi, A.; Dharmawan, A.H. Formulating and Validating Sustainable Residential Area Indicators in Suburban Metropolitan Jakarta. *Int. Rev. Spat. Plan. Sustain. Dev.* **2021**, *9*, 82–102, doi:10.14246/irspsd.9.3_82.
23. Brotosusilo, A.; Handayani, D. Dataset on waste management behaviors of urban citizens in large cities of Indonesia. *Data in Brief* **2020**, *32*, 106053, doi:10.1016/j.dib.2020.106053.
24. Hariyanto, A. Implementasi Konsep Kebersihan Sebagian Daripada Iman di Kalangan Siswa MAN Lamongan. *Kajian Moral dan Kewarganegaraan* **2019,** *7*, 79–90.
25. Mujahidin, E.; Bahagia; Wibowo, R.; Dipa, L.Z.N.; Ningsih, S.R. Nilai Tradisi Bersih-Bersih di Lingkungan Sosial. *J. Pendidik. Tambusai* **2021**, *5*, 2194–2206
26. Cronk, L. Culture's influence on behavior: Steps toward a theory. *Evol. Behav. Sci.* **2017**, *11*, 36–52.
27. Yandri, P.; Budi, S.; Putri, I.A.P. Waste sadaqah: a new community-based waste management practice in Java, Indonesia. *Sustain. Sci. Pract. Policy* **2023**, *19*, 2212510, doi:10.1080/15487733.2023.2212510.

28. Yandri, P.; Budi, S.; Putri, I.A.P. Waste sadaqah: a new community-based waste management practice in Java, Indonesia. *Sustain. Sci. Pract. Policy* **2023**, *19*, 2212510, doi:10.1080/15487733.2023.2212510
29. Utomo, W.A.; Pasaribu, H.K.; Rambe, MF. Pengaruh Kepemimpinan dan Motivasi Kerja terhadap Kinerja Pegawai Dimediasi oleh Disiplin Kerja Pada Dinas Pencegah dan Pemadam Kebakaran Kota Medan. *PIONIR J. Pendidik.* **2021**, *10*, 125–140.
30. Arkorful, V.E.; Shuliang, Z.; Lugu, B.K. Investigating household waste separation behavior: the salience of an integrated norm activation model and the theory of planned behavior. *Journal of Environmental Planning and Management* **2022**, *66*, 2195–2221.
31. Xu, Z.; Shan, J.; Li, J.; Zhang, W. Extending the theory of planned behavior to predict public participation behavior in air pollution control: Beijing, China. *Journal of Environmental Planning and Management* **2019**, *63*, 669–688.
32. Tam, V.W.Y.; Tam, C.M. Waste reduction through incentives: A case study. *Build. Res. Inf.* **2008**, *36*, 37–43, doi:10.1080/09613210701417003.