

Demographic factors and their influence on the ethics of household waste management in Indonesia

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Abstract. This study examines the relationship between household waste management ethics in Indonesia and demographic characteristics, with particular attention to students, the urban middle class, coastal communities, and indigenous groups that continue to practice local wisdom. Using a qualitative literature-based approach, the study analyzes previous empirical studies on waste-related behavior alongside contemporary discussions on environmental ethics. The findings reveal a persistent gap between environmental awareness and everyday waste management practices. Although students and well-educated urban residents demonstrate relatively high levels of environmental knowledge, this awareness is not consistently translated into waste-reduction and waste-segregation behaviors. The urban middle class, in particular, remains strongly influenced by consumerism and disposable lifestyles. In contrast, coastal communities and indigenous Samin groups exhibit waste management practices that align more closely with ecocentric values and zero-waste principles, largely due to their direct dependence on healthy ecosystems for their livelihoods. The study concludes that Indonesia's waste problem constitutes an ethical challenge that transcends socioeconomic boundaries. Therefore, efforts to strengthen environmental ethics should be context-specific and demographically sensitive, emphasizing intergenerational justice, social solidarity, and individual responsibility toward everyday living environments.

1 Introduction

Indonesia is frequently portrayed as a deeply religious society that upholds noble values, social cooperation, and moral teachings derived from diverse religious traditions. Public spaces are often filled with messages encouraging ethical conduct, social responsibility, and care for the natural environment. However, in many urban areas, residential neighborhoods, and tourist destinations, these moral narratives contrast sharply

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with everyday realities marked by plastic waste accumulation, clogged drainage systems, and rivers polluted by household refuse. This discrepancy between moral discourse and daily environmental practices suggests that the relationship between society and the environment cannot be adequately explained by ethical rhetoric or public slogans alone. Instead, it reflects a more complex interaction between values, social structures, and habitual behavior, highlighting the need to critically examine how moral principles are translated or fail to be translated into concrete environmental action.

Waste-related problems are commonly framed as technical or managerial issues, such as inadequate waste collection infrastructure, overloaded landfills, unequal distribution of waste banks, or weak regulatory enforcement. Public slogans such as “Dispose of Waste in Its Place” rarely function as moral imperatives, as they are treated merely as rules of order rather than expressions of ethical responsibility. Environmental ethics scholarship consistently emphasizes that human treatment of soil, water, air, and other living beings is inseparable from how people understand nature, themselves, and their social relationships [1][2]. When waste is reduced solely to a matter of hygiene or cleanliness, the ethical dimensions embedded in everyday actions are obscured.

Environmental ethics should not remain confined to abstract norms; moral values acquire meaning only when they are embodied in daily practices. This perspective aligns with Magnis-Suseno’s argument that moral life must be rooted in concrete human experience rather than existing solely at the level of abstract ideals [3]. Ethical principles, therefore, gain relevance only when they shape habitual behavior in ordinary living contexts.

Keraf proposes the principles of respect for nature and moral responsibility toward the environment as foundational elements of environmental ethics [1]. Respect for nature requires abandoning the perception of the environment as a mere dumping ground and recognizing it instead as a shared living space that must be preserved. Moral responsibility highlights that every decision made in the present has consequences not only for other living beings but also for future generations. When these principles are subordinated to convenience and short-term economic interests, the waste crisis manifesting in drainage systems, rivers, and coastal areas becomes a visible symptom of deeper ethical distortions.

Empirical studies in Indonesia indicate that the internalization of these ethical principles varies significantly across social groups. For example, the Patra Rangka Farmers’ Group in Subang, supported through corporate social responsibility (CSR)-based sustainable agriculture initiatives, has reduced reliance on chemical fertilizers and adopted more environmentally friendly practices [2]. Agricultural residues and household organic waste are processed into compost, while chemical inputs are minimized. In this context, ecological awareness is closely linked to soil fertility and food security. Similar patterns are observed in other indigenous agricultural communities that regard land not as an object of exploitation, but as a living space entrusted to them for future generations [4].

In coastal areas, however, the situation often differs. Research conducted in Biluhu Timur Village, Gorontalo, shows that while coastal residents acknowledge the importance of maintaining clean beaches and marine environments, particularly for fishing and tourism, they frequently continue to dispose of waste into rivers and coastal zones [5]. Other studies examining coastal waste campaigns in Sulawesi report that beach clean-up activities may temporarily raise awareness, yet everyday practices often revert to open dumping once campaigns conclude [6]. These findings suggest that positive environmental attitudes do not automatically translate into stable ecological habits.

Broader economic structures further reinforce consumptive lifestyles. The widespread availability of inexpensive single-use products normalizes a throwaway culture. Numerous theological and ethical analyses argue that ecological degradation is deeply rooted in capitalist logics that reduce nature to a commodity while ignoring its intrinsic value [7][8][9]. Within this framework, waste is perceived as an unavoidable by-product of modern life rather

than as an indication of fundamental problems in prevailing modes of living. This article therefore approaches Indonesia's waste crisis as a reflection of deviations in environmental ethics that manifest differently across demographic layers, including age, location, economic class, educational background, and cultural context. The principle of respect for nature is employed as an analytical lens to examine when ethical values are sufficiently internalized to shape behavior and when habit, economic structures, and consumer culture override them.

2 Demographic Factors Influencing the Ethics of Waste Management

2.1 Education and Age – When Knowledge Does Not Become Morality

Young and educated household members frequently dispose of waste with little reflection, despite often positioning themselves at the forefront of environmental movements in public discourse. Empirical studies on food-waste behavior in large Indonesian cities indicate that household waste management is predominantly carried out by individuals of productive age with relatively high levels of education and middle-to-upper incomes [10]. Although this group generally possesses substantial knowledge regarding nutrition, health, and environmental sustainability, such awareness does not necessarily prevent over-purchasing food, poor meal planning, or the disposal of still-edible leftovers.

Other findings suggest that while positive environmental attitudes and knowledge about waste issues can increase intentions to behave in environmentally responsible ways, factors such as shopping habits and government interventions do not significantly influence these intentions [10]. In practice, many educated individuals understand what ought to be done, yet considerations of comfort, promotional incentives, and lifestyle trends often outweigh ethical commitments when making consumption and waste-disposal decisions.

The same study highlights that subjective norms, particularly social pressure from peer groups, are a dominant driver of pro-environmental intentions [10]. When single-use plastics or food waste are perceived as socially acceptable within a community, educated individuals tend to conform to these norms, even when such behavior contradicts their moral convictions. At the same time, perceived behavioral control remains weak due to limited supporting infrastructure, including the absence of source-level waste sorting and inconsistent collection services [10]. This aligns with findings from several cities where inadequate waste-processing systems lead households to view waste separation as futile, as sorted waste is often recombined during collection.

Research conducted in Malang further shows that approximately one-quarter of households do not yet understand the concepts of reduce, reuse, and recycle (3R). Nevertheless, the majority express a willingness to participate if clear systems and adequate facilities are provided [11]. This insight is critical for reinterpreting the behavior of educated groups, who often perceive themselves as rational and well-informed actors. In many cases, however, their knowledge remains confined to the cognitive level and does not develop into sustained moral commitment.

Educated young people who claim environmental concern frequently experience internal conflict between their values and their everyday practices, such as waste disposal, electricity use, or food choices in homes and boarding houses. In such situations, environmental ethics remains an abstract ideal, insufficiently robust to withstand peer pressure or the appeal of convenience.

When ecological knowledge is not accompanied by the willingness to challenge consumptive social norms, education risks becoming merely a form of identity signaling rather than a catalyst for ethical transformation. Ideally, education should function as a

foundation for character formation. The central challenge lies in reshaping how responsibility is understood—not merely as an individual preference, but as a moral obligation that affects other living beings and future generations. Without such a shift, the gap between knowledge and practice in household waste management is likely to persist among educated youth and middle-class households.

2.2 Geographical Factor – Coastal Communities and the Logic Between Stomach and Sea

For coastal residents, environmental ethics rarely emerges from seminars or formal instructional modules. Instead, it is shaped through a direct and continuous relationship between everyday subsistence and the sea, which creates a dense web of mutual dependence. The marine environment is commonly perceived as a living entity that sustains life. Coastal communities witness firsthand how water quality and ecosystem health directly affect fishing yields and tourism viability. Consequently, there is a widespread awareness in many coastal villages that disposing of waste into the sea will ultimately return as damage to their own livelihoods.

Experiences from coastal areas in Gorontalo illustrate this dynamic. In Botubarani Village, for example, the seasonal appearance of whale sharks has transformed a former fishing village into a marine ecotourism destination. During peak periods, tourist arrivals can reach thousands per month, generating increased household income through boat services, food stalls, parking facilities, and homestays [12–14]. Simultaneously, the surge in visitors and single-use plastic consumption intensifies the burden of solid waste accumulation along the coastline.

Research on whale-shark ecotourism in Botubarani indicates that two interrelated processes occur concurrently. On the one hand, tourism diversifies income sources and creates new employment opportunities for coastal households. On the other hand, rising visitor numbers in the absence of adequate waste and wastewater management contribute to pollution, declining water quality, and reduced visitor comfort, including the risk of disturbing whale sharks through floating debris [12,14]. In this context, the sea functions both as a source of livelihood and as a receptacle for the negative externalities of tourism development.

From the perspective of distributive justice, an ethically appropriate stance for coastal communities involves utilizing marine resources in moderation while ensuring that ecosystems retain their capacity for recovery. This position is consistent with environmental ethics perspectives that reject viewing nature merely as an object of exploitation and affirm the intrinsic dignity of all forms of life. Everyday practices such as limiting the use of destructive fishing gear, participating in routine beach clean-up activities, and ensuring that tourism facilities manage waste responsibly represent modest yet meaningful steps toward ethical stewardship.

However, when concern for the marine environment is driven primarily by fluctuating fish prices, tourism revenue, or the resale value of recyclable materials, ecological commitment remains fragile. Once market incentives decline, economic motivations weaken, and tolerance for pollution or overexploitation tends to re-emerge. This pattern reflects an anthropocentric ethic in which nature is valued only insofar as it serves immediate human interests.

Ethical responses to coastal environmental degradation, therefore, cannot rely solely on economic incentive schemes. A gradual transformation of worldview is required, shifting from perceiving the sea merely as a site of production to recognizing its intrinsic value. Indonesian environmental ethics scholarship consistently emphasizes that enduring

ecological responsibility is grounded in respect for life itself and an awareness of intergenerational accountability [1,7–9]. For coastal communities, this perspective translates into a commitment not to sacrifice marine ecosystems for short-term economic gain.

Such ethical orientation can be strengthened through contextualized environmental education in coastal schools and religious spaces, where values of justice, trustworthiness, and care for other living beings are explicitly linked to daily practices, including waste segregation, reduction of single-use plastics, and regular participation in beach clean-ups. Studies on environmental ethics education suggest that this grounded and practice-oriented approach is more effective in fostering ecological solidarity than abstract moral instruction alone [5,27].

This trajectory is consistent with lessons drawn from indigenous communities that have cultivated more balanced relationships with nature, such as the Sedulur Sikep (Samin) community, which practices organic farming and near-zero-waste agriculture to preserve land continuity for future generations. For coastal residents, a comparable ethical stance can be expressed through a sustained commitment to protecting the sea from becoming a long-term casualty of short-term economic pursuits.

2.3 Economic Factor – Urban Middle Class Hedonism (Comfort and Waste)

The urban middle class frequently functions both as the primary driver of consumption and as the largest contributor to household waste. In Jakarta, for instance, waste generation reaches approximately 0.7 kilograms per person per day, with households accounting for the majority, followed by commercial activities such as shopping centres and office complexes [16]. This figure illustrates how everyday consumption patterns ranging from routine shopping to online food delivery and a growing culture of convenience generate continuous flows of disposable packaging that place considerable strain on the city's waste-management system.

In terms of food consumption, studies examining food-waste behaviour in major urban centres consistently identify productive-age groups with higher levels of education and middle-to-upper incomes as the main contributors to food waste [10,15]. Although these groups are generally well informed about nutrition, health, and sustainability discourses, they nevertheless tend to over-purchase food for reasons related to comfort, lifestyle preferences, or family expectations. Self-oriented considerations and the desire to maintain a constant abundance of food choices at home often override their stated environmental concerns, resulting in behaviour that contradicts their professed values.

At the urban scale, middle-class consumption patterns intersect with structural weaknesses in waste-management systems. An efficiency analysis of waste-management services across 29 provincial capitals reveals an average efficiency score of only around 0.39, indicating substantial gaps in technical performance and institutional capacity [17]. Efficiency levels are shaped by economic and social factors such as income, population density, and service coverage. In contexts where organisational capacity and financial resources are limited, waste is frequently transported directly to final disposal sites with minimal sorting, treatment, or recovery.

From a fiscal perspective, several studies indicate that municipal budgets allocated to the waste sector typically account for only one to four percent of total regional expenditure, while user fees collected from residents generally cover only basic collection costs rather than environmentally sound processing and treatment [11,18]. This arrangement fosters the illusion that financial payment alone absolves residents of responsibility, even as the

environmental and social burdens are transferred to communities living near landfills, informal waste pickers, and ecosystems exposed to leachate and pollution.

Viewed through the lens of environmental ethics, this situation raises critical issues of intergenerational justice and the equitable distribution of environmental risks. When personal convenience is prioritised, ecological degradation and social costs are displaced onto marginalised communities near disposal sites, future generations who inherit degraded land and polluted resources, and ecosystems whose carrying capacity is progressively eroded. Addressing the role of the urban middle class therefore, requires a shift in ethical orientation from a logic that equates responsibility with the ability to pay for convenience toward one that recognises accountability for the full environmental and social consequences of consumption.

2.4 Cultural Factor – Zero Waste Ethics Have Long Existed

The contemporary waste crisis reflects not merely technical failures in waste management, but a deeper rupture in the cultural relationship between humans and nature. The preceding sections have shown how formal education, geographical context, and urban middle-class lifestyles shape different forms of ethical deviation in everyday waste practices. In contrast to the linear logic of consumption promoted by dominant economic systems, several indigenous communities in Indonesia continue to uphold alternative ethical orientations. Communities such as the Sedulur Sikep (Samin) consciously maintain a worldview in which land, water, and crops are inseparable from human life and must therefore be protected as conditions for collective survival, as documented in studies on Javanese ecological wisdom [19].

Within the Samin worldview, agricultural residues such as straw, animal manure, dry branches, and harvest by-products are understood as integral components of a cyclical ecological process. Rather than being treated as waste, these materials are returned to the soil as organic fertilizer or reused as animal feed. Empirical studies on Sedulur Sikep agricultural practices demonstrate systems of organic cultivation that generate minimal waste and function as intergenerational learning spaces, where knowledge about balancing human needs with the land's carrying capacity is continuously transmitted [20]. Their deliberate restraint in consumption and acceptance of relatively simple lifestyles should not be interpreted as romantic traditionalism, but as a pragmatic ethical strategy to ensure long-term soil fertility and ecological continuity for future generations.

Comparable ethical orientations can be observed in the indigenous village of Ragi Hotang Meat in the Lake Toba region. Here, residents are encouraged to develop tourism activities while safeguarding landscape integrity, water quality, and ecological rhythms that sustain everyday life. Architectural and spatial studies of the village reveal that tourism development is intentionally guided by ecological considerations and local cultural values, rather than by the pursuit of visitor numbers alone [21]. From the perspective of deep ecology and ecocentrism, such decisions can be understood as conscious efforts to acknowledge the intrinsic value of nature, a theme widely discussed in contemporary environmental philosophy [22].

The shared ethical foundation linking these cases is an ecocentric perspective that rejects linear economic reasoning in favor of cyclical ecological thinking. Indigenous communities operate within a moral economy that assumes whatever is taken from the land must ultimately return to it in another form. By contrast, many urban households disrupt this cycle by transferring all waste to external collection systems without questioning its final destination. The experiences of communities such as the Sedulur Sikep illustrate that ecological solidarity becomes meaningful only when translated into concrete material

discipline—through limiting excessive desire, closing material loops, and considering ecological consequences in everyday household decisions. In the Indonesian context, revitalizing ancestral ecocentric values entails recognizing household waste footprints as a reflection of ethical responsibility and moral integrity.

3 Conclusion

Accumulations of waste in residential areas, drainage systems, rivers, and coastal zones represent only surface-level manifestations of a deeper problem. At its core, the issue lies in how humans conceptualise their relationship with nature: whether as dominant actors entitled to discard waste indiscriminately, or as integral components of an interconnected web of life that must be maintained in balance. Variations in waste-related behaviour observed among environmentally knowledgeable yet permissive students, consumption-oriented urban middle-class groups, pragmatically adaptive coastal communities, and indigenous societies that tend to live in closer harmony with nature demonstrate that waste practices are, ultimately, a reflection of human ethical orientations [1,7,23].

Beyond technological investments such as advanced waste-treatment facilities or expanded collection fleets, a crucial long-term strategy is a fundamental shift in perspective from merely disposing of waste to actively managing it. Waste must be reframed as a resource with residual value, whether as compost, recyclable material, or a potential source of alternative energy, in accordance with national policies on waste reduction and sustainable management [24–26]. Such a transformation aligns with ecocentric ethical principles that situate humans within, rather than above, ecosystems, as well as with the principle of intergenerational justice, which rejects the transfer of environmental degradation to future generations [1].

Strengthening social solidarity constitutes a further essential recommendation. This can be achieved through everyday practices that distribute both the responsibilities and benefits of waste management more equitably. Community-based initiatives integrating waste sorting, recycling, and the productive use of organic and inorganic waste have demonstrated potential not only to reduce pressure on landfills but also to foster collective responsibility. Religious institutions, neighbourhood organisations, and schools can serve as effective entry points for such initiatives, as community-empowerment programmes indicate that ecological solidarity can be cultivated through well-designed participatory activities [2].

The principle of justice must also be operationalised within patterns of consumption, particularly among urban middle-class populations. A culture of convenience and excessive packaging ensures that each purchasing decision contributes to a waste burden ultimately borne by others, including future generations. Moderating consumption, prioritising durable goods, and supporting environmentally responsible producers represent concrete steps toward challenging consumer capitalism and throwaway culture both of which are among the structural drivers of ecological degradation [1,8]. In this sense, environmental justice is not an abstract ideal but a lived reality shaped by daily decisions in markets and shopping centres.

Finally, ethical responsibility must be embedded within the social spaces closest to citizens' everyday lives. Households function as the primary setting for practising waste management; schools can institutionalise environmental values through curricula and student organisations; local communities can facilitate social monitoring and mutual support; and the state, together with local governments, bears the obligation to establish waste-management systems that are equitable, transparent, and sustainability oriented [4,6,24–26]. Without the integration of personal accountability and robust institutional support, environmental ethics risks remaining a matter of discourse rather than practice. Ultimately, managing waste is not

solely a technical or aesthetic concern. It is a question of dignity and a fundamental expression of ethical responsibility in a civilised society [1,23].

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