

## The relationship between minimalist lifestyle and food waste reduction behavior of generation Z in Semarang, Indonesia.

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World Journal of Advanced Research and Reviews, 2025, 28(02), 2176-2181

Publication history: Received 13 October 2025; revised on 22 November 2025; accepted on 24 November 2025

Article DOI: <https://doi.org/10.30574/wjarr.2025.28.2.3917>

### Abstract

Food waste is a pressing global challenge with substantial environmental, economic, and social consequences. Generation Z, characterized by dynamic consumption patterns and increasing exposure to sustainability discourses, represents a crucial demographic for understanding the drivers behind food waste reduction intentions. This study aims to examine the relationship between minimalist lifestyle orientation and the intention to reduce food waste among Generation Z, while also assessing the roles of environmental concern, ethical consumption, awareness of behavioral consequences, determination of responsibility, personal norms, and self-reporting behavior. A quantitative research design was implemented, involving 104 Generation Z respondents who completed an online Likert-scale questionnaire. Data were analyzed using Pearson correlation to determine the strength and significance of associations between the variables. The results reveal that environmental concern, ethical consumption, awareness of behavioral consequences, personal norms, and self-reporting behavior are significantly and positively correlated with the intention to reduce food waste. In contrast, minimalist lifestyle and determination of responsibility show no significant correlation with this intention. These findings indicate that psychological and ethical factors are more influential than lifestyle orientation in shaping young consumers' motivation to reduce food waste. The study contributes valuable insights for designing targeted educational initiatives and sustainability programs aimed at promoting responsible food practices among Generation Z.

**Keywords:** Correlation; Food waste; Generation Z; Semarang

### 1. Introduction

Food waste has become a significant global challenge, contributing to resource depletion, economic losses, and environmental degradation. Young consumers including Generation Z play a substantial role in shaping food consumption patterns, yet studies show that this group tends to generate higher levels of avoidable food waste due to irregular routines, impulsive buying, and limited cooking or meal-planning experience (1) (2) (3) (4). At the same time, Gen Z is also recognized for its heightened awareness of sustainability issues and lifestyle trends that emphasize intentionality and reduced consumption (5) (6).

One emerging lifestyle that aligns with sustainability values is the minimalist lifestyle, which promotes purposeful living by reducing excess possessions, simplifying daily habits, and cultivating mindful consumption (7). Minimalism encourages individuals to adopt behaviors such as purchasing only what is necessary, reducing clutter, and aligning consumption with personal values rather than social pressures (8) (9). When applied to food-related behaviors, minimalism can manifest as more deliberate grocery shopping, thoughtful meal planning, reduced impulse purchases, and greater appreciation for resource efficiency (10).

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Existing literature highlights that minimalist principles may positively influence sustainable consumption, but research specifically examining its impact on food waste reduction behavior among Generation Z remains limited (11) (12). Most studies address food waste from the perspectives of awareness, household habits, or environmental concern, but few integrate lifestyle-based frameworks such as minimalism (7). Given Gen Z's dual identity as both sustainability advocates and active consumers, understanding the relationship between their minimalist tendencies and food waste behavior is essential.

In addition to minimalism, several psychological and value-based factors may shape food waste reduction behavior. Environmental concern can motivate individuals to avoid waste due to its ecological impact. Ethical consumption reflects moral considerations in purchasing and consumption decisions, including fairness, responsibility, and sustainability (13) (14). Theories such as the Norm Activation Model (NAM) highlight the importance of Awareness of Behavioral Consequences, Determination of Responsibility, and Personal Norms, which explain how individuals develop moral obligations toward pro-environmental actions.

Despite the growing interest in sustainable lifestyles and food waste behavior, limited empirical research integrates these multiple factors: minimalism, ethical values, and personal norms within the context of Generation Z. Understanding how these variables interact is crucial for designing effective interventions, educational programs, and campaigns to reduce food waste among young populations..

This research aims to explore whether adopting a minimalist lifestyle is associated with reduced food waste behaviors among Generation Z. By examining behavioral, psychological, and value-driven factors through empirical data, the study provides insights that support sustainability education, policy development, and targeted interventions for young consumers.

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## 2. Material and Methods

### 2.1. Research Design and Participant

A quantitative research design was employed using a Likert-scale questionnaire to analyze the influence of a minimalist lifestyle and related psychological and ethical factors on food waste reduction behavior among Generation Z. A total of 104 Generation Z respondents (approximately 17–20 years old) participated in the study. Participants were recruited through online platforms, and university networks. The research instrument consisted of a structured questionnaire divided into seven variable groups, each measured with Likert-scale items (1 = strongly disagree to 4 = strongly agree). The questionnaire was distributed online via Google Forms, where respondents first received an explanation of the study's purpose and provided informed consent before participating; all responses were collected voluntarily and anonymously.

### 2.2. Data analysis

Data analysis in this study employed both descriptive and inferential statistical techniques, with a primary focus on regression analysis to examine the influence of key variables on food waste reduction behavior. Descriptive statistics were used to summarize respondent characteristics and to identify general patterns within each construct. Prior to conducting regression, reliability testing using Cronbach's Alpha was performed to ensure internal consistency of the Likert-scale items. A multiple regression analysis was then applied to assess the extent to which the minimalist lifestyle, environmental concern, ethical consumption, awareness of behavioral consequences, determination of responsibility, and personal norms predict food waste reduction behavior among Generation Z. This regression approach enabled the identification of significant determinants and the measurement of the strength and direction of their relationships with food waste reduction practices.

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## 3. Results and Discussions

This section presents the findings of the study and provides an in-depth discussion of the relationships between the variables examined. The analysis focuses on understanding how the minimalist lifestyle, environmental concern, ethical consumption, awareness of behavioral consequences, determination of responsibility, personal norms, and self-reporting behavior relate to Generation Z's intention to reduce food waste. Using Pearson correlation analysis, the study identifies which factors show significant associations and which do not, allowing for a more comprehensive interpretation of the behavioral and psychological determinants influencing food waste reduction. The results are discussed in relation to existing literature and theoretical frameworks, highlighting areas of alignment or divergence

with previous research. This discussion also considers the implications of the findings for sustainability education, behavioral interventions, and future studies aimed at promoting responsible food practices among young consumers.

The data has been tested for its validity and reliability as shown in Table 1

### 3.1. Validity and Reliability Test

The validity test was conducted to ensure that each item within the research variables accurately and consistently measures the intended constructs.

**Table 1** Validity Test

No	Variables	Sig
1	Minimalism life-style (X1)	0.00
2	Environmental concern (X2)	0.00
3	Ethical consumption (X3)	0.00
4	Awareness of behavioral consequences (X4)	0.00
5	Determination of responsibility (X5)	0.00
6	Personal norms (X6)	0.00
7	Self-reporting behavior (X7)	0.00

Source: Primary Data (2025)

The results indicate that all variables Minimalism Lifestyle (X1), Environmental Concern (X2), Ethical Consumption (X3), Awareness of Behavioral Consequences (X4), Determination of Responsibility (X5), Personal Norms (X6), and Self-Reporting Behavior (X7) obtained a significance value of 0.00. This value falls below the 0.05 significance threshold, indicating that all items are valid. Therefore, the research instrument is deemed appropriate for further analysis, as each statement validity represents its respective variable (15).

A reliability test was conducted to evaluate the internal consistency of the measurement instrument and to determine whether the items used in the study reliably measure the intended constructs. The results of the reliability analysis, assessed using Cronbach's Alpha, show a coefficient value of 0.647 for the seven items included in the instrument. According to commonly accepted standards, a Cronbach's Alpha value above 0.60 indicates acceptable reliability for exploratory research (16). Therefore, the instrument demonstrates a satisfactory level of consistency and can be considered reliable for further statistical analysis.

**Table 2** Reliability Test

Reliability Statistics	
Cronbach's Alpha	N of Items
0.647	7

Source: SPSS Output (2025)

The correlation analysis was conducted to examine the strength and direction of the relationships between the independent variables and the dependent variable in this study. This statistical test helps determine whether changes in one variable are associated with changes in another, providing valuable insights into the interconnectedness of the constructs being measured. By analyzing the significance values and correlation coefficients, the results offer an empirical basis for understanding how minimalist lifestyle, environmental concern, ethical consumption, personal norms, and related behavioral factors contribute to food waste reduction behavior among Generation Z. The following section presents the findings of the correlation test in detail.

**Table 3** Correlation Test

No	Variables	Sig	Remarks
1	Minimalism life-style (X1)	0.100	Not significant
2	Environmental concern (X2)	0.043	Significant
3	Ethical consumption (X3)	0.000	Significant
4	Awareness of behavioral consequences (X4)	0.000	Significant
5	Determination of responsibility (X5)	0.180	Not Significant
6	Personal norms (X6)	0.000	Significant
7	Self-reporting behavior (X7)	0.000	Significant

Source: Primary data processed (2025)

The correlation analysis shows varying levels of association between the independent variables and the intention to reduce food waste. The variable Environmental Concern (X2) demonstrates a significant relationship with a p-value of 0.043, indicating that higher environmental awareness is associated with a stronger intention to reduce food waste among Generation Z respondents (12). Ethical Consumption (X3) also shows a highly significant correlation ( $p = 0.000$ ), suggesting that individuals who practice ethical consumption are more likely to express an intention to minimize food waste (17) (18).

Similarly, Awareness of Behavioral Consequences (X4) exhibits a significant correlation ( $p = 0.000$ ), meaning that respondents who understand the negative impacts of food waste tend to have higher intentions to reduce it (19). Personal Norms (X6) also show a significant association ( $p = 0.000$ ), indicating that internal moral values play an important role in motivating individuals to act more responsibly in food management (20). In addition, Self-Reporting Behavior (X7) is significantly correlated with the intention to reduce food waste ( $p = 0.000$ ), suggesting that individuals who monitor or reflect on their own food-related behaviors are more likely to intend to reduce waste (21).

On the other hand, Minimalist Lifestyle (X1) with a p-value of 0.100 and Determination of Responsibility (X5) with a p-value of 0.180 do not show significant correlations with the intention to reduce food waste. This implies that in this sample, adopting a minimalist lifestyle and feeling personally responsible for food waste do not have a measurable association with respondents' intentions to reduce food waste. This implies that in this sample, adopting a minimalist lifestyle and feeling personally responsible for food waste do not have a measurable association with respondents' intentions to reduce food waste (7).

#### 4. Conclusion

This study explored the relationship between minimalist lifestyle orientation and the intention to reduce food waste among Generation Z, while also examining environmental concern, ethical consumption, awareness of behavioral consequences, determination of responsibility, personal norms, and self-reporting behavior. The results demonstrate that five variables environmental concern, ethical consumption, awareness of behavioral consequences, personal norms, and self-reporting behavior have significant positive correlations with the intention to reduce food waste. These findings highlight the importance of psychological awareness, moral values, and reflective behavior in encouraging sustainable food practices among young consumers. In contrast, minimalist lifestyle and determination of responsibility do not show significant associations with food waste reduction intention, suggesting that lifestyle simplification alone is insufficient to drive food-related behavioral change in this demographic. Overall, the study emphasizes that ethical and cognitive factors play a more influential role than lifestyle orientation in shaping food waste reduction intentions among Generation Z. These insights can guide the development of targeted educational programs, behavioral interventions, and sustainability campaigns aimed at strengthening young consumers' commitment to reducing food waste. Future research may consider expanding the sample size, incorporating qualitative methods, or examining additional behavioral predictors to deepen understanding of this issue.

## Compliance with ethical standards

### Acknowledgement

The authors would like to express their sincere gratitude to all respondents who generously devoted their time to participate in this study. The authors also thank the research colleague for valuable assistance and constructive insights throughout the research process. This study did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

### Disclosure of conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this manuscript. All research activities, data analysis, and interpretations were conducted independently, without any financial, personal, or institutional relationships that could inappropriately influence the work.

### Ethical Approval

This study was conducted in accordance with ethical research standards. All participants were informed about the purpose of the study, and their participation was entirely voluntary. Informed consent was obtained prior to data collection. The confidentiality and anonymity of all respondents were strictly maintained, and no identifiable personal information was recorded or disclosed.

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