



## COGNITIVE AWARENESS AND CONSUMER WILLINGNESS TO PAY FOR PLASTIC WASTE MANAGEMENT PROGRAMS: A CONTINGENT VALUATION METHOD

Tegar Muchid Istiyanto<sup>1</sup> Endah Saptutyingsih<sup>2</sup>

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### Corresponding:

Fakultas Ekonomi dan Bisnis

Universitas Muhammadiyah

Yogyakarta

Email:

[tegar.muchid.fe21@mail.umy.ac.id](mailto:tegar.muchid.fe21@mail.umy.ac.id)

[ac.id](mailto:tegar.muchid.fe21@mail.umy.ac.id)

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### Abstract

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Fakultas Ekonomi dan Bisnis Universitas Muhammadiyah Yogyakarta<sup>2</sup>

Email: [endahsaptuty@umy.ac.id](mailto:endahsaptuty@umy.ac.id)

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## INTRODUCTION

The exponential rise in plastic manufacturing and poor waste management are contributing factors to the worldwide plastic waste catastrophe, which has a substantial negative influence on ecosystems and public health Boz (2020). There are 400 million metric tons of plastic generated each year (Geyer et al., 2017). Plastics durability causes them to stay in the ecosystem, endangering biodiversity and marine life (Masi, 2018). According to projections, by 2050, the weight of plastic in the oceans may surpass that of fish (Jambeck et al., 2015), with an estimated 11 million metric tons of plastic entering the ocean year (Borrelle et al., 2020). To lessen these effects, immediate international action is required to cut back on plastic production, enhance waste management, and encourage a circular economy. These difficulties are considerably more noticeable in developing nations, as the example of Indonesia shows. Cognitive awareness is a key factor influencing behavioral changes, as it represents an individual's comprehension of the environmental consequences of their actions.

Extensive research has been conducted on the influence of cognitive awareness in shaping pro-environmental behavior. Cognitive Dissonance Theory posits that individuals encounter psychological discomfort when their actions are inconsistent with their values or knowledge, prompting them to modify their behavior to alleviate this dissonance. Nguyen et al., (2023) utilized this theory within the framework of waste management in Vietnam, indicating that individuals possessing greater cognitive awareness exhibited a higher propensity to endorse sustainable initiatives. Their findings support Cognitive Dissonance Theory, highlighting that increased environmental awareness motivates individuals to align their actions with their values.

Only 10% of the 6.8 million tons of plastic garbage produced annually in poor nations like Indonesia are recycled, making the problem of plastic waste there especially serious (Hidayat, 2019). Indonesia is the country that contributes the second most to marine plastic pollution since this debris frequently ends up in rivers and oceans. Research indicates notable effects on ecosystems, including the Bangka Strait's coral reefs (Mueller, 2022). The underdeveloped recycling infrastructure and reliance on single-use plastics continue to worsen pollution, especially in coastal areas like Surabaya where microplastic concentrations can reach up to 42,000 particles per square kilometer (Cordova, 2019). This is in spite of initiatives like mobile apps that are meant to improve recycling (Selamet, 2019). The overall makeup of Indonesia's garbage demonstrates the scope of the issue and the urgent need for systemic changes in waste management.

Excerpted from the Sistem Informasi Pengelolaan Sampah Nasional (SIPSN) website In 2023, Indonesia's waste composition primarily comprises food waste (39.78%), followed by plastic trash (19.19%) and paper/cardboard waste (10.8%). Smaller additions include wood/twigs (12.03%), metal (3.23%), textiles (2.9%), rubber/leather (2.53%), glass (2.47%), and other categories (7.07%). The high proportion of food and plastic waste highlights the environmental impact of organic and non-biodegradable materials, underscoring the need for effective waste management strategies such as recycling and composting. The significant presence of plastic and other recycled materials indicates the potential for resource recovery initiatives, contributing to Indonesia's sustainability goals. On a global scale, this issue is further compounded by the interplay between inadequate waste management and its contributions to greenhouse gas emissions.

Ecosystems and public health have been severely impacted by the global plastic waste problem, which has been exacerbated by the rapid increase in plastic production and inadequate waste management techniques (Boz, 2020). Large accumulations of plastic waste contribute to global warming through greenhouse gas (GHG) emissions, particularly methane (CH<sub>4</sub>), released from improperly managed disposal sites (Rarastry, 2016). Research by Vassanadumrongdee & Kittipongvises (2018) on waste management in Bangkok, Thailand, similarly highlights that excessive waste accumulation at disposal sites significantly increases methane emissions, further exacerbating climate change.

Addressing these challenges requires innovative approaches that emphasize individual behavioral changes driven by cognitive awareness. Cognitive awareness, which reflects an individual's understanding of environmental impacts and their role in mitigating them, plays a critical role in influencing pro-environmental behaviors such as reducing plastic consumption and supporting waste management initiatives. By fostering a deeper understanding of the environmental consequences of waste, cognitive awareness can drive behavioral shifts necessary for achieving sustainable waste management goals, including reducing GHG emissions and aligning with Indonesia's target of net zero emissions by 2050.

A critical approach involves increasing public knowledge about the environmental consequences of plastic pollution, as cognitive awareness plays a pivotal role in shaping pro-environmental behaviors. Cognitive awareness not only enhances understanding of the environmental and public health impacts of plastic waste but also influences the willingness to pay (WTP) for improved waste management services (Khan et al., 2020). Research indicates that individuals with heightened cognitive awareness are more likely to support sustainable waste management initiatives by aligning their behaviors with their environmental values (Negash et al., 2021). This alignment underscores the importance of fostering knowledge and attitudes that drive individual contributions to waste reduction programs. Public attitudes, shaped by cognitive awareness, significantly influence the success of such initiatives by encouraging compliance with policies aimed at reducing plastic waste (Hossain et al., 2022). Thus, cognitive awareness emerges as a key factor in motivating behavioral shifts essential for effective and sustainable waste management practices.

The management of plastic waste, closely linked to community engagement, necessitates a foundation of trust among all involved parties. Transparency in the waste management process builds trust among stakeholders, and social networks are vital for sharing information and accessing necessary resources to enhance effective waste reduction initiatives (Hossain et al., 2022; Vassanadumrongdee & Kittipongvises, 2018). This study explores the willingness to pay (WTP) for enhanced plastic waste management services, focusing on public perceptions and financial readiness to support activities aimed at minimizing plastic waste and promoting recycling. The findings demonstrate that socio-demographic characteristics significantly influence individuals' views and behaviors towards environmental sustainability, consequently impacting their participation in these activities (Negash et al., 2021).

In recent years, the escalating quantity of plastic garbage has compelled local governments to pursue novel solutions. Community-based trash management projects have been implemented in several areas, including Condong Catur, Sleman Regency. This region features a heterogeneous population and substantial plastic trash production, rendering it an appropriate site for examining waste management practices. In 2023, Sleman Regency produced 219,653.64 tons of garbage, of which 71,536.35 tons were processed, resulting in a significant quantity remaining unaddressed. The waste composition in Sleman Regency has the following proportions: Food waste constitutes 46.49%, paper and cardboard 17.08%, plastic waste 32.77%, metal 0.99%, fabric 0.16%, rubber and leather 0.03%, glass 0.57%, and 1.9% is classified as other materials, with negligible contributions from wood or branches. The statistics reveal that plastic garbage comprises about one-third of total waste generated, emphasizing the critical necessity for improved waste management solutions (Hidayat, 2019). Ongoing efforts reveal a poor recycling rate and a significant amount of untreated garbage, highlighting the necessity for enhanced infrastructure and increased public participation in Sleman Regency (Khan et al., 2020; Masi, 2018). Comprehending public readiness to provide financial support is essential for guaranteeing the success of these initiatives.

As cities endeavor to improve their waste management systems, comprehending the public's willingness to pay (WTP) for these projects is essential. This comprehension can guide policy formulation and promote sustainable behaviors, establishing a basis for efficient community-oriented waste management (Suthar & Singh, 2015; Vassanadumrongdee & Kittipongvises, 2018).

The study focuses on Condong Catur, located in Sleman Regency, an urban locale characterized by a varied demographic and notable issues related to plastic waste, with plastics making up 32.77% of the overall waste generated. In light of increasing urbanization and waste production, there is a notable lack of studies investigating the community's willingness to pay (WTP) for improved plastic waste management systems in this area. Prior investigations, including those in Vietnam (Nguyen et al., 2023), have examined willingness to pay in urban environments; however, they have overlooked particular socio-demographic elements, such as cognitive awareness, which are vital in developing nations like Indonesia. This study addresses that gap by incorporating socio-demographic factors and cognitive awareness into the analysis, aiming to deliver practical insights for waste management policies. By employing a logistic regression model, this study highlights the importance of these socio-demographic factors such as income, education level, and household size in motivating sustainable waste management practices. The findings contribute to the growing body of literature on environmental sustainability by emphasizing the critical role of public participation and tailored interventions in achieving effective waste management outcomes (Hidayat, 2019).

## METHOD

This study was conducted in Condong Catur, Sleman Regency, specifically chosen due to its significant plastic waste generation, which constitutes approximately 32.77% of the total waste produced in the area. The selection of Condong Catur as the research location was based on its status as a growing urban center with a diverse and densely populated community, leading to higher volumes of waste compared to surrounding rural areas. Additionally, Condong Catur's proximity to Yogyakarta, a major urban hub, further contributes to its waste challenges. Insufficient waste management infrastructure and public awareness exacerbate the area's waste issues, making it a critical site for investigating the community's willingness to pay (WTP) for enhanced waste management solutions, particularly in light of the ongoing plastic waste crisis (Masi, 2018; Vassanadumrongdee & Kittipongvises, 2018).

To determine how much households in Condong Catur would be willing to pay for improving plastic waste management and to assess the impact of socio-demographic factors on this willingness, we conducted a survey among residents in the research area. Their support was gauged by whether they agreed to contribute financially to enhanced waste management initiatives, effectively serving as a vote on waste management policies. This study aimed to identify which households were more inclined to invest in sustainable waste management practices and how their socio-demographic characteristics influenced their willingness to pay (WTP) for these improvements.

To gather the preliminary data, the examination utilized a closed-ended contingent valuation technique featuring an iterative bidding process. The initial bid of IDR 20,000 was established based on insights gathered from focus group discussions involving 20 household heads. The questionnaire was subjected to content validation through expert consultation and pilot testing, aimed at refining the questions to enhance clarity and reliability. which was the lowest offer among the 20 household heads. The average amount individuals were willing to pay for improved waste management services was IDR 26,000 (USD 1.638). The willingness to pay among residents in the research area is not fully captured by these estimations. Instead, these results are utilized to assess the potential financial benefits of improved waste management. The estimations help identify participants who are both financially capable and willing to support enhancements in waste management services. We did this by asking participants if they would be in favour of paying IDR 26,000 (USD 1.638) per month for better waste management. This approach highlights the importance of understanding public attitudes toward waste management initiatives.

The completed survey form consists of four sections. Section A gathers demographic characteristics, including age, educational level, and household size. Section B focuses on economic characteristics, capturing data on average monthly income (IDR) and occupation. Section C examines behavioral characteristics, specifically the shopping location and cognitive. Finally, Section D assesses support for plastic waste management, specifically participants' willingness to pay IDR 26,000 (USD 1.638) monthly for improvements in plastic waste management.

The sampling method employed in this study was proportionate stratified random sampling. We began by gathering population statistics from each subdistrict within the research area. Based on the number of subdistricts, we divided the samples into several strata to ensure representation across different demographic groups. Random sampling was then conducted from each stratum, with a minimum age limit of 23 years to ensure that participants are more likely to be heads of households or have relevant experience in household decision-making. This approach allows for a more accurate representation of the population's views on plastic waste management. The sample size for each stratum was determined using a formula appropriate for proportionate stratified random sampling, ensuring that the sample reflects the population's characteristics.

We conducted a survey involving 399 respondents selected from 7 villages in Condongcatur, focusing on their perspectives regarding plastic waste management. The villages involved in this research are: Dero with 65 respondents, Kentungan with 60 respondents, Joho with 55 respondents, Kayen with 55 respondents, Gejayan with 55 respondents, Pondok with 55 respondents, and Gandok with 51 respondents. The required sample size for the survey was calculated using Slovin's formula to ensure a representative sample. Data collection was carried out in two phases. In the first phase, we used stratified sampling techniques to select households from designated waste management zones. In the second phase, we randomly selected heads of households from each hamlet to participate in the survey.

We employed logistic regression analysis to determine the association between various factors and the willingness of households to enhance their plastic waste management practices. In this model, the household's willingness is represented as a binary dependent variable, where 1 denotes agreement and 0 denotes disagreement. The independent variables in the model include plastic waste management features, geographic factors, and sociodemographic characteristics (see Table 1).

The logistic regression model is expressed as:

$$\text{Log}_e \left[ \frac{\{p(y=1|x_1...x_p)\}}{\{1-p(y=1|x_1...x_p)\}} \right] = \text{Log}_e \left[ \frac{\pi}{1-\pi} \right] = \alpha + \beta_1x_1 + \dots + \beta_px_p = \alpha + \sum_{j=1}^p \beta_j x_j \dots\dots\dots(1)$$

where the conditional probability denoted by  $\pi$  is  $P(Y=1 | X_1 \dots X_p)$ . The above log odds is known as the logit transformation of  $\pi$ , and the analytical technique used here is also referred to as logit analysis. The logistic function operates in this manner:

$$p(Y = 1 | X_1 \dots X_p) = \frac{\exp(\alpha + \sum_j^p \beta_j X_j)}{1 + \exp(\alpha + \sum_j^p \beta_j X_j)} \dots\dots\dots(2)$$

This may alternatively be changed to:

$$p(Y = 1 | X_1 \dots X_p) = \frac{1}{1 + \exp(-\alpha - \sum_j^p \beta_j X_j)} \dots\dots\dots(3)$$

The Likelihood of non response is:

$$P(Y = 0 | X_1 \dots X_p) = 1 - p(Y = 1 | X_1 \dots X_p) = \frac{1}{1 + \exp(-\alpha - \sum_j^p \beta_j X_j)} \dots\dots\dots(4)$$

The values  $Y = 1$  (yes) and  $Y = 0$  (no) indicate the respondent's readiness to pay IDR 26,000 (USD 1.63). The logistic regression model designed to estimate the probability of endorsing enhancements in plastic waste management relies on these specific variables:

$$\log \left[ \frac{\rho}{1-\rho} \right] = b_0 + b_i x_j + \epsilon_t \dots\dots\dots(5)$$

The logistic regression equation's log-odds ratio is the logarithm of the probability that a household will decide to pay for better plastic waste management. The signals of the parameters and

their statistical significance reveal the direction of the household's response. The explanatory variables included in the model are shown in Table 1.

**Table 1.**  
**The definition of explanatory variables**

Categories	Variable
Support for Plastic Waste Management	Support for the monthly payment (USD 1.638) for plastic waste management (1: yes; 0: no)
Demographic characteristics	Age (year)
	Educational Level
	0: did not attend school
	1: Elementary school
	2: Junior high school
	3: Senior high school
	4: Diploma
	5: Bachelor's degree
	6: Postgraduate
	HouseHold Size
Economic characteristics	Average Income per month (IDR)
Behavioral characteristics	Shopping Location (1: modern market; 0: traditional market)
	Cognitive statement "do you agree if people should sacrifice their income for better waste management?" (1: yes; 0: no)

Source: Data Result, 2025

## RESULT

The study's findings revealed that 78,95% of participants (n=315) were willing to pay an average of IDR 26,000 (USD 1.63) per month to improve plastic waste management, where as 21,05% of participants (n=84) were not. Socio-demographic factors such as income, education level, age, and cognitive awareness significantly influence WTP for improved plastic waste management. Respondents with higher incomes and educational levels are more willing to pay, reflecting their financial capacity and environmental awareness. Younger individuals show a higher WTP, possibly due to their heightened sensitivity to environmental issues. Similarly, higher cognitive awareness correlates with greater recognition of the benefits of sustainable waste solutions.

In contrast, factors such as household size and shopping location do not significantly impact WTP. This result is consistent with the findings of Madigele et al. (2017), which suggest that financial stability and cognitive factors have a greater impact than household size on influencing WTP. In a similar vein, Chernet et al., (2024) discovered that the location of shopping exerted little impact on willingness to pay, indicating that consumer behavior is more significantly linked to cognitive awareness and environmental values rather than lifestyle factors such as shopping preferences. The lack of significance regarding Household Size and Shopping Location could also be linked to variations in waste management practices within different contexts. In Ecuador, Negash et al., (2021) discovered that the perceived convenience of recycling facilities was more influential than demographic factors in determining willingness to pay. In Thailand, Vassanadumrongdee & Kittipongvises, (2018) noted that campaigns aimed at enhancing public awareness through cognitive engagement proved to be more effective than incentives linked to consumer behaviors. The results highlight the necessity of

customizing waste management strategies to particular socio-cultural environments, emphasizing the enhancement of cognitive awareness and the resolution of financial obstacles.

For example, larger households, while producing more waste, are not necessarily more inclined to contribute financially. shopping location also show limited influence, suggesting that financial and cognitive factors play a more decisive role than lifestyle or demographic variables. These findings emphasize the importance of education and awareness programs alongside financial incentives to enhance public participation in sustainable waste management initiatives.

**Table 2.**  
**Results of a logistic regression model**

Variables	Odd ratio	Standart error
Constant	.074	2.098
Age	.918**	.037
Educational level	1.756*	.298
Household Size	1.400	.359
Income	1000***	.000
Shopping Location	2.403	.953
Cognitive	55.221***	.614
Nagelkerke $R^2$	.859	

Dependent variable: WTP for Plastic waste management

\* significant at  $\alpha=10\%$ .

\*\* significant at  $\alpha=5\%$ .

\*\*\* significant at  $\alpha=1\%$ .

Source: Data Result, 2025

This study delves into the impact of socio-demographic and economic factors on people's WTP for better programs that manage plastic waste. The logistic regression analysis indicated that Age, Educational Level, Income, and Cognitive Awareness have a significant impact on WTP, whereas Household Size and Shopping Location do not demonstrate significant effects. The findings provide important insights into the various factors that influence public support for waste management initiatives and underscore areas where targeted policy interventions may be necessary.

The influence of age is substantial, exhibiting a notable adverse impact on willingness to pay. Individuals in the younger demographic tend to show greater support for initiatives aimed at managing plastic waste, largely due to their heightened awareness of the negative consequences associated with inadequate waste management, such as health risks and environmental harm. This is consistent with findings from Deliana et al., (2023); Nguyen et al., (2023), which indicate that younger individuals are more likely to participate actively in environmental initiatives. In a similar vein, Fischbach et al., (2022) noted that younger individuals frequently demonstrate increased environmental consciousness, which affects their readiness to engage in sustainability initiatives. Grasping these generational differences is crucial for crafting communication strategies that effectively engage younger audiences and motivate their involvement in sustainability initiatives.

The level of education demonstrates a noteworthy positive influence on willingness to pay. Individuals with advanced educational backgrounds tend to show greater support for waste management initiatives, attributed to their heightened awareness of environmental concerns and comprehension of sustainable practices. This finding aligns with the study conducted by Benyam et al., (2020), which highlighted the importance of education in promoting public engagement in environmental initiatives. Campaigns aimed at boosting awareness of the advantages of effective waste management could significantly improve public involvement and readiness to invest in these initiatives. Utilizing interactive

platforms and social media, these campaigns foster a more engaging conversation with younger audiences, transforming sustainability from a mere obligation into an attractive lifestyle choice.

Income serves as a crucial factor, as individuals with higher earnings demonstrate increased backing for waste management initiatives. This indicates their ability to support sustainability initiatives and their commitment to the welfare of the community. Research conducted Madigele et al., (2017) and Suryani (2017) supports these conclusions, emphasizing the significance of income in influencing willingness to pay for waste reduction policies. Financial barriers encountered by low-income groups could be mitigated by policymakers implementing subsidies or incentives, thereby promoting wider participation across various socioeconomic segments. Through the implementation of these measures, governments can promote a more inclusive strategy for sustainability, motivating all citizens to participate in waste reduction efforts and support a healthier environment.

The analysis revealed that cognitive awareness stands out as the most significant predictor of willingness to pay, with individuals displaying elevated levels of environmental awareness showing a notably higher propensity to pay. This finding is consistent with the observations made by Triguero et al., (2016), who highlighted the critical importance of cognitive engagement and environmental knowledge in promoting public support for sustainability initiatives. Initiatives that integrate educational outreach with community participation are expected to enhance collaborative efforts in achieving effective waste management. This comprehensive approach not only boosts people but also fosters fair access to resources and opportunities for everyone, ultimately resulting in more efficient waste management solutions.

Cognitive awareness plays a crucial role in influencing consumers' willingness to pay (WTP) for better programs. Environmental Literacy Theory suggests that a deep understanding of the impacts of plastic waste on the environment can motivate individuals to participate in waste management initiatives. When the community comprehends the consequences of plastic waste and the importance of sustainable management, they are more likely to invest in solutions that support sustainability. Research by Szczytko et al., (2019) emphasizes that enhancing environmental literacy among the public not only raises awareness but also fosters greater collective action in plastic waste management, ultimately improving the effectiveness of waste management programs.

From the perspective of Cognitive Dissonance Theory, individuals with high cognitive awareness may experience dissonance when their actions do not align with their environmental values, particularly regarding plastic waste management. When faced with environmentally unfriendly choices, such as single-use plastics, this discomfort can drive them to change their behavior, including a willingness to pay more for better plastic waste management programs. Research by Lee (2019) indicates that individuals experiencing cognitive dissonance are more likely to seek information that supports their decisions and avoid conflicting information. Therefore, increasing cognitive awareness about the impacts of plastic waste can help alleviate this dissonance and encourage individuals to commit to more sustainable choices, which in turn can enhance WTP for plastic waste management programs.

The findings emphasize the necessity of concentrating on key predictors, including age, education, income, and cognitive awareness, to develop effective strategies for waste management programs. It is essential for those in positions of authority to focus on educational programs, improve financial access, and implement targeted outreach efforts to involve various demographic groups, ultimately cultivating a shared commitment to environmental sustainability. By tackling these essential elements, waste management initiatives can garner wider public backing, facilitating their effective execution and lasting influence. Utilizing effective communication strategies that highlight the concrete benefits of sustainable choices can enhance the relationship between consumers and eco-friendly products, ultimately resulting in a greater willingness to pay (WTP) for these items.

Unexpectedly, Household Size, and Shopping Location do not exhibit significant impacts on WTP. The total number of family members in a respondent's household, referred to Household Size,



was analyzed to investigate its potential influence on willingness to pay (WTP). The size of the household does not show significance, even though it is generally observed that larger households tend to produce more waste. This aligns with the findings of Madigele et al., (2017), who indicated that financial stability is a more significant determinant of WTP than household size. Larger households might encounter financial limitations that restrict their capacity to engage in waste management efforts, underscoring the necessity for focused assistance in families with multiple members (Chernet et al., 2024). By addressing these financial constraints with customized programs, we could boost participation in waste management initiatives, which would ultimately foster more effective environmental stewardship in communities.

The significance of Shopping Location is also absent, which contradicts the anticipation that contemporary retail consumers would demonstrate greater support for waste management initiatives. As emphasized by Nguyen et al., (2023), this may indicate the intricacies of consumer behavior, where awareness and participation in sustainability initiatives are not merely dictated by shopping habits but are shaped by wider cognitive and social influences. Studies conducted in Vietnam indicate that although location can impact awareness, its influence on willingness to pay is frequently negligible if consumers lack direct exposure to environmentally friendly policies or products (Chernet et al., 2024). This highlights the necessity for retailers to proactively advocate for sustainability initiatives and inform consumers about the advantages of eco-friendly practices, as simply having a location is not enough to foster significant engagement.

Furthermore, incorporating community-driven initiatives into waste management strategies has the potential to greatly improve public involvement and willingness to pay. Participatory programs that engage local residents in decision-making processes empower communities and cultivate a sense of ownership regarding environmental outcomes. Studies show that when people engage in waste reduction efforts, like community clean-ups or recycling initiatives, their understanding and dedication to sustainability significantly improve. Additionally, utilizing social networks can enhance these outcomes; research indicates that people are more inclined to adopt pro-environmental behaviors when they see their peers participating in comparable actions (Benyam et al., 2020). Therefore, creating collaborative frameworks that promote shared responsibility could be essential in addressing challenges associated with financial limitations and improving overall backing for initiatives aimed at managing plastic waste.

## CONCLUSION AND RECOMMENDATION

This study investigates the willingness to pay (WTP) for improved plastic waste management services among residents in Condong Catur, Sleman. The findings reveal that a significant majority of residents are willing to contribute an average of IDR 26,000 per month for better waste management solutions. Factors such as income, education level, and cognitive awareness were identified as significant influences on WTP, highlighting the importance of informed citizens in supporting sustainable practices. The implications of these findings suggest that enhancing cognitive awareness through educational initiatives is crucial for fostering community engagement in waste management efforts. The study demonstrates a positive correlation between cognitive awareness and educational attainment, which has a substantial impact on the WTP for better plastic waste management. Higher educational attainment was associated with a higher likelihood of willingness to pay, according to logistic regression analysis. This suggests that those who are more educated are more likely to grasp environmental challenges and be inspired to support sustainable initiatives. In contrast to other characteristics like age or wealth, cognitive awareness showed the greatest odds ratio (55.221) in the regression model. According to this, raising cognitive awareness is essential for promoting pro-

environmental actions, which are frequently connected to educational programs that educate and involve communities. This assertion is backed by the findings of Nguyen et al., (2023), which revealed a noteworthy positive relationship between educational initiatives and cognitive awareness in Vietnam. Individuals engaged in these programs demonstrated heightened environmental consciousness and a stronger commitment to sustainable practices. In a similar vein, Szczytko et al., (2019) confirmed that environmental education improves cognitive awareness, promoting changes in behavior that align with sustainability. This study indicates that individuals with greater educational backgrounds or involvement in environmental initiatives demonstrated enhanced cognitive awareness, as evidenced by their readiness to invest in better waste management solutions.

However, this study is limited by its focus on a relatively small and homogeneous area, which may affect the generalizability of the results to other regions. Future research should examine policies related to food waste management, the role of businesses in waste generation, and a comprehensive review of existing waste collection policies. Understanding these aspects can provide valuable insights for developing more effective waste management strategies. In conclusion, this research contributes to the understanding of consumer behavior regarding plastic waste management and underscores the need for targeted educational programs to increase community participation. By addressing the factors that influence WTP, policymakers can develop more effective strategies for managing plastic waste and promoting sustainability in Indonesia.

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