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MORALITY BEFORE KNOWLEDGE

A systematic literature review and future research agenda on the reducing single use plastic in the context of consumer intention

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ABSTRACT
Background: The onslaught of plastic pollution is largely driven by consumer activities that have widespread environmental and ecological impacts. This study examines the scientific literature on consumer intention related to reducing single-use plastic, a pivotal factor of the United Nations' Sustainable Development Goals (SDGs) for 2030, specifically the goal of responsible production and consumption. **Methods:** The data used in this analysis were sourced from the gap in the Scopus database using keywords such as reduce* and plastic* and behavior* and intention*, covering 49 publications in English over the last ten years (from 2015 to 2025). Five thematic clusters emerged using NVivo and VOSviewer for thematic analysis, highlighting the multifaceted nature of consumer intention. **Findings:** Bibliometric analysis identified four clusters: behavior change and plastic consumption, the actor of reducing and managing single-use plastic, policy intervention and decision-making, and human drivers and plastic pollution. Each cluster was expanded into a series of meaningful codes through NVivo-assisted thematic analysis. **Conclusion:** The success of any effort in reducing single-use plastic inevitably relies on how the problem is defined and perceived. In this sense, we also conclude several factors that contribute to reducing single-use plastic: source of single-use plastic usage, single-use plastic behavior, the type of single-use plastic, production, and management. **Novelty/Originality of this article:** This comprehensive and cross-contextual study examines consumer intentions toward reducing single-use plastic use. Unlike previous reviews that focus on individual sectors, this study systematically integrates evidence from households, restaurants, cafés, and corporate settings. This approach enables the identification of overarching behavioral patterns, context-specific drivers, and underexplored research areas, contributing to a comprehensive theoretical and practical understanding of single-use plastic reduction. Furthermore, this study has outlined three promising future research directions that aim to enhance the quantity and quality of this study.

KEYWORDS: consumer intention, reducing single-use plastic, responsible consumption, sustainability.

1. Introduction

The Sustainable Development Goals by the United Nations in 2015 proposed to achieve a better and more sustainable future for all by 2030The 12th pillar, which pertains to responsible production and consumption, marks the road to sustainable development

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(Ardra & Barua, 2022). Reducing single-use plastic has become one of the key strategies for achieving this goal because plastic waste remains a major environmental challenge worldwide. Single-use plastic is a type of plastic that is used only once, and its waste is a associated with this pillar. Single-use plastic waste is harmful to the environment because it decomposes into microplastics and nano-plastics (Vega-Herrera et al., 2023). Several studies have discovered microplastic pollution in the deep ocean, Arctic snow, Antarctic ice, shellfish, table salt, drinking water, beer, and floating in the air or falling with the rain across mountains and cities (Lim, 2021). Microplastics entering the environment in small sizes and fragmenting into small sizes through physical, chemical, and biologic degradation processes intensify this issue (Kim et al., 2022). Microplastics can disrupt cells and tissues as foreign objects, thereby inducing inflammatory responses in human lung tissue (Lim, 2021) and plant leaf tissue (Li et al., 2025).

The linear economic model "take, use, dispose" is still popular in consumer behavior (Arijeniwa et al., 2024). Instead, consumers can implement the concepts of reduce, reuse, and recycle through effective communication (Heidbreder et al., 2021). Consumer intention to reduce single-use plastic was positively correlated with age, education, and income (Zhao et al., 2025). Reducing the use of single-use plastic by using reusable cutlery is considered impractical and less clean (Theobald et al., 2024). Single-use plastic recycling in household consumers is significantly influenced by factors such as age, type of residence, time dedicated to recycling activities, proximity to collection points, and willingness to improve, all of which are also closely associated with consistent plastic waste sorting behavior (Reijonen et al., 2021).

Despite the widespread prevalence of global microplastic pollution, only one indicator (14.1.1b) under the 14th pillar SDG that focuses on tracking floating plastic debris density and plastic leakage in coastal and marine environments. A plethora of current studies have demonstrated the statistics of plastic waste mismanagement. Global plastic pollution is projected to reach 66.1 metric tons/year in 2050 (Yan et al., 2024). Strategic planning, innovative thinking, and, most importantly, a global united effort are needed to overcome the problem of single-use plastic waste (Rangel-buitrago et al., 2023). The problem began with the initial production of plastic, which has increased from 2 million to 368 million tons, without the development of integrated waste management systems (Rafey & Siddiqui, 2023). The presence of a layer of plastic on the earth indicates the start of the Anthropocene, a period classified as human life in the plastic age (Porta, 2021; Shruti et al., 2023). This presents delineates challenges for organizations and governments attempting to implement reliable monitoring and reporting of other SDGs, including Goal 12, because consumers are required to ensure sustainable production and consumption and to reduce single-use plastic waste (Walker, 2021).

Previous studies on single-use plastic have exposed significant research gaps that merit deeper and more systematic investigation. Previous studies have examined consumer characteristics, policy interventions, and methodological approaches. However, these findings remain fragmented across different research contexts and disciplines. Nevertheless, notable gaps remain across the three previously identified domains. This study purposefully analyses published research from various scientific sources to organize it within a defined analytical framework.

Following the introduction of the sustainable development agenda by the United Nations, the terms for single-use plastic are widely recognized. This study investigated consumers' intention to reduce single-use plastic usage by comprehensively reviewing scholarly studies on the intention of single-use plastics. Initially, this research primarily explores the correlation between consumer intention and single-use plastic usage, particularly in the end consumer's context. The relevant studies mostly have variability in methodologies, variables, and outcomes. This study also seeks dimensions and methods for variables. This study is distinguished by its in-depth analyses of single-use plastic-related consumer intention. Conducting a comprehensive single-use plastic literature review is crucial for many reasons: systematic literature reviews help researchers

understand dynamic patterns in households, restaurants, cafés, and companies. Hence, numerous studies highlight gaps in the existing literature, including those on demographics, geography, and innovations.

The objective of this study is to identify the trends in scholarly publication on single-use plastic intention over the past decades and to identify themes that will emerge as promising for future research agendas. Topics in environmental, social, and economics build a more effective reduction program for reducing single-use plastic. Understanding the harmful effects of microplastics in the environment, how people behavein single-use plastic consumption, circular economics for product packaging, alternative models, and technology to combat microplastics from the source. Single-use plastic waste costs discourage usage, save businesses money, and harm the environment. The sustainability review provides complete solutions. The related theory, theme, or method can be based on a comprehensive literature overview. In result, the synthesization supports prior studies to strengthen the foundation of knowledge.

2. Methods

2.1 Research design

This Systemic Literature Review (SLR) adopts a theoretical framework as the foundation for a substantial contribution to academic discourse (Sauer & Seuring, 2023). This review employs two complementary analytical approaches: bibliometric analysis and thematic analysis. Generally, bibliometric analysis relies on software support, such as VOSviewer, for conducting systematic literature reviews using visualization methods, such as density, network maps, and timelines of co-citation and co-occurrence of authorship collections from various journals through websites (Bukar et al., 2023). The second format is thematic analysis. Thematic analysis is extensively applied across various disciplines and systematically adapted to suit positivist-oriented methodologies. A comprehensive approach is offered to develop theoretical conceptualizations within qualitative research (Naeem et al., 2023). NVivo 12 Plus software was used to systematically identify themes and construct coding nodes, which served as the basis for exploring and interpreting consumers' intentions (Widayat et al., 2025). Following the coding process, the identified themes were interpreted in relation to the research objectives and existing theoretical perspectives to generate meaningful insights. The relationships among the identified themes are illustrated in a conceptual framework to support the interpretation of the review findings.

2.2 Data collection

The review was delimited to research undertaken from 2015 to 2025 to preserve contemporaneity and relevance with the SDG period (Jambeck et al., 2015). The Scopus was selected because it is one of the largest citation databases of peer-reviewed literature and provides structured bibliographic information suitable for systematic reviews, bibliometric mapping, and text mining (Deng & Romainoor, 2022). The article selection process followed the procedure illustrated in Figure 1. was determined following the research procedure described in Figure 1.

In developing the research strategy, terms were identified and keywords were represented using keywords derived from scoping searches and disciplinary expertise in the subject matter. The search was conducted in the Scopus database using the keywords "reduce" AND "plastic" AND "behavior*" AND "intention*" within the title, abstract, and keywords fields, yielding 110 records. These articles in the database cover the period from 2015 to 2025 (as of the survey date on January 15, 2026). After the review of the retrieved articles, only those published in English, open access, and some other language publications were excluded. Seventy articles were systematically screened using the predefined criteria.

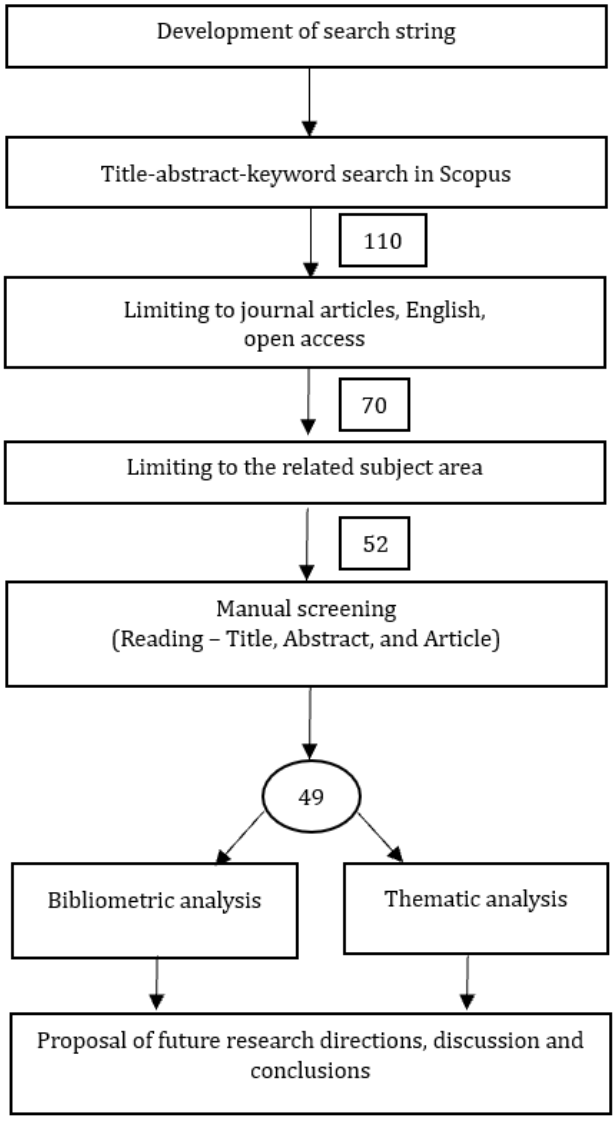

Fig. 1. The research review process

This study was included in the review with the following inclusion criteria: focused on single-use plastic usage from a producer, distributor, and consumer perspective, addressed peer-reviewed journal articles, including empirical studies (quantitative, qualitative, or mixed-methods) and relevant review articles, and studies investigating consumer intention or behavioral determinants related to reducing single-use plastics. This study excluded: technical laboratory studies, conference papers, and publications without governance or single-use plastic relevance. The remaining 52 articles were further assessed for subject relevance based on the predefined inclusion criteria. Finally, 49 studies met all eligibility criteria after removing duplicate records and excluding articles with incomplete information or insufficient relevance.

The evaluation framework was conducted using a defined string of keywords tailored to the research field illustrated in Figure 1. This study adopts a hybrid systematic review methodology that integrates three complementary approaches: screening stage for transparent article identification, VOSviewer 1.6.20 for bibliometric mapping to identify structural knowledge patterns, and NVivo 12 Plus for thematic synthesis. This triangulated approach ensured a rigorous and comprehensive analysis, thereby providing both methodological reliability and deeper contextual interpretation.

2.3 Data analysis

This study examines existing scholarly work on the Sustainable Development Goals regarding consumer level of single-use plastic usage. The articles were reviewed based on predefined inclusion criteria, focusing on thematic relevance and the examination of causal factors and effects of single-use plastic usage. VOSviewer 1.6.20 and NVivo 12 Plus were used to visualize thematic structures and their associations. VOSviewer was used to visualize knowledge structures, citation patterns, and publication trends. The resulting clusters then guided the subsequent thematic analysis conducted using NVivo 12 Plus. Each selected article was systematically coded, allowing the researchers to further interpret and elaborate on the thematic structure represented by the bibliometric clusters. The selected articles were reduced and simplified to align with the research objectives through coding methods and thematic analysis options using the Non-Numerical Unstructured Data Indexing Vivo (NVivo) software (Dhakal, 2022). The selected articles were imported into NVivo 12 Plus for qualitative content analysis. The coding process followed an inductive thematic approach. First, all articles were thoroughly read to gain familiarity with the data. Second, open coding was conducted to identify recurring concepts related to single-use plastic reduction, management practices, policy interventions, and consumer behavior. This process generates an initial set of codes. Third, similar codes were grouped into broader categories through iterative comparison and refinement. Finally, these categories were synthesized into four overarching themes: behavior change and plastic consumption, actors involved in reducing and managing single-use plastic, policy intervention and decision-making, and human drivers of plastic pollution codes and themes were repeatedly reviewed by the author throughout the coding process to ensure consistency and conceptual clarity (Widayat et al., 2025).

3. Results and Discussion

3.1 Bibliometric Analysis

The quantitative approach uses bibliometric analysis to explore and scientific data analysis to determine trends in consumer behavior (Iniesta-Bonillo et al., 2025). The final screened articles were assessed, and 49 articles that met the criteria were identified. Correlational analysis of terms related to consumer intentions regarding single-use plastic usage is applied. VOSviewer was used to analyzethe data distribution of the keywords through interpretation and a comprehensive network between keyword, authors, journals, countries, and institutions. Network analysis techniques, including co-citation analysis, bibliographic coupling, and keywords co-occurrence, were employed to identify research clusters and underlying intellectual patterns. A threshold of three was used to identify salient thematic groups for keyword co-occurrence. A key research question is which methods have proven most effective for studying single-use plastic behavior, specifically the methodological approaches used and the dimensions defining the proposed variables.

Single-use plastic consumption and its mitigation constitute a complex and multifaceted issue involving various actors, behaviors, and interdependent systems. Each cluster of constructs in this challenge encompasses single-use plastic usage, environmental sustainability, and waste management. The dynamic in each cluster addresses single-use plastic behavior more effectively. The related themes in this study are presented in Table 1.

The cluster in Figure 2 and its association with the word can be depicted; cluster 1 can be stated as Behavior Change and Plastic Consumption. This cluster integrates Psychology, Marketing, and Sustainability in Times of Climate Crisis and COVID-19. Despite the evolving post-pandemic context, COVID-19 remains a frequently employed research background in academic studies of single-use plastic usage since 2022 (Bekoum Essokolo & Robinot, 2022; Buvár et al., 2025; Gao & Shao, 2022; Mouloudj et al., 2023; Shin et al., 2024a). Moreover, previous studies continue to address climate change, with the primary research focusing on

awareness of the consequences of climate change (Hwang et al., 2024) and related to environmental behavior (Bekoum Essokolo & Robinot, 2022; Gu & Zhu, 2023).

The framework of the Theory of Planned Behavior (TPB) and the Norm Activation Model (NAM) reveals how this theory and model leads to the discovery of customers' behavioral intentions (Shin et al., 2024b; Tran et al., 2024) and students' reusable/cloth bag use behavior and charge acceptance (Vassanadumrongdee et al., 2020). Schwartz's (1977) Norm Activation Model incorporates components such as the ascription of responsibility, awareness of consequences, and personal norms to explain pro-social behavioral intention. This model underscored the pivotal role of consumers' beliefs in reducing single-use plastic through their intelligence, desirability, beneficial choices, and interest engagement. The Theory of Planned Behavior by Ajzen (1991) also inspired previous authors who reveal the significant importance of personal norms and planning behavior that enhance public awareness and knowledge regarding environmental protection. This finding indicates that TPB is the dominant theoretical framework in studies examining consumer intention to reduce single-use plastic as their theoretical framework from the wide theme of climate change, consumer intention to use single-use plastic packaging, waste sorting management to purchasing intention, and government regulation.

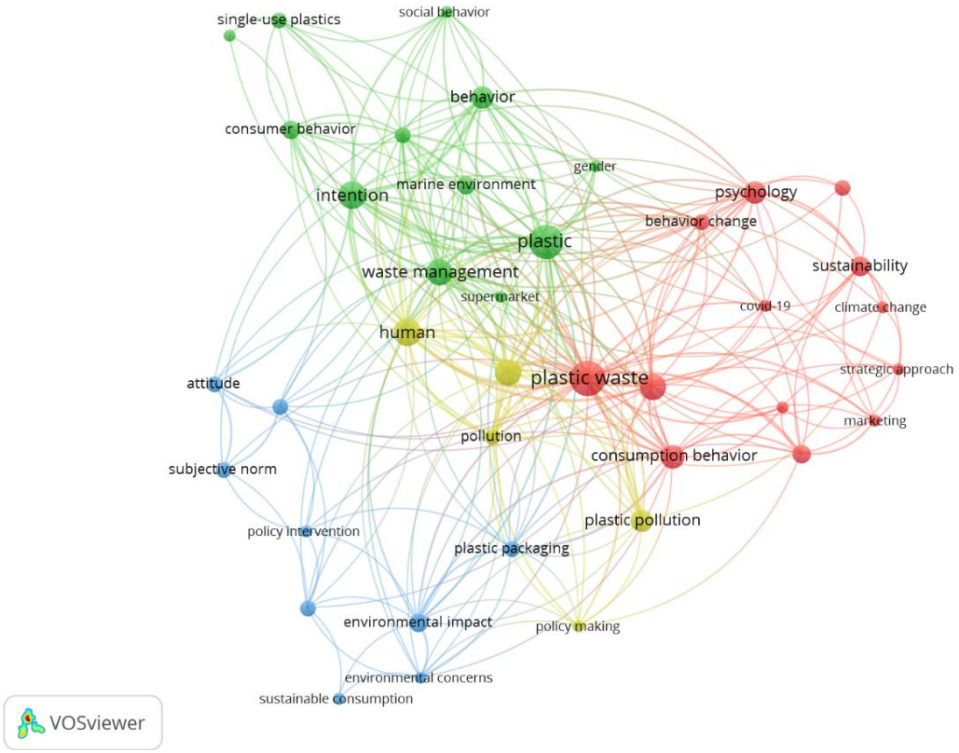

Fig. 2. Association strength from VOSViewer

Reducing the use of single-use plastic bags relies on consumers' pro-environmental behavior. The main challenge is identifying its driving factor and promoting such behavior (Steg et al., 2018). Pro-environmental behavior has been used in sports spectatorship (Hwang et al., 2024) and single-use plastic bag implementation in Chile (Cristi et al., 2020). Environmental attitudes, perceived convenience, and economic drivers are causal factors that drive waste sorting engagement (Negash et al., 2021), plastic reduction advocacy (Chiu et al., 2025), psychological distance and including self-efficacy messages to reduce single-use plastic (Cooper et al., 2025), and microplastic pollution predicted R-behavior (reduce plastic consumption, refuse microplastics consumption, buy green products, sort litter) intention (Garcia-Vazquez et al., 2022). Implementation of TPB reveals significantly reduced disposable plastic bag use due to the policy (Shahrabani, 2025a). The various studies also employed behavioral intentions on several topics, such as 3Rs application on plastic usage (Chun et al., 2020), eco-friendly packaging (Moshood et al., 2025), the

sustainable use of plastic shopping bags (Cristi et al., 2020; Neef et al., 2023), to reduce single-use plastic bottle water use (Borusiak et al., 2021; Soubra et al., 2025), biodegradable straws (Tanakinjal et al., 2021), purchasing reduced plastic products (Villanueva et al., 2024), and research about discounting customers who have their own cloth bags (Batooli et al., 2022). These extensive consumer research efforts have been directed toward reducing plastic use.

Cluster 2 refers to the actor responsible for reducing and managing single-use plastic. Demographic characteristics emerge as a significant determinant in the reduction of single-use plastic. This cluster highlights the key actors involved in single-use plastic reduction, with particular emphasis on consumers and the demographic characteristics that influence their environmental behavior. Gender, age, and education significantly influenced the willingness to use eco-friendly alternatives (Garcia-Vazquez et al., 2022; Phan et al., 2025), and households with incomes also moderated the relationship between driving factors and intentions (Tran et al., 2024). Females are more positive toward reducing plastics through their support for plastic ban policies and have a stronger intention to bring reusable bags (Li et al., 2022). Women adopted more R-behaviors (reduce plastic consumption, refuse microplastic consumption, buy green products, sort litter) than men, whereas men were more sensitive to the proposed nudges than women (Garcia-Vazquez et al., 2023).

Tabel 1. Word cluster with the association strength method

Cluster	Theme
Cluster 1 – Red (13 items)	behavior change, climate change, consumption behavior, COVID-19, marketing, norm activation model, plastic consumption, plastic waste, psychology, public attitude, strategic approach, sustainability, theory of planned behavior
Cluster 2 – Green (12 items)	behavior, consumer behavior, gender, green marketing, intention, marine environment, plastic, pro-environmental behavior, single-use plastics, social behavior, supermarket, waste management
Cluster 3 – Blue (9 items)	attitude, behavioral intention, decision-making, environmental concerns, plastic packaging, policy intervention, subjective norm, sustainable consumption, environmental impact, policy intervention, sustainable consumption
Cluster 4 – Yellow (5 items)	human, plastic pollution, policy making, pollution, recycling

Beyond individual consumers, the literature also highlights the important role of businesses in promoting sustainable consumption. Accordingly, the industry is required to implement genuine sustainability practices to strengthen consumer trust and ensure that product development and marketing strategies are aligned with environmental responsibility (Rahman et al., 2025). For example green products are an alternative to plastic bags (Zulganef et al., 2019). Plastic usage reduction is significantly and positively moderated by recycling attitudes and perceived effectiveness of demarketing efforts (Yaqub et al., 2023).

On the other hand, the marine debris is recognized and documented as a persistent environmental pollution in the ocean ecosystem. In the absence of improved waste management practices, the flux of plastics could increase to the oceans (Jambeck et al., 2015). The study showed that neither physical impacts on biota nor greenhouse gas emissions from marine degradation determine the endpoint of ecosystem damage (Zeilerbauer et al., 2024). Understanding behavioral determinants enables stakeholders to implement effective strategies to reduce plastic use and protect marine life (Badawi et al., 2024). This perspective can positively affect behavioral intentions to reduce plastic waste and restore marine biodiversity (Yan & Cortese, 2023), and it can be supported by environmental responsibility to the ocean which predicted the intention to use eco-friendly alternatives (Garcia-Vazquez et al., 2022). Promoting alternatives to use single-use plastic is a critical strategy for mitigating marine debris. However, it is a practical challenge since it is probably a charging scheme (Vassanadumrongdee et al., 2020). Thus, an informal

coalition based on pro-environmental behavior is necessary to increase public concern about plastic pollution (Cristi et al., 2020). For example, campaigns highlighting the impacts of littering, along with improved waste facilities and persuasive messaging, may strengthen anti-littering attitudes and intentions (Oduro-Appiah et al., 2023). However, government regulations alone do not have a direct effect in lessening the use of plastic bags (Zulganef et al., 2019). Numerous experts have identified strategies to mitigate the consumption of single-use plastics. This finding indicates that various studies have endeavored to reduce single-use plastic when ordering takeout food in restaurants (Shin et al., 2024b), ethical consumption in supermarkets (Heidbreder et al., 2023), strategic communications in promoting disposable plastics reduction (Bruchmann et al., 2021; Skoric et al., 2022), and its problematic greenwashing (Rahman et al., 2025). Overall, Cluster 2 demonstrates that consumer characteristics, business practices, and collaborative stakeholder actions are the primary actors shaping efforts to reduce single-use plastic consumption.

Cluster 3 pertains to policy intervention and decision-making. Another noteworthy observation is that many scholars have extensively examined policy-related issues. Some variables, such as policy intervention, knowledge, attitude, subjective norms, perceived behavioral control, self-esteem, objective, and subjective, were employed to show the significant factors for environmental sustainability policy outcomes (Chiu et al., 2025; Gu et al., 2023; Kaufmann et al., 2023; Manika et al., 2021; Soubra et al., 2025). These results advance the understanding of stakeholders' decision-making to reduce single-use plastic and the important role of policymakers in impacting their intention and concern for plastic avoidance behavior (Gu & Zhu, 2023; Heidbreder et al., 2023). Policymakers must develop a comprehensive understanding to adopt context-appropriate elements, carefully considering potential benefits and challenges to effectively achieve the intended outcomes of environmental sustainability policies. Consumer innovativeness enhances purchasing responses but requires greater awareness. Environmental attitudes, convenience, and economic factors drive waste sorting, and choosing alternatives is linked to reducing single-use plastic. Overall, the studies in this cluster consistently indicate that policy interventions influence consumer intention both directly and indirectly through behavioral and psychological factors. The findings inform policies promoting ecologically friendly behavior (Borusiak et al., 2021; Negash et al., 2021; Tampubolon et al., 2025).

Cluster 4 addresses human drivers and plastic pollution. In the Anthropocene era, humanity bears responsibility for the environmental consequences of plastic pollution, as reflected in the layer of plastic on earth. The virtual reality experience demonstrated that users acquired knowledge of the recommended actions and showed increased intentions to reduce plastic consumption. In contrast, other researchers employed a video game–based intervention (Bekoum Essokolo & Robinot, 2022; Sungur et al., 2025). Plastic pollution and role models avoiding plastic had no relevant impact on plastic consumption intention (Barkela et al., 2021). The role of ecobrick workshops in raising plastic pollution awareness and encouraging behavioral change (Chin et al., 2025). The findings reveal that self-expression and social pessimism drive engagement and recycling intentions, respectively (Wang et al., 2022). The involved recycling processes do not necessarily offer a clean solution to the issue of excessive plastic use (Roy et al., 2022). Feeling responsible for the ocean predicted the intention to use eco-friendly alternatives, whereas sea frequentation predicted recycling (Garcia-Vazquez et al., 2022). Psychological and physical environments can assist in aligning behavior and intentions (Linder et al., 2021). Overall, this cluster highlights that psychological drivers, environmental awareness, and educational interventions are central to reducing single-use plastic consumption. The addition reinforces the key message represented by Cluster 4.

Beyond the four thematic clusters, several cross-cutting patterns emerged from the reviewed studies. Specifically, on the income variable in households, people with low income less likely to save and used reusable more frequently than people with high-income (Tran et al., 2024). However, another interesting study addressed the improvement of waste separation and recycling in low- and middle-income countries (Mamun & Mohiuddin,

2018; Negash et al., 2021). In addition, the majority of these studies employed student samples. As representatives of emerging generations, university students embody societal trends and play a pivotal role in shaping environmental actions. Evidence suggests that students exhibit considerable concern toward sustainable options, environmental concerns, and intentions to reduce SUP usage (Phan et al., 2025; Soubra et al., 2025; Yan & Cortese, 2023).

Researchers attempt to develop unobservable-dependent and independent variables related to single-use as the focal point of the study. Single-use plastic usage is assessed using many valid indicators, such as reducing single-use plastic, reusing, recycling, behavior, and intention, which are examined using attitudes, subjective norms, and perceived behavior control as independent variables. Some demographic characteristics, such as age, education, household members, and income, are also variables tested in single-use plastic behavior (Chiu et al., 2025; Chun et al., 2020; Tran et al., 2024). Although most studies provide detailed discussions of independent variables, limited research has examined their association with demographic characteristics. These findings suggest that future studies should integrate demographic characteristics with established behavioral constructs to provide a more comprehensive explanation of consumer intention toward reducing single-use plastic.

Most single–use plastic usage-related studies adopt a deductive framework to assess the impact of independent variables on dependent outcomes, followed by qualitative research. The statistical tools used in the logic of deductive thinking are multiple regression for continuous scale data (Garcia-Vazquez et al., 2022; Li et al., 2022), Analysis of Variance (ANOVA) (Cristi et al., 2020; Barkela et al., 2021; Buvár et al., 2025; Garcia-Vazquez et al., 2023), using SPSS IBM software (Hwang et al., 2024; Mouloudj et al., 2023; Phan et al., 2025; Shin et al., 2024b; Vassanadumrongdee et al., 2020), MATLAB (Cooper et al., 2025), and LCA (Zeilerbauer et al., 2024), and non-parametric and descriptive statistics (Buvár et al., 2025). The main assumption is that the variables studied can be directly observed and measured. For instance, reducing single-use plastic use can be assessed through actions such as reducing consumption, refusing plastic products, purchasing green products, and sorting waste.

The predictor variables included gender, education, income, and occupation. In empirical studies, the examined constructs are typically latent and cannot be measured directly but are measured using validated measurement items, such as awareness of single-use plastic, attitudes toward single-use plastics, subjective norms, perceived behavior control, and single-use plastic behavior. To analyze the data, researchers apply statistical techniques suited to the data characteristics, such as Structural Equation Modeling (SEM) or Partial Least Squares (PLS), using software programs like AMOS or SmartPLS (Gu et al., 2023; Shahrabani, 2025b).

The Theory of Planned Behavior, which was initiated by Ajzen (1991), has inspired authors to examine single-use plastic usage at the consumer level. A large number of studies employ the Theory of Planned Behavior as the fundamental framework for implementation research (Batooli et al., 2022; Hwang et al., 2024; Mouloudj et al., 2023). The constructs of TPB consisting of attitudes, subjective norms, perceived behavioral control, intention, and behavior, are used to understand the single-use plastic phenomenon. A substantial body of literature conceptualizes intention and behavioral characteristics as dependent variables, whereas attitudes, subjective norms, and perceived behavioral control are modeled as independent variables. Most surveys adopt a deductive quantitative approach from their population sample. Some studies employ quantitative research experiments (Bekoum Essokolo & Robinot, 2022; Linder et al., 2021; Skoric et al., 2022), and a study applies COM-B as qualitative research (Roy et al., 2022). Moreover, some researchers apply a mixed-methodology that integrates quantitative deductive and qualitative inductive approaches (Moshood et al., 2025; Neef et al., 2023; Tampubolon et al., 2025).

Some demographic characteristics, such as age, education level, household size, and income, also moderate the relationship between driving and behavior intentions. Young

people with face-paced lifestyles tend to prefer convenience practice by using single-use plastic. Lower educational level and lower household members tend to use reusable shopping bags. The higher the income; the more willing they are to use the alternative shopping bag (Tran et al., 2024). In contrast, older respondentscould promote the reduction and recycling of single-use plastic, and people with higher education intended to recycle (Garcia-Vazquez et al., 2022). However, older individuals are more willing to purchase products with less plastic packaging than the younger generation (Heidbreder et al., 2023).

Futhermore, gender emerges as a significant determinant in reducing single-use plastic. Females are more likely to bring reusable bags insteadof single-use plastic bags, and they tend to adopt the practice to reduce, refuse, and waste management. Women are more supportive of plastic ban policies and have a stronger intention to bring a reusable bag (Heidbreder et al., 2023; Li et al., 2022), even though women were less sensitive to the suggested behavioral intentions (Garcia-Vazquez et al., 2023). Another notable finding is the geographical location of the study, as these variables were examined across several countries. This indicates that single-use plastic usage has become a significant concern for researchers in various regions of the world. These findings provide useful evidence for policymakers, government agencies, NGOs, and other stakeholders when designing policies to reduce single-use plastic use.

Countries should implement public policy to address the single-use plastic waste problem, as proposed by the United Nations to "substantially reduce waste generation through prevention, reduction, recycling, and reuse" by 2030 as one of its Sustainable Development Goals. Based on the prior literature review, some countries, such as Norway (Zeilerbauer et al., 2024), demonstrate high SDG performance, whereas others, such as Uganda (Negash et al., 2021), have low scores. This study further explores how reducing single-use plastic contributes to achieving the SDGs, particularly Goal 12 on responsible consumption and production. It will have greater success potential if it employs an integrative approach and interrelated variables.

The bibliometric analysis revealed four major research clusters. These clusters provide a broad overview of the intellectual structure and thematic concentration of the field. However, bibliometric analysis alone can not explain the substantive content underlying these research streams. Therefore, a thematic analysis was subsequently conducted using NVivo 12 to explore the identified clusters' key concepts, relationships, and research trends. Accordingly, this study proposes an integrative framework to guide future research.

3.2 NVivo analysis

The integrative research agenda focuses on analyzing single-use plastic usage behavior from the consumer perspective to achieve sustainable development goals. This study is divided into five primary themes: single-use plastic sources, behavior, production, type, and management. The current study encapsulates determinant insights into consumer behaviors surrounding single-use plastic usage. These themes showed a deeper understanding of the topics represented within the bibliometric clusters and revealed the interconnectedness of the different dimensions of single-use plastic research. As depicted in Figure 3, numerous factors influence consumer behavior related to single-use plastic usage. The first theme, Single-Use Plastic Sources, which outlines the different levels of single-use plastic usage as waste in individuals and communities, such as household and university levels. The second theme, Single-Use Plastic Behavior, highlightshow individual actions, such as the intention to reuse, reduce, recycle, and purchase green products, switch from single-use plastic. The third theme, single-use plastic production, covers the materials, production processes, and outputs across the single-use plastic life cycle. The fourth theme, Type of single-use plastic, includes products such as plastic bottles, plastic bags, plastic straws, plastic packaging, and disposable tableware. The final theme, management, which focuses on the role of institutional management and regulation in controlling single-use plastic usage through structured policies and coordinated efforts.

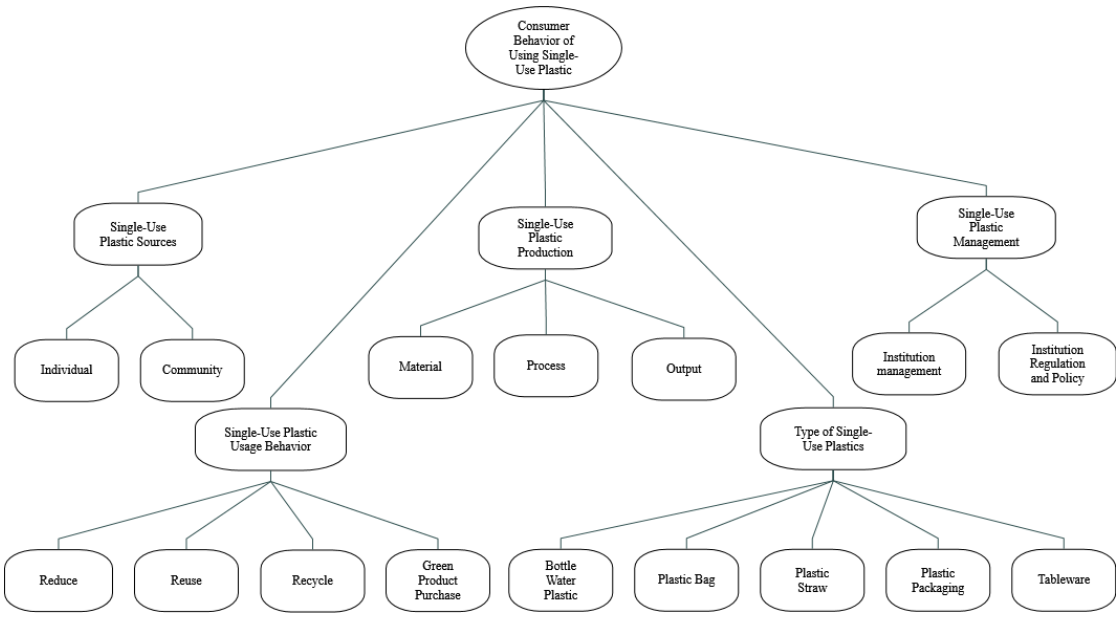

Fig. 3. Consumer behavior of using a single-use plastic integrative framework

In summary, the diagram shows that consumer behavior related to single-use plastic usage is multisource, influenced by individual practices, the production process, the classification of single-use plastic products, and how each institution controls usage and manages waste. Hence, integrated cross-sectoral strategies are required to address single-use plastic consumption. The Sustainable Development Agenda Goal 12 underscores the pivotal role of consumers in achieving sustainable consumption and waste management practices. This study intended to establish the way for a more environmentally conscious society, as illustrated in Fig 3.

A review of existing literature indicates that single-use plastic usage is a complex problem involving sources, individual behavior, production, types of products, and management system. Strategies to reduce single-use plastic usage should encompass consumer characteristics, single-use plastic production optimization, and government regulation enhancement. A comprehensive strategy to reduce single-use plastic usage is necessary to minimize the social, economic, and environmental impacts of single-use plastic and support the global agenda to prevent plastic leakage and enhance the resilience of the region. Figure 3 defines the influence of single-use plastic reduction on consumer behavior.

This framework demonstrates of single-use plastic reduction on single-use plastic usage and addresses the source of potential waste, single-use plastic categories, management system, production processes, and policies. Reducing single-use plastic usage requires a systematic approach that includes behavioral change, management system innovation, and optimization of alternative single-use plastic production and consumption processes. Fig 3 shows the variables that contribute to reducing single-use plastic.

Initially, the theme single-use plastic sources was developed through thematic coding and represents a synthesis of insights derived from bibliometric cluster number 2 (reducing and managing single-use plastic) and cluster number 3 (policy intervention and decision-making). While the bibliometric analysis identified these clusters as distinct research streams, the coding process revealed a substantial overlap in their focus on single-use plastic generation sources. This theme influenced the genesis of single-use plastic usage at multiple tiers: individual, community, household, and university. Sources of single-use plastic usage include individual habits and decisions (individual consumers), social influence, and collective behavior (community, household, and university). Individual and collective environmental concern motivators eventually influence consumer engagement and reduce intention. Individual intention can predict the decision to engage in a behavior, which is shaped by three belief-based factors: attitude, subjective norms, and perceived behavioral control. Moreover, individual intention can predict the decision to engage in a

behavior the gap between sustainable consumption intention and ethical consumption behavior, such as motivating consumers to purchase and utilize eco-friendly items.

Second, single-use plastic behavior was also investigated through thematic coding and emphasized the network of bibliometrik result cluster number 1 (behavior change and plastic consumption) and cluster number 2 (the actor of reducing and managing single-use plastic). Reduce, reuse, recycle is the 3Rs concept, which is a basic practice for managing single-use plastic waste. Reduce is the effort to avoid the use of single-use plastic. For instance, a cloth bag can be used to replace a single-use plastic bag. Reuse practices include donating, selling, and repairing items to extend their lifecycle. For example, preferring to refill water in a bottle rather than purchasing a new bottle. Recycle purchasing the collection, separation, and processing of specific plastics, such as PE, PET, and HDPE. Based on the literature review, most studies investigated the relationship between the 3Rs and attitude, subjective norm, and perceived behavior control, which in turn led to a stronger intention to reduce plastic consumption and production.

Third, the single-use plastic production theme represents cluster number 3 (policy intervention and decision-making) and cluster number 4 (human drivers and plastic pollution). In addition to individual and community behavior, industries are expected In addition to attention to the circular production process, reduce the impact on the environment, and support the government for policy intervention. As the United Nations' Sustainable Development Goals emphasize, the industry must build innovation that reduces the impact of single-use plastics through a sustainable value chain. Conventional single-use plastics, which are petroleum-based in the packaging, sanitation, and agriculture sectors, have bio-based alternative materials emerging as viable options. However, some research has revealed that this product should be designed for circular economy principles, and to efficiently expand recycling infrastructure. In practice, managers and engineers optimize that the production and marketing processes to meet the output for sustainable goods, particularly on reducing plastic pollution.

Fourth, type of single-use plastics. The researcher frequently identified research items based on institutional policies or regulatory frameworks. Thus, this theme was developed by clusters1 (change in behavior and plastic consumption) and 3 (intervention and decision-making). For example, bottle water plastic, plastic bag, plastic straw, plastic packaging, and disposable tableware. The attributes of single-use plastic might differ according to its function, namely, food and beverage containers, packaging, and ancillary items. However, limited discussion suggested that policy interventions should prioritize the reduction of unnecessary plastic consumption while recognizing the continued need for single-use plastics in certain contexts.

Finally, the Single-Use Plastic Management theme focuses on institutional governance and policy implementation. These elements underscore the role of institutional management and administration in institutional regulation or policy. Cluster number 2 (the actor of reducing and managing single-use plastic) and cluster number 3 (policy intervention and decision-making) were developed. Institutional factors, including government, university, and local community, are important for the effective management of single-use plastic usage. Policymakers can foster a more environmentally conscious approach in reducing single-use plastics. Institutional management refers to policies and management systems implemented by governments, universities, and other relevant institutions to improve single-use plastic management.

Institutional management refers to policies and management systems implemented by governments, universities, and other relevant institutions to improve single-use plastic management. In the objective of the study, you stated that you want to identify themes that will emerge as promising for future research agendas as your second objective. However, this answer did not appear in the results and discussions section. Please consider adding this result or removing that question. Institution management: an alternative to a single-use plastic usage management system implemented by relevant authorities to streamline single-use plastic processing.

4. Conclusions

This study offers a comprehensive overview of single-use plastic usage. The number of publications related to single-use plastic usage increased significantly during this period. This study primarily aimed to investigate the intention of reducing single-use plastic usage. As several authors have shown, the role consumers may assume becomes critically important when they are adequately informed and understandg of the issue. The success of any effort in reducing single-use plastic inevitably relies on how the problem is defined and perceived. In this sense, we also conclude several factors that contribute to reducing single-use plastic: source of single-use plastic usage, single-use plastic behavior, type of single-use plastic, production, and management. Furthermore, a significant portion of this study examines statistics-based quantitative approaches. Nevertheless, qualitative and mixed methodology approaches remain limited. The Theory of Planned Behavior is extensively used as a foundational framework in empirical research.

This systematic review examines several major initiatives addressing single-use plastic pollution. Over the past decades, efforts to reduce single-use plastic have not only been confined to local areas but have also garnered the attention of scholars worldwide. Many studies emphasize the prominence of bottom-up approaches to reduce single-use plastic management. In this sense, strict policy implementation from the local to the global level can help achieve the goal. Constraints to policy involvement include insufficient enforcement, public resistance, or unforeseen consequences. The United Nations negotiations currently underway toward a legally binding global treaty to end plastic pollution are a notable progress. The presence of observers and contributions from the scientific community play an important role in reducing the costs associated with the impact of plastic pollution. Ultimately, given the urgency of this issue, However, several barriers remain, including insufficient enforcement, public resistance, and unintended consequences.

Future research could explore primary data collection methods, .include broader literature sources beyond a single database, and provide more integrated data to build an understanding of single-use plastic usage behavior. In addition, an interdisciplinary collaboration from various fields of researchers can help bridge the gap between single-use plastic sources, behavior, characteristics, production, and management to support more sustainable solutions for reducing single-use plastics..

The primary recommendation in this study is to employ diverse data collection methods. As most reviewed studies employed quantitative methods, scholars can explore qualitative or mixed methods to increase the depth and scope of understanding of reducing single-use plastic usage. Second, scholars can integrate the theoretical framework fields of researchers. Third, interdisciplinary collaboration from diverse subjects beyond consumers, such as top industry management and government authorities. The intention of reducing single-use plastic research will contribute more meaningfully to the advancement of environmental sustainability by incorporating these subjects.

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Author Contribution

L.D.D.J: Writing – review & editing, Writing – original draft, Methodology, Data curation, Visualization, Software, Conceptualization, H.H: Writing-review & editing, Validation, Supervision, Conceptualization, N.S: Writing-review & Editing, Validation, Supervision, Conceptualization.

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