

## ISLAM AND ENVIRONMENTAL: THE ROLE OF GENERATION Z STUDENTS IN SUSTAINABLE CAMPUS INITIATIVES

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**Abstrak:** Indonesia sebagai salah satu negara penghasil sampah terbesar di dunia menghadapi tantangan lingkungan yang signifikan akibat pengelolaan sampah yang kurang memadai, yang dapat mengancam ekosistem dan kesehatan masyarakat. Dalam konteks ini, nilai-nilai Islam yang menekankan prinsip pengelolaan lingkungan dan sikap moderat (*wasatiyyah*) dapat menjadi kerangka moral yang kuat untuk mendorong perilaku berkelanjutan. Penelitian ini mengkaji peran mahasiswa Muslim Generasi Z dalam menerapkan praktik zero waste di salah satu universitas di Bandung, serta menganalisis bagaimana prinsip etika Islam memengaruhi kesadaran, sikap, dan partisipasi mereka terhadap isu lingkungan. Penelitian ini menggunakan metode survei kuantitatif dengan kuesioner berskala Likert, dan menganalisis data dari 40 responden menggunakan teknik statistik deskriptif. Hasil penelitian menunjukkan bahwa mahasiswa Generasi Z memiliki tingkat kesadaran lingkungan yang relatif tinggi dan menunjukkan keselarasan positif antara prinsip zero waste dengan nilai-nilai agama mereka, khususnya konsep *khilafah* (kepemimpinan lingkungan) dalam Islam. Namun demikian, penelitian ini juga menemukan adanya hambatan dalam penerapan zero waste secara penuh, seperti keterbatasan infrastruktur kampus, pengetahuan praktis yang masih rendah, serta tantangan sosial budaya. Penelitian ini merekomendasikan peningkatan fasilitas, pengembangan program edukasi yang terarah, serta pelibatan tokoh agama untuk memperkuat etika lingkungan di kalangan mahasiswa.

**Kata Kunci:** Etika Lingkungan Islam, Generasi Z, Zero Waste, Kepemimpinan Lingkungan, Praktik Keberlanjutan di Kampus

**Judul:** Islam dan Lingkungan: Peran Mahasiswa Gen Z dalam Menjaga Zero Waste di Kampus

**Abstract:** Indonesia, as one of the world's largest waste producers, faces significant environmental challenges stemming from inadequate waste management, threatening both ecological systems and public health. Against this backdrop, Islamic values — which emphasize environmental stewardship and moderation (*wasatiyyah*) — may serve as powerful moral frameworks to foster sustainable behavior. This study investigates the role of Muslim Generation Z students in adopting zero-waste practices at a university in Bandung, examining how Islamic ethical principles influence their environmental awareness, attitudes, and participation. The study employed a quantitative survey method using a Likert-scale questionnaire and analyzed data from 40 respondents through descriptive statistical techniques. Results indicate that Generation Z students possess relatively high environmental awareness and demonstrate a positive alignment between zero-waste principles and their religious values, particularly the Islamic concept of *khilafah* (stewardship). Nevertheless, significant barriers remain in fully adopting zero-waste practices, including insufficient campus infrastructure, limited practical knowledge, and sociocultural challenges. The study recommends enhancing facilities, developing targeted educational programs, and involving religious leaders to strengthen environmental ethics among students.

**Keywords:** Islamic Environmental Ethics, Generation Z, Zero Waste, Environmental Stewardship, Sustainable Campus Practices



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## INTRODUCTION

Islam is a religion that comprehensively governs every aspect of human life, including the ethical obligations of Muslims toward the natural environment. Within the Islamic worldview, cleanliness, balance, and a deep sense of care for the environment are highly esteemed moral imperatives that extend beyond ritual to encompass social and ecological responsibilities.<sup>1</sup> The Qur'an explicitly describes humanity's role as *khalifah* (stewards or vicegerents) on earth in Surah Al-Baqarah verse 30, assigning humans the critical duty to manage and protect nature with wisdom, prudence, and a sense of accountability:

“And [mention, O Muhammad], when your Lord said to the angels, ‘Indeed, I will make upon the earth a successive authority.’ They said, ‘Will You place upon it one who causes corruption therein and sheds blood, while we declare Your praise and sanctify You?’ Allah said, ‘Indeed, I know that which you do not know.’” (QS. Al-Baqarah: 30)

This verse highlights both the trust and the profound responsibility placed on human beings as stewards of the earth, a theme further reinforced in other Qur'anic verses. For example, Surah Ar-Rahman verses 7–9 emphasize the principle of *mizan* (balance), warning against human actions that disrupt ecological harmony and instructing believers to uphold justice and fairness in their relationship with the natural world:

“And the heaven He raised and imposed the balance. That you not transgress within the balance. And establish weight in justice and do not make deficient the balance.” (QS. Ar-Rahman: 7–9)

These verses establish a powerful theological framework that positions environmental stewardship as a fundamental part of Islamic ethics. Nevertheless, in reality, human activities have often strayed from these divine mandates. Various forms of environmental degradation, including the indiscriminate disposal of waste, illegal logging, and slash-and-burn practices that destroy vast forest areas, continue to proliferate, largely driven by human negligence and unsustainable consumption patterns.<sup>2</sup> This profound contradiction between religious ideals and actual practices underscores the urgent need to translate Islamic ecological values into everyday behavior.

As the country with the world's largest Muslim population, Indonesia holds enormous potential to become a global exemplar in applying Islamic teachings to environmental management. However, empirical data reveal a sobering picture. According to the National Waste Management Information System (SIPSN) from the Ministry of Environment and Forestry as of July 2024, Indonesia generated approximately 31.9 million tons of waste annually, with around 11.3 million tons (35.67%) remaining unmanaged. This overwhelming

<sup>1</sup> Harahap, R. Z. “Etika Islam dalam Mengelola Lingkungan Hidup.” *EDUTECH: Jurnal Ilmu Pendidikan dan Ilmu Sosial* 1, no. 1 (2015).

<sup>2</sup> W. Mardliyah, S. Sunardi, and L. Agung, “Peran Manusia Sebagai Khalifah Allah di Muka Bumi: Perspektif Ekologis dalam Ajaran Islam,” *Jurnal Penelitian* 12, no. 2 (2018): 355–378.

waste burden indicates that public awareness and the consistent implementation of environmentally conscious behavior — rooted in Islamic ethical frameworks — are still far from adequate.

In response to these environmental challenges, the zero waste movement has emerged as a promising sustainable lifestyle. This approach aims to drastically minimize waste production by adhering to the 5R principles: Refuse, Reduce, Reuse, Recycle, and Rot.<sup>3</sup> Concrete actions, such as carrying refillable drinking bottles, bringing home-cooked meals, using reusable shopping bags, and selecting eco-friendly products, have become central pillars of this movement. Beyond reducing landfill waste, zero waste practices align with Sustainable Development Goal 12, which promotes responsible consumption and production, and further provide economic advantages while enhancing environmental consciousness among communities.<sup>4</sup> These practices also resonate with Islamic teachings on moderation (*wasatiyyah*), balance, and the prohibition of extravagance (*israf*), which encourage individuals to adopt sustainable lifestyles that protect creation.

A pivotal demographic in advancing the zero waste movement is Generation Z, defined as those born between 1997 and 2012. According to Indonesia's National Statistics Agency (BPS) in 2020, Generation Z accounts for an estimated 71.5 million people, making it the country's largest generational group.<sup>5</sup> This cohort is characterized by strong digital literacy, high environmental sensitivity, and active participation on social media platforms such as Instagram, TikTok, and YouTube, enabling them to spread environmental awareness at unprecedented speed and scale. Within academic environments, Generation Z university students have begun to integrate zero waste practices into their daily routines by bringing reusable containers and water bottles, opting for sustainable shopping bags, and consciously choosing products with minimal environmental impact.

Previous studies on the implementation of zero waste initiatives in urban communities have revealed mixed results. For instance, research examining circular economy practices in urban *kampongs* found that while such practices contributed positively to local greening efforts, their impact on residents' economic prosperity remained limited.<sup>6</sup> Other scholarly

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<sup>3</sup> R. Rarasati and T. Pradekso, "Pengaruh Terpaan Berita Satwa Laut yang Mati Akibat Sampah Plastik dan Kampanye Zero Waste terhadap Perilaku Pengurangan Penggunaan Kantong Plastik," *Interaksi Online* 7, no. 4 (2019): 295–304.

<sup>4</sup> K. Rustan, A. Agustang, and I. I. Idrus, "Penerapan Gaya Hidup Zero Waste sebagai Upaya Penyelamatan Lingkungan di Indonesia," *Sibatik Jurnal Ilmiah Bidang Sosial Ekonomi Budaya Teknologi dan Pendidikan* 2, no. 6 (2023): 1763–1768, <https://doi.org/10.54443/sibatik.v2i6.887>.

<sup>5</sup> Badan Pusat Statistik, "Jumlah Penduduk Menurut Wilayah, Klasifikasi Generasi, Dan Jenis Kelamin, Di INDONESIA - Dataset - Sensus Penduduk 2020 - Badan Pusat Statistik," *Sensus.bps.go.id*, last modified 2020, <https://sensus.bps.go.id/topik/tabcular/sp2020/2/0/0>.

<sup>6</sup> M. Iqbal and T. Suheri, "Identifikasi Penerapan Konsep Zero Waste dan Circular Economy dalam Pengelolaan Sampah di Kampung Kota Kampung Cibunut, Kelurahan Kebon Pisang, Kota Bandung," *Jurnal Wilayah dan Kota* 6, no. 2 (2019), <https://doi.org/10.34010/jwk.v6i02.3191>.

work has highlighted strong conceptual harmony between Islamic principles and waste management inspired by zero waste models.<sup>7</sup> Despite these insights, there is still a marked paucity of research exploring how religious and cultural contexts — especially the link between Islamic values and environmental awareness — manifest among Generation Z, who are poised to drive Indonesia's future sustainability agenda.

Accordingly, this study aims to address this significant research gap by investigating Muslim Generation Z students' perceptions of how Islamic values interface with the zero waste lifestyle. This research also aspires to expand scholarly understanding of how Islamic ethical principles can be effectively integrated into sustainability initiatives, particularly through practices that emphasize reusable products and reduce resource consumption. By doing so, the study seeks to contribute not only to the academic discourse on religion and the environment but also to practical strategies for fostering environmental consciousness that is firmly rooted in Islamic moral frameworks. Such integration is particularly vital in academic settings, where students can act as agents of change and role models for sustainable living. Ultimately, this research is expected to offer a constructive pathway for aligning Islamic values with global sustainability objectives, enriching both ecological and spiritual dimensions of environmental stewardship in Indonesia's rapidly changing society.

## METHOD

This study employed a quantitative research design. A descriptive statistical approach was adopted to explore the role of Generation Z in promoting environmental sustainability through a zero waste lifestyle within a university setting. The research aimed to measure the levels of awareness, knowledge, and participation in the implementation of zero waste programs, as well as to examine the causal relationships between these practices and the broader Islamic principle of *maslahah* (the promotion of human well-being and public benefit). In accordance with Kasiram (2008), quantitative research can be understood as a systematic process of acquiring knowledge through numerical data to answer specific research questions.<sup>8</sup>

Consistent with its definition, the quantitative method was chosen to identify and describe the relationships among variables in a defined population. The descriptive approach within quantitative research allowed for a thorough, extensive, and in-depth exploration of the social situation under investigation.<sup>9</sup> This approach aligned with the aim of the present study, namely to examine the role of Generation Z in preserving the environment through

<sup>7</sup>A. J. Syukriya and L. R. Safitri, "Zero Waste Lifestyle Concept within Islamic-Science Perspective," *Journal of Halal Product and Research* 4, no. 1 (2021): 32–42, <https://doi.org/10.20473/jhpr.vol.4-issue.1.32-42>.

<sup>8</sup> Mohammad Kasiram, *Metode Penelitian Kuantitatif-Kualitatif* (Malang: UIN Malang, 2008).

<sup>9</sup> Karimuddin, *Bab 1 Penelitian Kuantitatif*, in *Metodologi Penelitian Kuantitatif* (Yayasan Penerbit Muhammad Zaini Anggota IKAPI, 2021).

zero waste principles and to analyze the causal link between Islamic teachings and environmentally responsible behavior.

The study focused on a population of Muslim university students enrolled at a university in Bandung, Indonesia. This population included students from a variety of faculties and academic programs, thereby providing a comprehensive picture of Generation Z's awareness, attitudes, and participation in sustainable practices informed by zero waste principles. Following Creswell (2014), to ensure representativeness, the study applied quota sampling. Participants were selected according to predetermined characteristics set by the researcher, specifically Muslim students who practiced or supported zero waste initiatives.<sup>10</sup> The final sample comprised 40 respondents, which was considered sufficient to yield valid and reliable results.

For data collection, the study employed a structured questionnaire as the principal instrument. The questionnaire was designed to capture reliable, factual, and informative data on respondents' perceptions, knowledge, and behaviors. In particular, the instrument assessed Muslim students' environmental consciousness and their sense of responsibility for environmental stewardship in line with Islamic values. As noted by Yasin et al. (2024), a questionnaire is an effective tool for collecting data from a large group of respondents.<sup>11</sup> The questionnaire was constructed using a Likert scale format, enabling respondents to indicate their level of agreement or disagreement with various statements or viewpoints.<sup>12</sup> This scale allowed the researcher to obtain more detailed and nuanced data on respondents' attitudes and beliefs concerning environmental issues and their relationship with the quality of life in accordance with Islamic teachings.

Following data collection, the responses were analyzed using descriptive statistical techniques. According to Sugiyono, data analysis is an intellectual activity that demands analytical skill and sound understanding to interpret findings appropriately.<sup>13</sup> In this study, descriptive statistical analysis was used to interpret and present the data without attempting to generalize the results beyond the study sample. This analytical technique helped to describe data patterns and distributions through simple visual representations such as charts and graphs. These graphical results were subsequently explained through narrative discussion, offering a clearer and more concise interpretation of the findings.

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<sup>10</sup> Deri Firmansyah and Dede, "Teknik Pengambilan Sampel Umum Dalam Metodologi Penelitian: Literature Review," *Jurnal Ilmiah Pendidikan Holistik (JIPH)* 1, no. 2 (August 30, 2022): 85–114.

<sup>11</sup> M. Yasin, S. Garancang, and A. A. Hamzah, "Metode dan Instrumen Pengumpulan Data (Kualitatif dan Kuantitatif)," *Journal of International Multidisciplinary Research* 2, no. 3 (2024).

<sup>12</sup> A. Wardhana, "Instrumen Penelitian Kuantitatif dan Kualitatif," in S. Bahri (Ed.), *Metodologi Penelitian Kesehatan* (Media Sains Indonesia, 2023).

<sup>13</sup> M. I. Syahroni, "Analisis Data Kuantitatif," *Jurnal Al-Musthafa* 3, no. 3 (2023): 1–13, <https://doi.org/10.62552/ejam.v3i3.64>.

Through this methodological framework, the study provided empirical insights into how Muslim Generation Z students engage in zero waste practices on campus, and how these practices resonate with Islamic ethical principles of environmental stewardship. This approach was expected to contribute to scholarly discussions as well as practical policy considerations for fostering environmentally responsible behavior within a religiously grounded ethical framework.

## RESULTS AND DISCUSSION

This section presents the results of the data analysis, beginning with descriptive statistical findings obtained through SPSS, followed by an elaboration of the questionnaire responses categorized into four thematic areas: (1) understanding of Islam and the environment, (2) environmentally friendly behavior, (3) implementation of zero-waste initiatives on campus, and (4) obstacles in adopting zero-waste practices.

### Descriptive Statistics

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
Factor	20	23.00	36.00	30.2500	3.36976
Behavior	20	24.00	36.00	28.9000	3.38573
Valid N (Listwise)	20				

Based on the results presented in the table above, a descriptive analysis was conducted on two main variables: Factor, which encompasses awareness of the importance of environmental stewardship, and Behavior, which measures the extent to which students adopt environmentally friendly practices in their daily lives.

For the Factor variable, the mean score was 30.25 with a standard deviation of 3.37. This suggests that respondents generally demonstrated a relatively high level of understanding concerning the significance of protecting the environment. The minimum and maximum values ranged from 23 to 36, indicating considerable variation in respondents' awareness levels. This variation implies that while many students possess a good grasp of environmental issues, a proportion still exhibits lower levels of understanding, pointing to opportunities for further educational interventions.

Regarding the Behavior variable, the mean was 28.90 with a standard deviation of 3.39. These results indicate that most students have adopted environmentally friendly behaviors to some degree, although differences remain among individuals. The minimum and maximum scores ranged from 24 to 36, similarly reflecting variability in the practical application of environmentally friendly behaviors on campus. This suggests that while a culture of sustainable practices is beginning to take root among students, there is still a need for strengthening consistent behavior across the entire student body.

## Understanding of Islam and the Environment



**Figure 1**

Based on the data collected, the results indicate that 50.8% of Generation Z respondents strongly agreed, 45.0% agreed, and the remaining 4.2% disagreed regarding their understanding of Islam and environmental issues. These findings reflect a positive orientation toward comprehending the zero-waste concept and its interconnection with the Islamic principle of *khilafah* in relation to environmental concerns. The high proportion of respondents who agreed or strongly agreed demonstrates how religious values can effectively contribute to raising awareness about the importance of environmental stewardship.

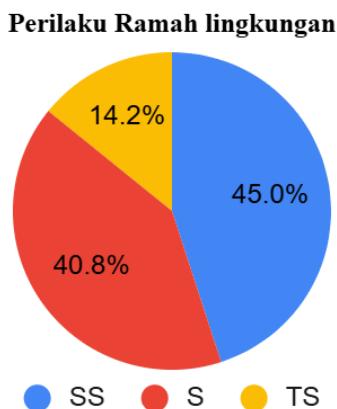
Religion serves as a fundamental basis that can reinforce personal convictions and offer positive guidance in shaping community attitudes and behaviors. The higher an individual's level of religious understanding, the more likely they are to develop environmental awareness and engage in pro-environmental behaviors. As highlighted by Nurulloh,<sup>14</sup> Islamic education can foster a heightened environmental consciousness among its adherents. Therefore, the concept of *khilafah* becomes an essential element, emphasizing the human responsibility to safeguard the environment, particularly within the university student community.

In addition, Islamic teachings underscore the obligation to preserve and protect the environment as an expression of human accountability before God.<sup>15</sup> Accordingly, the *khilafah* concept carries profound significance in motivating individuals, including university students, to be more attentive and responsive to environmental challenges. With a strong foundation in religious understanding, environmentally positive behaviors can be more effectively cultivated and sustained.

<sup>14</sup> E. S. Nurulloh, "Pendidikan Islam dan Pengembangan Kesadaran Lingkungan," *Jurnal Penelitian Pendidikan Islam* 7, no. 2 (2019): 237, <https://doi.org/10.36667/jppi.v7i2.366>.

<sup>15</sup> Sutoyo, "Revolusi Paradigma Perlindungan dan Pengelolaan Lingkungan Hidup di Indonesia," *Jurnal Pendidikan Pancasila dan Kewarganegaraan* 28, no. 1 (2015): 56–66.

## Environmentally Friendly Behavior



**Figure 2**

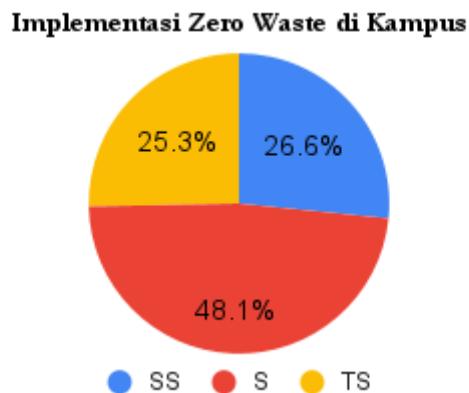
As presented in the preceding table, responses related to environmentally friendly behaviors within the campus context revealed that 45.0% of respondents strongly agreed, 40.8% agreed, while 14.2% disagreed. The findings indicate that although a significant proportion of respondents demonstrate positive environmentally responsible practices, a considerable minority — 14.2% — have yet to consistently adopt eco-friendly behaviors on campus. This includes actions such as reducing plastic waste, avoiding single-use items, and opting for environmentally sustainable products.

Nevertheless, it is noteworthy that the overall awareness and practice of environmentally friendly behavior remain relatively high. Environmental problems frequently originate from human behavior, making behavior change a critical starting point for addressing these challenges. As emphasized by La Fua,<sup>16</sup> transforming negative habits into pro-environmental practices is fundamental to resolving environmental issues. Therefore, educational initiatives and awareness-raising campaigns on campus should be further strengthened to support the adoption of sustainable behaviors among students and the wider academic community.

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<sup>16</sup> Jumarddin La Fua, "Eco-Pesantren; Model Pendidikan Berbasis Pelestarian Lingkungan," *Al-TA'DIB: Jurnal Kajian Ilmu Kependidikan* 6, no. 1 (January 1, 2013): 113–125.

## Implementation of Zero-Waste Practices on Campus



**Figure 3**

Regarding the implementation of zero-waste initiatives, the results indicate that 40% of respondents strongly agreed, 45% agreed, and 15% disagreed with the feasibility of applying zero-waste practices on campus. These figures demonstrate a relatively high level of agreement among respondents about the potential for zero-waste adoption within the university environment. Based on the collected data, many students expressed enthusiasm for participating in zero-waste activities and were willing to incorporate zero-waste principles into their daily habits. However, a substantial proportion of students also perceived that their campus environment remained insufficiently proactive in educating and supporting them on the importance of zero-waste practices.

The application of zero-waste principles on campus could begin with simple, practical steps, such as carrying reusable water bottles and choosing eco-friendly products.<sup>17</sup> Nevertheless, significant challenges remain, including the availability of supporting facilities and adequate educational initiatives from the campus itself. Structured environmental education programs can enhance students' awareness and preparedness to adopt sustainable lifestyles,<sup>18</sup> thereby enabling universities to more effectively facilitate and mainstream zero-waste behaviors within their academic communities.

<sup>17</sup> R. Rarasati and T. Pradekso, "Pengaruh Terpaan Berita Satwa Laut yang Mati Akibat Sampah Plastik dan Kampanye Zero Waste terhadap Perilaku Pengurangan Penggunaan Kantong Plastik," *Interaksi Online* 7, no. 4 (2019): 295–304.

<sup>18</sup> S. Hasnidar, "Pendidikan Estetika dan Karakter Peduli Lingkungan Sekolah," *Jurnal Serambi Ilmu* 20, no. 1 (2019): 97–119.

## Barriers to Zero-Waste Adoption



**Figure 4**

In relation to barriers encountered during the implementation of zero-waste lifestyles, 45% of respondents strongly agreed, 40.8% agreed, and 17% disagreed that there were significant obstacles in applying zero-waste principles, particularly within the campus setting. These findings highlight that students frequently face substantial challenges in consistently adopting zero-waste behaviors. Moreover, most respondents believed that the adoption of zero-waste practices would be more feasible if supported by campus policies and facilities, such as the provision of refillable water dispensers, enabling students to use reusable bottles rather than purchasing single-use bottled water.

The most prominent challenges to overcome include habits of improper waste disposal, unclean living patterns, and wasteful consumption behaviors.<sup>19</sup> These observations align with the present study's findings, which indicate that despite a generally high level of environmental awareness among respondents, the practical implementation of pro-environmental behaviors remains hampered by various obstacles. Therefore, coordinated efforts are required to address these challenges, including comprehensive institutional support, policy reinforcement, and improvements in campus infrastructure, to nurture and sustain a zero-waste culture among the student population.

## CONCLUSION AND RECOMMENDATIONS

Based on the data obtained, it is evident that Generation Z exhibits a relatively high level of awareness and understanding regarding the importance of environmental stewardship through the zero-waste concept. This perspective is closely tied to the Islamic concept of *khilafah*, wherein humans are viewed as stewards of the earth with an inherent moral and religious responsibility to protect it. Respondents agreed that Islam encourages

<sup>19</sup> Herdiansyah, "Eco-Pesantren as a Basic Forming of Environmental Moral and Theology," *Kalam* 12, no. 2 (2018): 303–326, <https://doi.org/10.24042/klm.v12i2.2834>.

environmentally friendly behavior, reflecting a positive understanding of the obligation to safeguard the environment by adopting zero-waste practices as part of their ethical and religious duties. However, the findings also reveal the existence of considerable barriers to the practical implementation of zero-waste principles.

Despite these encouraging attitudes, several limitations emerged in the adoption of zero-waste practices among Generation Z in relation to the *khilafah* concept. These include the lack of adequate recycling facilities, limited practical knowledge, a continued reliance on single-use products, and cultural or social obstacles. Addressing these challenges requires a more comprehensive strategy. Future research is therefore recommended to focus on the development of recycling infrastructure, practical educational programs, and evaluations of alternative eco-friendly products. Additionally, further investigation into the influence of social norms that hinder zero-waste adoption is warranted.

It is also essential to explore the role of religious leaders and institutions in promoting zero-waste initiatives, as well as to assess the effectiveness of economic incentives in encouraging the use of environmentally friendly products. Moreover, the development of community empowerment programs committed to zero-waste principles could foster more sustainable behavior change. Through such multifaceted efforts, the implementation of zero-waste practices can become more effective and better aligned with the religious values held by the community.

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