Single-Use Plastic Restrictions: A Mixed-Methods Policy Review of Structural Compliance and Affordability Barriers

Jesson Paul P. Padillo[*]
Freety Mae D. Manyawron[**]
Relyn B. Gallardo[***]
Brandon N. Obenza[****]

Abstract

This mixed-methods policy review evaluates the implementation of the Single-Use Plastic (SUP) ban in Maragusan, Davao de Oro, Philippines, using an exploratory sequential design. Grounded in structural functionalism and the Theory of Planned Behavior, the study examines the synergy between institutional mechanisms and individual behavioral intentions. Qualitative findings indicate strong community recognition of the ban's effectiveness in mitigating floods, reducing environmental hazards, and improving waste management, leading to high pro-environmental compliance. Quantitative analysis supports this, with high mean scores for relevance (4.86), coherence (4.72), and impact (4.58). However, a lower sustainability score (4.07) indicates critical barriers, specifically the affordability and availability of alternative options for low-income vendors. While the policy is locally successful, long-term viability requires enhanced monitoring, targeted community education, and institutional support. These results offer empirical guidance for local plastic reduction strategies and broader waste management policy formulation.

Keywords: Single-use plastic ban, policy review, waste disposal, eco-friendly behavior, mixed methods research

[*] University of the Immaculate Conception, Davao City, Philippines.
Email: jessonpaulpadillo@gmail.com
[**] University of the Immaculate Conception, Davao City, Philippines.
Email: fmanyawron_250000002760@uic.edu.ph
[***] University of the Immaculate Conception, Davao City, Philippines.
Email: rgallardo_250000000546@uic.edu.ph
[****] Mindanao State University - General Santos, General Santos City, and University of the Immaculate Conception, Davao City, Philippines.
Email: brandon.obenza@msugensan.edu.ph
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Introduction

Globally, millions of tonnes of plastic waste enter the environment each year, making it a major contributor to environmental pollution (Apriadi et al., 2024; Borg et al., 2022; Lebreton & Andrady, 2019; OECD, 2022). Currently, 19–23 million tonnes of plastic are estimated to leak into aquatic ecosystems annually from land-based sources (United Nations, 2022). In response, governments around the world are introducing bans on single-use plastics to reduce marine plastic pollution (Herberz et al., 2020; Knoblauch & Mederake, 2021; Schnurr et al., 2018; Wen et al., 2021; Xanthos & Walker, 2017). In the Philippines, this systemic effort is driven by institutionalizing Republic Act No. 9003 (the Philippine Ecological Solid Waste Management Act of 2000) alongside its amendment, Republic Act No. 11898 (the Extended Producer Responsibility Act of 2022), which strengthens mandates restricting single-use plastics (SUPs) across local government units (Congress of the Philippines, 2021; De Jesus, 2022; Philippine News Agency, 2021; World Bank, 2024). Locally, this environmental crisis hits close to home: the Agusan River, which flows directly from the municipality of Maragusan, Davao de Oro, down to Butuan City, accounts for 0.47% of global ocean plastic pollution (Meijer et al., 2021). This ranks it among the top 11 most polluting rivers globally, establishing an alarming and immediate local necessity to curb plastic accumulation at its upstream source.

However, implementing these legislative mandates poses significant challenges (Bacuyag, 2022). While national and subnational governments most frequently used bans to regulate plastic consumption (Diana et al., 2022), historical precedents demonstrate that a plastics ban only leads to a small reduction of global plastic marine pollution and thus provides only a partial solution to the problem it intends to solve if left unmonitored (Herberz et al., 2020). For instance, similar frameworks implemented in pilot cities across developing countries, such as Indonesia, show that results remain unclear (Apriadi et al., 2024). A significant root cause of this ambiguity is the lack of understanding of the effectiveness of plastic policies, a gap in the toolkit driving solutions to the plastics crisis. This is further exacerbated by a pervasive lack of monitoring and evaluation of plastic policies, which hampers knowledge acquisition (March et al., 2023). Most documented investigations focus narrowly on macro-level consumption figures or simple attribution approaches, neglecting the critical, multi-audience behavioral dimensions that dictate long-term compliance (Borg et al., 2022; Heidbreder et al., 2019; March et al., 2023).

Theoretical Framework

This study was framed through a dual-lens theoretical approach, integrating Talcott Parsons' (1951, 1964) Structural Functionalism Theory at the macro-level and Icek Ajzen's (1991) Theory of Planned Behavior (TPB) at the micro-level. By combining these frameworks, the study established a comprehensive mechanism to evaluate both the institutional structures and individual behavioral dimensions driving the single-use plastic (SUP) ban implementation in Maragusan, Davao de Oro.

At its core, Structural Functionalism views society as a complex, interconnected system where specialized institutions work in unison to maintain social equilibrium, stability, and order. The central discipline of this theory rests on the premise that any social change or policy intervention must be integrated across various societal sectors to function effectively. From Parsons' broader framework, this study specifically utilized the AGIL paradigm (Adaptation, Goal Attainment, Integration, and Latency) to analyze the structural enforcement of the SUP ban.

Under this structural-functionalist lens, the institutional mechanism of Maragusan is operationalized through localized governance units that act as specialized subsystems. Specifically, the Local Government Unit (LGU) drives Goal Attainment by enacting the regulatory mandates of the ban, the Municipal Environment and Natural Resources Office (MENRO) handles Adaptation and enforcement by managing archived data, tracking violations, and overseeing environmental compliance; and the Materials Recovery Facilities (MRFs) serve an Integration function by bridging administrative policies with grassroots municipal operations. This institutional perspective ensures that the ban is analyzed not merely as a legal text, but as a dynamic structural mechanism dependent on systemic coordination.

While functionalism explained the systemic architecture, the Theory of Planned Behavior (TPB) was employed to dissect the micro-level psychological and individual factors governing policy compliance. The foundational discipline of TPB posits that human action is guided by deliberate behavioral intentions, which are directly predicted by three core concepts: Attitude toward the behavior (individual evaluation of the ban), Subjective Norms (perceived social pressure from the community), and Perceived Behavioral Control (the individual's perceived ease or difficulty in adhering to the ban).

In analyzing the Maragusan case, this study specifically operationalized all three components to assess resident compliance. First, attitude was utilized to evaluate how residents' personal beliefs regarding environmental waste reduction shaped their willingness to eliminate single-use plastics. Second, subjective norms were used to analyze how community-wide expectations and peer behaviors influenced household solid waste management practices. Lastly, perceived behavioral control was extracted to examine whether practical constraints—such as the accessibility of eco-friendly alternatives or the efficiency of local MRF collection schedules—hindered or facilitated the residents' actual behavioral shift toward reducing, reusing, and recycling (Sapawi et al., 2024).

The synthesis of these two theories provided a powerful, multi-tiered analytical tool. Structural Functionalism successfully mapped the macro-level governance system, identifying how well policy guidelines and institutional mandates were structurally laid out by local authorities. Concurrently, the Theory of Planned Behavior captured the micro-level behavioral responses, illuminating why individual stakeholders either complied with or resisted those very structures. By linking institutional functions with psychological behavioral determinants, this dual framework

guided the policy review to deliver a holistic evaluation of the structural and human dimensions determining the success of Maragusan's single-use plastic ban.

Research Gap

Recently, no extensive evaluation study has been conducted about the effectiveness of the Single-Use Plastic Ban Policy implementation of Maragusan using a mixed-methods design, leaving a gap in assessing how structural factors and community responses interact to influence policy effectiveness and sustainability in this local context. Moreover, this mixed-methods policy review aims to evaluate the effectiveness of the Single-Use Plastic (SUP) Ban Policy as a local environmental policy. An exploratory design will be used, where qualitative findings initially guide the development of the quantitative phase.

With the increasing social trends and global advocacy on climate action (Nguyen et al., 2023), the significance of the regulation policy of single-use plastics, evaluating the effectiveness of this policy will significantly assess the policy's strengths and weaknesses in the localized implementation program of Maragusan. For this purpose, socio-economic findings and policy recommendations will be drawn in a themed narrative(qualitative accounts from interviews), and statistical data references(quantitative records) will be triangulated.

Purpose Statement

This study aimed to evaluate the effectiveness of the policy implementation of the single-use plastic ban. Utilizing an exploratory sequential mixed-methods approach, the narrative accounts of policymakers, MRF operators, and business owners were thematically analyzed to inform the development of a quantitative survey instrument. The qualitative data collection was rooted in the personal observations, experiences, and accounts of key Maragusan stakeholders. Concurrently, quantitative data were gathered from the archived records of the Municipal Environment and Natural Resources Office (MENRO), covering the period from 2015 through the policy's implementation timeline spanning 2019 to 2024. Following the completion of the data analysis, quantitative and qualitative data integration strategies were performed using triangulation and narrative integration to compare and synthesize the findings. This integration ultimately provided a comprehensive understanding of the policy's enforcement and effectiveness within Maragusan.

Significance of the Study

This study significantly contributed to Maragusan's waste management policy and guidelines by providing practical solutions for effective local implementation. In this context, household-based practice guidelines on waste management were institutionalized for the residents. Based on the study's findings, a community-based program was recommended to strengthen both the operational guidelines of the Materials Recovery Facility (MRF) and local waste collection procedures. Moreover, policy recommendations and interventions were introduced to Maragusan’s policymakers via a comprehensive report utilizing the collected qualitative and quantitative data.

Consequently, future recommendations for policy formation across Davao de Oro and the wider Davao region were successfully drawn from these findings.

Materials and Methods

Research Design

The research was based on an exploratory sequential mixed-methods investigation of the policy implementation of the single-use plastic (SUP) ban, an area where evaluation resources had been insufficient (Creswell & Creswell, 2023; Fleming & Zegwaard, 2018). The design consisted of two steps; the first phase entailed a qualitative exploration, which was followed by a quantitative validation phase to achieve data triangulation. The qualitative stage involved a thematic analysis of interviews and focus group discussions to determine the critical issues, perceptions, and challenges pertaining to policy enforcement, community awareness, and behavior change. The results of this initial step were then used to develop the survey instruments applied during the subsequent quantitative stage.

Respondents and Sampling Procedure

During the qualitative stage, a purposive sampling technique was used to select key stakeholders, including policymakers, MRF operators, and business owners in Maragusan, Davao de Oro. This approach ensured a balanced representation across stakeholder groups, enabling an objective reflection of their distinct concerns and issues regarding policy effectiveness. A targeted sampling process was likewise applied during the quantitative phase, which focused on the entire municipality of Maragusan to examine the success of the single-use plastic ban's enforcement; this phase was supplemented by a review of archived solid waste management documents from the Municipal Environment and Natural Resources Office (MENRO). All respondents participated on a voluntary basis and provided informed consent, with strict adherence maintained regarding the ethical principles of confidentiality and anonymity.

Research Instruments

The researchers analytically applied structured interview guides and compliance measures from the pre-implementation stage of this policy review study. This established baseline data on awareness, compliance, and enforcement of the single-use plastic ban, using narrative reports from policymakers, MRF operators, and business owners. These diagnostic qualitative findings then informed the development of a quantitative evaluation tool. Grounded in current policy evaluation frameworks (Kim et al., 2019; McLaughlin & Jordan, 1999), by providing a robust institutional perspective, the study deliberately isolated the primary administrative pillars of Maragusan's waste management framework. The policymakers represent the legislative mechanism responsible for oversight and budget allocation; MENRO represents the administrative and monitoring mechanism tasked with daily enforcement and documentation; and the MRF operators

represent the operational mechanism responsible for physical waste collection, segregation processing, and direct community interaction. Detailing these distinct institutional roles enables the study to identify bottlenecks within the administrative hierarchy.

Data Collection and Analysis

This policy review of the single-use plastic ban implementation utilized a systematic and ethical approach to achieve validity, transparency, and inclusiveness. The researchers secured approval from the Research Ethics Committee, alongside formal permission from local authorities, including the Local Government Unit (LGU) of Maragusan, the Municipal Environment and Natural Resources Office (MENRO), and key community stakeholders. Informed consent was obtained by providing participants with detailed information regarding the study's purpose, their specific roles, and data confidentiality protocols. Qualitative accounts were gathered using structured interview guides focused on compliance, enforcement difficulties, awareness, and perceived policy effectiveness. Concurrently, the outcomes of the pre- and post-implementation stages were evaluated using descriptive and inferential statistics, including measures of central tendency, variability, and t-tests. The data analysis outcomes from both the qualitative and quantitative stages were then subjected to data integration techniques, specifically triangulation and narrative integration, to compare and synthesize the findings. This integration offered a comprehensive understanding of the policy's implementation success within Maragusan. Finally, the findings were tabulated and interpreted systematically to identify the strengths, weaknesses, and potential areas for improvement, thereby providing evidence-based insights to refine the plastic ban and inform future sustainable environmental policies.

Ethical Considerations

This study strictly adhered to ethical standards throughout its duration, ensuring absolute confidentiality and total compliance with the Data Privacy Act of 2012. (National Privacy Commission, 2012). Prior to their involvement, participants were provided with informed consent forms that clearly outlined the study’s purpose, procedures, potential risks, and benefits to guarantee voluntary participation (Ortega & Sumayo, 2024). Data collection, storage, and analysis were conducted using a coded system to safeguard the privacy and anonymity of the contributors. These ethical practices played a vital role in upholding the integrity of the research while protecting the rights and welfare of all participants—particularly the local stakeholders and residents involved in evaluating the implementation of the Single-Use Plastic (SUP) ban in Maragusan.

Results

Qualitative

- Plastic Ban as a Strategy for Environmental Risk Reduction

The members tend to consider the plastic ban as a practical approach to the problems in the local ecological context, especially mitigating the number of flooding cases and allowing a

decrease in the gravity of solid waste. They pointed out how the policy does not simply address environmental risks, but also helps in the provision of wider benefits to the people such as the improvement of overall public health and sanitation, and this has quite a number of dimensions to the community. The respondents also pointed out that domestic level activities such as effective waste sorting and disposal are also essential to optimizing the policy and strengthening the notion that personal responsibility goes hand in hand with institutional policies.

The research also found out that the success of plastic ban is closely associated with its combination with other environmental management strategies. According to the participants, complementary actions like regular drainage cleaning, community clean up runs, and other actions to manage the wastes were seen as being necessary to still get the best results out of the ban. One respondent has commented, "Avoiding drainage, reducing the amount of garbage" (FGD.5), which suggests the practical connection between the ban and the green strength in the area.

- Policy Consistency and Community Compliance

According to the results, the overall impression of policy coherence among the respondents can be relatively positive, and many participants state that the programs and policies related to waste management are effectively included in the current system of local government measures. Programs like rotational clean-up drives, also commonly known as pulot-basura and community based competitions such as the cleanest purok program were also mentioned by the participants as examples of regular policy implementation, which makes participation active. These programs were acknowledged to help create the feeling of shared responsibility and strengthen the involvement of the community in environmental sustainability.

Although there was this general agreement, there have been cases of inconsistency in policies by some participants, especially when it comes to the persistence of using single-use plastics by some households. These contradictions were not seen in terms of systemic failure but seen as transition problems that need more education and strengthening to realize total compliance. The participants noted that the effectiveness of the policies requires constant monitoring, frequent awareness campaigns, and community participation to retain the effectiveness of the policies. The findings imply that the policy consistency is, to a large extent, pre-determined, but the development of the environmental programs in the long run relies on the constant reinforcement and the general compliance of the community.

- Mixed Outcomes of Policy Implementation

The adoption of the plastic ban had mixed outcomes that depicted both positive impacts and significant problems as documented by the participants. Positively, most of the respondents noted that there was a noticeable decrease in the amount of plastic garbage making the community a cleaner and neat place to live in. Respondents pointed out that the streets, sewage systems, and common places seemed cleaner and better plotted and this is what supported the belief of real positive changes in the environmental management.

Conversely, some of the participants cited challenges related to the implementation of the policy. These involved disruption of the current waste management practices, and reluctance or uncooperativeness of people who struggled to change their habitual practices. A few respondents mentioned that some of the members in the community a few times had to violate correct manners as they either were not aware or it was more convenient or they simply had no other options but to use a single-use plastic. These notes indicate that although the policy has reaped quantifiable benefits, the overall performance has been conditioned by transitional huddles especially in behavioral adjustment and regular adherence. The present results illustrate the necessity of further education, maintenance measures and encouragement mechanisms to maintain favorable results and reinforce the long term effect of the policy.

One of the respondents captured this feeling, saying, "Positive, less garbage volume. People compromised practices on policy implementation" (FGD5) tells the negative side of the duality of the policy impact and the necessity of the enforcement against community involvement.

- Strengthening Compliance Through Consistent Monitoring and Policy Adherence

The participants believe that constant monitoring and the high follow-up of the set rules are the key to the effective implementation of the environmental policies. The repetition of the term following the policy is an accent of a high degree of regulation of governance, especially in waste management. The participants highlighted that compliance could be strengthened by both the use of institutional enforcement as well as the involvement of the active community whereby some of the local residents were observed to observe and hold each other accountable in practicing the regulations. One of the participants mentioned, "after policy implementing rules and regulation" (FGD 8) and another emphasized on community vigilance, and said, "Segregate and Monitoring" (IDI 3).

Respondents further stated that there are stronger roles that can take center stage so as to prevent complacency and also make sure that the policies are being used with uniform application in all the local sectors. Continuous enforcement systems, when coupled with civic participation will lead to the realization of environment where it is more affordable to put up with regulations as compared to putting through it once or twice. This not only maintains the standards on an equivalent level, but also makes the perceived legitimacy and credibility of the policy of the stakeholders even greater.

- Behavioral Adaptation and Sustainable Practices in Daily Living

The everyday way of life among the people of the community has changed drastically, especially in terms of their lessening dependence on single-use plastics. Other interviewees said that they switched to other more sustainable choices, including eco-bags, reusable containers, and refillable bottles. This change and adaptation is indicative of an increasing environmental responsibility consciousness and the gradual move towards a more sustainable choice in everyday life. These participants noted that the practices in addition to lowering plastic waste, the practices are also financially profitable due to the reduced spending on disposing materials. Economical and

eco-friendly in making household choices as one of the respondents (IDI 1) stated means saving money by not buying products in single-use plastic packages. (Allison et al., 2022)

In addition to this, the policy of plastic ban which has been adopted has also played a significant role in promoting these adaptive behaviors. The effect of the policy is not limited to individuals, as it advocates a change in values in the community to make them more considerate of how they consume and use resources. However, some of the respondents also regretted the unequal economic impact in terms of small vendors and small businesses that rely on cheap price packaging. These lessons indicate that despite the increasing trend in attitudes towards adopting behavioral changes to support sustainability, the attitude change process should be informed by policy shifts and awareness creation to make the process inclusive in all sectors. Overall, this theme highlights the ecological policies as one of the ways to create behavioral change, environmental awareness, and the gradual transition to the adoption of sustainable practices in everyday life.

- Institutional and Community Synergy in Promoting Environmental Continuity

The findings reveal that the institutional mechanism is highly dependent on the operational capacity of local structures. While the LGU successfully institutionalized the policy framework, the data indicate a breakdown in the institutional feedback loop between MENRO's regulatory monitoring and the MRFs' physical infrastructure. Participants highlighted that when MRF collection schedules are inconsistent or alternate packaging resources are under-supported by local administrative guidelines, individual behavioral intent declines. This emphasizes that sustainable policy enforcement requires reinforcing institutional mechanisms through localized resource provision and formalized inter-agency communication, rather than relying solely on punitive mandates.

Moreover, the participants put a strong emphasis on lasting educational work and reinforcement of the environmentally friendly practices to maintain the benefits of the environmental policies. Such programs do not only promote compliance, but also inculcate the feeling of ownership and responsibility amongst the citizens. It has been a norm on utilizing basket and ecobags as an alternative to the single-use plastics, as expressed by one participant (IDI 4) who acknowledged the slow yet progressive culture change that is being taken towards being environmentally responsible. These group trends illustrate how the institutional support and community involvement collaborate to support environmental programs. In general, the theme is that the issue of environmental continuity requires the constant cooperation of the government and people, citizen input, and mutual vision of sustainability.

Evaluation on Single-Use Plastic Ban Awareness among the Citizen of Maragusan

The construction of the survey questionnaire has also been guided by the process of observations carried out in the course of the qualitative part of research as the items are elaborated based on the themes identified in the course of the interviews and focus groups. This was the same tool used to gather information of 250 respondents in place of seeking to establish

community perceptions, awareness, and behavioral practice regarding the prohibition of single-use plastics in a quantitative fashion.

Demographic Profile of the Respondents

The demographic profile of the 250 respondents reveals a sample characterized by a young, female-dominated, and family-oriented population belonging predominantly to the economic middle class. Over 70% of the participants fall under the youth and young adult brackets, with individuals aged 18–35 accounting for 74.0% of the sample. Females represent the clear majority at 61.2%. Structurally, the sample is largely comprised of students (36.8%) and employed individuals (33.6%), who overwhelmingly belong to middle-income households earning between ₱12,030 and ₱24,060 monthly (91.2%). Furthermore, the respondents generally reside in larger family units, with 86.8% living in households composed of 3 to 6 members.

In terms of localized baseline habits and community infrastructure dependencies, the data indicates a strong reliance on traditional consumer hubs and decentralized municipal waste systems. A substantial 72.0% of the respondents utilize the public market as their primary source for groceries and daily essentials, highlighting a critical socioeconomic hub where single-use plastic regulations directly interact with daily commercial transactions. Additionally, waste disposal practices within the community are heavily centered around decentralized processing, with an overwhelming 89.2% of households managing their primary garbage disposal through Materials Recovery Facility (MRF) collection systems rather than regular municipal truck routes (10.8%). This structural composition suggests that environmental policy interventions in this area must align closely with the socioeconomic realities of middle-income households, small-scale market vendors, and the localized processing capacities of community MRFs.

Table 1. Age Distribution

Age Group	Frequency (Count)	Percentage (%)
18–25 years	116	46.4%
26–35 years	69	27.6%
36–45 years	34	13.6%
46–55 years	21	0.084% / 8.4%
56 years and above	10	4.0%

The data shows a predominantly young respondent base, with the 18–25 age group accounting for the largest share at 46.4%. Conversely, older demographics are minimally represented, as individuals aged 56 and above comprise only 4.0% of the total sample population.

Table 2. Gender Distribution

Gender	Frequency (Count)	Percentage (%)
Male	79	31.6%
Female	153	61.2%
Non-binary / Other	15	6.0%
Prefer not to say	2	0.8%

The data shows a predominantly young respondent base, with the 18–25 age group accounting for the largest share at 46.4%. Conversely, older demographics are minimally represented, as individuals aged 56 and above comprise only 4.0% of the total sample population.

Table 3. Occupational Status

Occupation	Frequency (Count)	Percentage (%)
Student	92	36.8%
Employed (Full-time / Part-time)	84	33.6%
Self-employed / Business Owner	59	23.6%
Unemployed	12	4.8%
Retired	3	1.2%

The sample is largely characterized by economically active or transitioning individuals, led by students at 36.8% and employed professionals at 33.6%. Self-employed business owners make up a notable 23.6%, while unemployed and retired individuals collectively represent less than 6% of the group.

Table 4. Household Monthly Income

Income Bracket	Frequency (Count)	Percentage (%)
Low Income (Under ₱12,030)	10	4.0%
Middle Income (₱12,030 to ₱24,060)	228	91.2%
High Income (Earning over ₱144,360)	12	4.8%

An overwhelming majority of the respondents belong to the middle-income bracket, with 91.2% earning between ₱12,030 and ₱24,060 monthly. In contrast, low-income and high-income households constitute small, nearly equal fractions of the population at 4.0% and 4.8%, respectively.

Table 5. Household Size

Members per Household	Frequency (Count)	Percentage (%)
1–2 members	6	2.4%
3–4 members	99	39.6%
5–6 members	118	47.2%
7 or more members	27	10.8%

The data indicates that medium-to-large families dominate the sample, with households consisting of 5–6 members (47.2%) and 3–4 members (39.6%) being the most common. Small households of 1–2 members are exceptionally rare, representing just 2.4% of the surveyed group.

Table 6. Primary Source for Household Grocery / Daily Shopping

Shopping Source	Frequency (Count)	Percentage (%)
Grocery Stores	47	18.8%
Public Market	180	72.0%
Convenience Stores	16	6.4%
Online Shopping	7	2.8%

The public market serves as the primary retail hub for the community, utilized by a substantial 72.0% of households for their daily shopping and grocery needs. Modern retail options see much lower engagement, with grocery stores capturing 18.8%, followed by convenience stores and online shopping at minor single-digit percentages.

Table 7. Primary Method of Garbage Disposal

Method of Disposal	Frequency (Count)	Percentage (%)
Regular municipal/local government truck collection	27	10.8%
MRF (Materials Recovery Facility) Collection	223	89.2%

The community relies heavily on decentralized waste management, with an overwhelming 89.2% of respondents using Materials Recovery Facility (MRF) collection as their main disposal method. Regular municipal or local government truck collection forms a secondary option, servicing the remaining 10.8% of the households.

Level Single-Use Plastic Ban Awareness

The descriptive analysis metrics reflect an exceptionally high level of community support and structural coherence regarding the execution of the single-use plastic ban, yielding a remarkably strong Grand Mean of 4.36 and an overall Mode of 4.33. Relevance stands out as the highest-rated dimension (Mean = 4.86, Mode = 5.00), demonstrating an overwhelming consensus that the ban effectively addresses localized environmental risks such as flooding and public health degradation. Furthermore, the policy is highly integrated within preexisting frameworks, achieving a near-perfect alignment with parallel regulatory rules like local "no littering" mandates (Mean = 4.99, Mode = 5.00). Respondents also strongly validate the efficiency and impact of the implementation process, noting that the rules are highly accessible, monitoring is executed equitably, and the mandate has successfully triggered a deeper individual and household awareness of daily waste consumption habits.

However, despite these systemic successes, a distinct socio-economic bottleneck emerges when evaluating the long-term viability of the regulation. Sustainability registers the lowest composite score among the primary policy evaluation metrics (Mean = 4.07, Mode = 4.00), heavily suppressed by the lack of affordable and available market alternatives to single-use plastics (Mean = 3.32, Mode = 3.00). This systemic economic strain matches a visible behavioral split at the grassroots level: while respondents achieve a flawless score for domestic waste segregation at home (Mean = 5.00, Mode = 5.00), their proactive compliance drops drastically when required to bring personal reusable containers for take-out services outside the home (Mean = 2.56, Mode = 2.00). Instead of adopting inconvenient lifestyle habits, the community heavily favors enforcing compliance through peer-to-peer accountability, as evidenced by a perfect consensus in vocal advocacy and reminding others to respect

the ban (Mean = 5.00, Mode = 5.00). Ultimately, the data underscores that while the policy framework is highly accepted and effective, its long-term endurance relies heavily on bridging consumer lifestyle barriers and mitigating structural economic constraints for low-income vendors.

Table 8. Evaluation on Level Single-Use Plastic Ban Awareness using Descriptive Analysis

Level of Single-Use Plastic Ban Awareness		Mean	Mode	SD
A1.	The plastic ban addresses an important environmental problem in our community.	4.97	5.00	0.2349
A2.	The plastic ban is needed because plastic waste contributes to flooding.	4.92	5.00	0.3653
A3.	The plastic ban helps protect public health.	4.92	5.00	0.3653
A4.	The plastic ban is worth doing even if it causes some inconvenience.	4.65	5.00	0.5694
Relevance		4.86	5.00	0.1978
B1.	The plastic ban is consistent with our community's clean and green initiatives.	4.38	4.00	0.5967
B2.	The plastic ban complements waste segregation practices.	4.74	5.00	0.4486
B3.	The plastic ban aligns with other rules such as "no littering."	4.99	5.00	0.1412
B4.	The plastic ban fits well with local government waste management plans.	4.76	5.00	0.4348
Coherence		4.72	4.75	0.2118
C1	I noticed that public places are cleaner since the plastic ban was implemented.	4.39	4.00	0.5132
C2	I see fewer plastic bags used in markets and stores.	4.16	4.00	0.3850
C3	I observed fewer plastics clogging canals and drainage areas.	4.28	4.00	0.4907
C4	Community clean-up activities, now, collect less plastic waste.	4.30	4.00	0.4592
Effectiveness		4.28	4.25	0.2977
D1	The rules of the plastic ban are easy to understand.	4.59	5.00	0.4932
D2	It is easy to obtain affordable alternatives to single-use plastics.	4.88	5.00	0.3302
D3	Monitoring of the plastic ban is done fairly and consistently.	4.58	5.00	0.5032
D4	Implementing the plastic ban does not cause major disruption in daily life.	4.18	4.00	0.3953

Table 8. Evaluation on Level Single-Use Plastic Ban Awareness using Descriptive Analysis (Continue)

Level of Single-Use Plastic Ban Awareness		Mean	Mode	SD
Efficiency		**4.55**	**4.50**	**0.1867**
E1	The plastic ban made me more aware of my waste habits.	4.16	4.00	0.4372
E2	The plastic ban encouraged me to think more about environmental consequences.	4.60	5.00	0.5156
E3	The plastic ban influenced my household to make changes toward less disposal.	4.64	5.00	0.4798
E4	The plastic ban improved the cleanliness of places I often go (school, parks, markets).	4.90	5.00	0.3006
Impact		4.58	4.50	0.1507
F1	The benefits of the plastic ban can continue if the policy remains.	4.02	4.00	0.1785
F2	Monitoring and community involvement are necessary to sustain the plastic ban.	3.99	4.00	0.3638
F3	The plastic ban can be sustained if alternatives remain available and affordable.	3.32	3.00	0.7058
F4	I believe our community can maintain the plastic ban in the long run.	4.96	5.00	0.1964
Sustainability		4.07	4.00	0.2163
CP1	I bring a reusable bag whenever I shop.	3.00	3.00	0.7032
CP2	I avoid purchasing single-use plastic products.	4.00	4.00	0.5601
CP3	I refuse plastic straws, cups, or utensils when offered.	3.00	3.00	0.8059
CP4	I remind others to follow the plastic ban when needed.	5.00	5.00	0.9098
CP5	I choose products with less or no plastic packaging when possible.	4.00	4.00	0.8412
Compliance Practices		3.80	3.80	0.9887
EH1	I practice proper waste segregation at home.	5.00	5.00	0.7629
EH2	I participate in clean-up activities in the community when scheduled.	4.00	4.00	0.4376
EH3	I bring reusable containers for take-out food or beverages.	2.56	2.00	1.0129
EH4	I choose eco-friendly products when affordable alternatives are available.	4.18	4.00	0.3850
EH5	I continue eco-friendly habits even without someone monitoring me.	4.32	4.00	0.4759
Eco-Friendly Habits		4.01	3.80	0.2601
Grand Mean		4.36	4.33	0.0808

Relevance

Table 2 reveals that there is a high level of communitarianism on the significance of the single use plastic ban policy. The statement scores on its relevance were rated very high by the respondents, including the reduction of flooding due to plastic waste (mean 4.92, mode 5.00, SD 0.3653) and the solution of environmental problems (mean 4.97, mode 5.00, SD 0.2349). It was also considered that the policy is required despite its potential to create minor inconvenience with a slightly reduced but still high rating (mean 4.65, mode 5.00, SD 0.5694). These findings state that residents are well aware of the environmental problems associated with the usage of plastics, and they strongly support the policy as a necessary measure.

On the whole, the single use plastic ban policy has a high rating of relevancy with a mean of 4.86 in overall, mode 5.00 and SD of 0.1978. This result indicates stable and high level of agreement between the respondents and confirms that the community appreciates the policy and knows the necessity of its use to minimize waste and have an effect of preventing flooding and environmental protection.

Coherence

Table 2 reveals that the ratings were very high in all the items that measured coherence. The respondents responded that the plastic ban aligns with the clean and green program of the community means of 4.38, mode of 4.00, and standard deviation of 0.5967. They too strongly concurred that plastic ban is a complement to the waste segregating practices, having a mean of 4.74, mode of 5.00, and standard deviation of 0.4486. There was a strong level of agreement with the other rules like the no littering rule as the plastic ban got a mean of 4.99, mode of 5.00 and low standard deviation of 0.1412. Finally, the ban that suits the local government well in terms of waste management plans registered an average of 4.76, mode of 5.00 and standard deviation of 0.4348 and also indicated positive perceptions.

The conclusions about the results should be taken into account, according to the responses, the mean of the coherenc is 4.72, mode is 4.75, and the standard deviation is 0.2118. This demonstrates that the plastic ban aligns well with the community efforts, segregation of waste in the community, local regulations, and the government waste management strategies.

Effectiveness

Table 2 data show that there are positive perceptions about the effectiveness of the plastic ban. Cleaner places since the implementation of the policy as observed by the respondents gave a mean of 4.39, mode of 4.00 and SD of 0.5386. They also fewer plastic bags were utilized in markets and stores as their mean was 4.16, mode 4.00, and SD 0.3850. Also, the less clogging of canals and drainage systems by plastics was reported, having a mean value of 4.28, mode of 4.00, and SD of 0.4907. It also turned out that the community clean-up activities gathered less plastic waste with the support of the mean of 4.30, mode of 4.00 and SD of 0.4592.

When all these reactions are put together, it is evident that plastic ban has led to a cleaner environment, less plastic usage in commercial spaces and decreased drainage blockages. The use of community clean-up activities also records fewer plastic collections, which is evidence of a significant decrease in waste. This is a positive improvement considering the community was having a good experience with the policy and the overall effectiveness indicator which represented the average of 4.28, mode of 4.25 and SD of 0.2977, further indicates that the plastic ban is being used successfully and has yielded regular environmental positive effects.

Efficiency

Table 2 shows that there are positive views concerning the effectiveness of the plastic ban. Respondents stated that the policies of the policy are not complicated to interpret with a mean of 4.59, mode of 5., and SD of 0.4932. They reported also low-cost alternatives to single-use plastics are available with high means of 4.88, mode of 5.00 and SD of 0.3302 also in favor. Surveillance of the plastic ban was considered to be just and equitable with a mean value of 4.58, mode of 5.00, and SD of 0.5032. Moreover, as respondents also mentioned, the introduction of the ban does not adversely affect the routine operations, which is demonstrated by the mean equal to 4.18, mode equal to 4.00 and SD equal to 0.3953.

All this responds to imply that the plastic ban is a smooth process, with made rules, made alternatives, and being applied consistently. The policy is perceived as something easy to deal with in the normal daily activities and it does not amount to significant inconvenience. This coincides with the general efficiency value, which is equal to 4.55, 4.50, and SD equals of 0.1867, which supports the fact that the plastic ban is applied successfully, and the work is performed effectively in society.

Impact

Table 2 demonstrates the effect of plastic ban on the awareness and behavior of respondents. The mean of 4.16, mode of 4.00 and SD of 0.4372 revealed the respondents awareness of individual waste production to have been raised by the plastic ban. It also moved them to think about the environmental impact of theirs, and a mean of 4.60, mode of 5.00, and SD of 0.5156. The ban made household members change their behavior towards minimizing waste disposal that had a mean of 4.64, mode of 5.00 and SD of 0.4798. Moreover, respondents also indicated that there were cleaner places they frequented frequently including schools, parks, and market places with mean of 4.90, mode of 5.00, and SD of 0.3006.

To sum up, the plastic ban has affected the awareness and environmental thinking, domestic habits, and cleanliness of common spaces positively. The total impact measure results in a mean of 4.58, mode of 4.50 and SD of 0.1507 that depicts high and consistent positive impacts on the environmental behaviors and perceptions of the respondents.

Sustainability

Table 2 results indicate the answers on the plastic ban sustainability. The overall response of the respondents was that the plastic ban would be beneficial should the policy be continued with 4.02 mean, 4.00 mode, and SD of 0.1785. They also emphasized on the role of surveillance and community participation to maintain the ban with the mean of 3.99, mode equal to 4.00 and SD=.3638. The availability and affordability of alternatives had a slight higher level of agreement with the value of mean of 3.32 with mode of 3.00 and SD of 0.7058. The confidence in the community to sustain the plastic ban in the long-term was rated high with the mean of 4.96, mode of 5.00, and SD of 0.1964.

Combining these observations, the respondents can view the plastic ban as sustainable, particularly with the assistance of the community involvement and commitment. The sustainability indicator, in general, has a mean of 4.07, mode of 4.00, and SD of 0.2163, which reflects a fairly positive perspective on the further effectiveness of the policy.

Compliance Practices

Table 2 shows the results in relation to the compliance practices of plastic use. Responses on whether the respondents engaged in moderate degrees of taking reusable bags when shopping (CP1) acquired a mean of 3.00, a mode of 3.00, and a standard deviation of 0.7032. For avoiding the purchase of single-use plastic products (CP2), respondents indicated a higher level of adherence with a mean of 4.00, a mode of 4.00, and a standard deviation of 0.5601. Refusing plastic straws, cups, or utensils when offered (CP3) received identical mean and mode scores of 3.00 (SD = 0.8059), matching the baseline trend observed in carrying reusable bags. The most actively followed practice was reminding others to follow the plastic ban when needed (CP4), which registered the highest engagement with a mean of 5.00, a mode of 5.00, and a standard deviation of 0.9098. Additionally, choosing products with less or no plastic packaging when possible (CP5) was positively received, yielding a mean of 4.00, a mode of 4.00, and a standard deviation of 0.8412.

On the whole, the findings show that respondents tend to adhere to plastic ban behaviors, particularly when it comes to social reinforcement and opting for basic plastic alternatives. The composite measure for compliance practices indicates an overall mean of 3.80, a mode of 3.80, and a standard deviation of 0.9887, demonstrating consistent and moderately high self-reported adherence to the policy's guidelines.

Eco Freindly Habits

The results tracking daily eco-friendly habits can be found in Table 2. Respondents demonstrated exceptionally strong compliance regarding proper waste segregation at home (EH1), scoring a maximum mean of 5.00, a mode of 5.00, and a standard deviation of 0.7629. Regular participation in scheduled community clean-up activities (EH2) was also positively reported, showing a stable mean of 4.00, a mode of 4.00, and a tighter variance (SD = 0.4376). Conversely,

there was noticeably less engagement when it came to proactively bringing reusable containers for take-out food or beverages (EH3), which marked the lowest score in this section with a mean of 2.56, a mode of 2.00, and a higher standard deviation of 1.0129. Choosing eco-friendly items when affordable alternatives are available (EH4) recorded a positive mean of 4.18 and a mode of 4.00 (SD = 0.3850), while the independent continuation of eco-friendly habits even in the absence of institutional monitoring (EH5) was similarly favorable, yielding a mean of 4.32, a mode of 4.00, and a standard deviation of 0.4759.

Cumulatively, the findings indicate that while intensive personal habits, such as bringing containers for take-out food, remain a behavioral hurdle, the community is highly active in structural household practices like waste segregation. The aggregate measure for eco-friendly habits presents a solid composite mean of 4.01, a mode of 3.80, and a standard deviation of 0.2601, indicating that overall community alignment with broader environmental sustainability practices is distinctly positive.

Policy Review Inegration of Qualitative and Quantitative Findings

According to the quantitative results, relevance, coherence, efficiency, impact, and positive perceptions toward the single use plastic ban had very high measures, with an average of 4.28-4.86. Such outcomes imply that there is large-scale approval in the society and a huge congruency between the policy and the societal expectations. These positive perceptions were supported with the help of the qualitative data. The respondents also repeatedly mentioned the plastic ban as the successful method of reducing the environmental risks, specifically, when it comes to the decreased flooding rates, the increased extent to which the environment is purified, and the decrease in the volumes of the wastes. The fact that the numerical ratings are close to the life lived implies that the community feeling is well associated with quantifiable results.

Qualitative observations, also give one an idea why the respondents reported that the policy was highly relevant. The physical changes suggested by the community clean-up drives by the participants included the reduction in the number of the clogged drainage systems, cleaner streets, and the decrease of plastic waste. Such real experiences can be witnessed through statements like Preventing clogged drainage and reducing the quantity of garbage. Such narratives affirm that the quantitative relevance is high (mean = 4.86), which means that the residents are conscious of the plastic ban as a mandatory measure to solve the problem of waste that has long-term existence.

The findings (mean = 4.72) demonstrated high congruence that the plastic ban was congruent with the current clean-and-green programs, as well as waste separation policies, and local regulations. This is enhanced by qualitative results that give an idea on how the respondents view the ban as a component of a wider governance system. The reinforcement mechanisms were usually noted including such programs as pulot-basura, cleanest purok contests, and environmental drives by the barangays. The observations of the participants show that the citizens do not view the plastic ban as an

independent policy, but as an idea, which is a part of the work of the historical community regarding the environment.

Good support was given to the perceived effectiveness of the policy by qualitative descriptions (mean = 4.28). The respondents reported the apparent improvement of cleanliness, the reduction of using plastic bags at shops, and the reduction of the plastic waste in canals. They were elucidated well in discussions that were carried out during focus groups and participants recorded that the amount of plastic garbage was significantly less during community clean-up actions. These statements reinforce the quantitative data given by the fact that the opinion by the community in matters concerning the plastic ban is that the ban has produced meaningful environmental gains.

The efficiency indicator was also supported by 1.1 qualitative support (mean = 4.55). The respondents cited the fact that policy guidelines were straight forward and existed of alternatives at their disposal and minimal interference with their daily lives. According to the qualitative data, many residents took the means of usable environmentally friendly substitutes such as reusable bags, baskets, and containers very easily. Moreover, the respondents stressed on the need to track regularity of policies, one of the implications being that the quantitative agreement should be fair and regular in terms of enforcement as well.

Qualitative narratives also added to the impact indicator (mean = 4.58) by presenting the issue of the shift in perspective of individual and household behaviors. The respondents were better environmental conscious and had more resources to use in environmentally friendly practices. The work as a source of testimony to changes in daily habits, e.g. looking past plastic wrapping or moving to reusable ones, forms the context of such high quantitative scores as well as showing how behavior change will be accomplished in the long term by the application of policy.

Sustainability factor was found to have fewer quantitative ratings (mean = 4.07), where the main issue was the costliness and accessibility of substitutes. This quantitative finding conforms to the qualitative reports, since in a few instances, small vendors and low income households reported that they did not go through adjustments because of cost-related constraints. The respondents were however also bold to say that the ban can be long-term provided that there are monitoring and support structures that are in the community. This mixed emotion coincides with the sustainability scores in general, meaning that more should be done to support the disadvantaged groups.

The qualitative themes also effectively captured the quantitative data on compliance practices (mean = 3.80) and eco-friendly habits (mean = 4.01). The respondents admitted that general compliance is high, particularly in terms of reminding people and using low-plastic products; however, some habits, such as carrying reusable containers, are not always observed. Qualitative comments highlighting economic reasons, lifestyle behaviors, and convenience considerations can be used to understand why certain behaviors are moderately compliant instead of highly compliant. Similarly, the high values of qualitative focus on household waste segregation are similar to a perfect score of 5.00 for this item in the questionnaire.

All in all, there is a logical sequence to the combination of quantitative and qualitative outcomes: the plastic ban is popular, being practiced, and is viewed as producing a substantial environmental outcome. People often associate policy execution with tangible changes in the locality. Nevertheless, these two groups of data emphasize that further observation, long-term educational efforts, and facilitation of the susceptible spheres are essential to the long-term sustainability and behavioral regularity. To a greater extent, the combination of these results enhances the credibility of the findings. It provides a deeper understanding of the policy's effectiveness as both a regulatory and behavioral intervention.

Discussion

The findings of the present study show that the community turns out to be highly supportive of the establishment of a ban on single-use plastics (SUP), with the quantitative rating being high in terms of the indicator of relevance, coherence, effectiveness, efficiency, impact, and sustainability. The results can also be corroborated with the qualitative reports of observable improvements in the environmental state, waste reduction, and decreased flooding. Taken together with the prior results, the above data points suggest that the SUP ban is already proven to be effective at the community level and that residents are becoming familiarized with the idea that it is not only an environmental measure but also the necessary element of the general health and risk reduction.

The perceived topicality of the plastic ban is linked to the opinions on transnational issues of escalating dangers of SUPs. According to Landrigan et al. (2023), thousands of chemicals are released by plastics during their entire lifecycle, which is problematic not only to human health but is also a potential problem to nature (Jeong et al., 2024). There is an overwhelming scientific agreement in the fact that there is a virtual consensus among the community in identifying that the SUPs not only have a contribution on the flooding and the clogging of drainage systems in localities, it as well causes environmental degradation. The scores on relevance are high (M = 4.86), and it confirms the fact that residents are aware of the environmental threats posed by plastic waste, a problem that is justified at the national level and internationally (United Nations General Assembly Human Rights Council, 2022). Also, the willingness of the respondents to promote the ban even though it is inconvenience to them illustrates their newfound environmental consciousness, which can be correlated with a global development of sustainability.

The results of policy coherence reflect that the plastic ban is highly consistent with the policies concerning the environmental protection. This can be explained by the fact that the respondents greatly communicated with the statement that the ban complements the waste segregation practices and in line with clean and green activities with the implication that the policy becomes a standard aspect of the current governance system. This is in line with what Galarpe et al. (2021) found, who allege that the major factor in the regulation of plastic in the Philippines is the constitutional solid waste management, including RA 9003 (Sur et al., 2023; World Bank, 2022). This dependency has been a challenge but the current results indicate that in this society, the plastic ban has been enforced in a

way that has a wider aim in the management of waste (Shin et al., 2020). These consist of community based activities like the pulot-basura drive or cleanest purok contest which are some of the reinforcing mechanisms. This conforms to the fact that Kunesch and Morimoto (2019) have observed that LGU-based programs are fast becoming hooked on local government oversight and compliance of communities.

The perceived effectiveness of the plastic ban is also well supported with the help of qualitative evidence (Natalac et al., 2023; Valenzuela et al., 2023). The respondents reported that the plastic litter was reduced in social places, sewerage systems, and shopping malls, which aligns with Lau et al. (2020), who opined that the existing waste collections systems were ineffective in managing the increasing volumes of plastic wastes. The fact that the community states that there is less waste and fewer blockages is a sign that the plastic ban is taking an overburden on the system, which is already overwhelmed. This however cannot be construed into the fact that the issues of systemic waste management have been overcome. It instead highlights the power of local behavioral intervention to create measurable environmental results in structural constraints.

The favourable scores on the efficiency scale characterize the satisfaction that the population had towards the implementation process. The regulations were easy to understand, the costlier alternatives were fairly priced and it was observed that the respondents were punctually observed. This is in line with the recent suggestions of further opening up of policy and severe enforcement at the barangay level (Capano & Lepori, 2024; Kunesch & Morimoto, 2019; Martiny et al., 2024). Elements of tracking the qualitative data, and sustainability indicators also suggest that enforcement is a condition towards a successful implementation of the policy in the long term as anticipated by the residents. This statement can be supported by the efforts of the United Nations General Assembly (2021), which has stated that the lack of RA 9003 implementation on the LGU level nullifies the national waste management strategies, including the Extended Producer Responsibility (EPR) Act. The enthusiastic assessment of the community of enforcement in this matter is therefore a strength that can be emulated by other LGUs as regards compliance.

The effects and sustainability results also put emphasis on behavioral modification of the residents. The respondents mentioned having changed their views and perspectives in regard to the environment, as they were more conscious of environmental matters and were less frequently using SUPs; in addition, they began in green practices, such as reusable bags and containers (PCEPSDI, n.d.; Prevent Waste Alliance, n.d.). The changes in behavior are observed, which confirms the thesis, offered by Srinivasan and Sharma (2022), that the reduction of the plastic carrier bag, as the small part of the total waste in terms of weight, can initiate the more important changes in consumption trends (Macintosh et al., 2020; Wagner, 2017). However, the score of sustainability also shows that the cost and availability of alternatives are problematic, and, therefore, the economic aspect continues to be a problem to some households and minor vendors. This corresponds to the ideas of the Alpizar et al. (2020), who claim that a more extensive policies that combine bans with price based and behavioral incentives would be more efficient and just (Nikiema & Asiedu, 2022; OECD, 2022).

Conclusions

The findings of this article show the idea that single-use plastic (SUP) prohibition has already acquired substantial policy relevance, integrity, and local acceptance, which proves a very intertwined local strategy in addressing the risk of the environment. It was shown that the ratings were high with references to such indicators as relevance, effectiveness, efficiency, impact, and sustainability. At the same time, the qualitative data demonstrated the visible improvement of the cleanliness of the community, the reduction of cases of blocked drains, and more awareness of the environment. The interrelativity results of the two is that policy is not well-known only, but also operationally relevant both at the household level and the community level.

The positive outcome of the SUP ban, specifically, may be regarded in the framework of the policy on the whole, since even now the problems of the country, such as systemic plastic pollution, weak support of RA 9003, and insufficient infrastructure prevent the profound waste management. The clustering of the local compliance shifts and changes in behavior in the present study is a priceless counter-discourse to the nationwide patterns wherein plastic reduction policies prove to be effective and acceptable by the society when local governments, communities and institutions are shown to be taking part. This information does not serve as an exception to the warnings of the international community on a negative health and ecological effect of plastics (Landrigan et al., 2023) urging the need to take measures and to design environmental governance solutions on the community level.

Even though the policy has been proven useful, there are other areas of research that have stated that constant thought needs to be exercised like in the aspect of the cost and access of the alternative to the use of single-use plastic. Observation of the mechanism should be done to guarantee compliance. These are some of the general system issues detected by other researchers, which include a lack of waste management infrastructure (Lau et al., 2020) or a lack of enforcement capacity at the local level (Kunesch and Morimoto, 2019). Thus, even though the community has embraced the policy exceptionally well, its long-term viability will need institutional backing, behavioral incentives, and also in line with the national policies, including the Extended Producer Responsibility (EPR) Act.

In general, the case of SUP prohibition in this municipality is a fascinating example of what a set of sense of coherence in policy making, an active community commitment, and enforcement of changes can bring about in terms of environmental benefits within relatively a short period of time. It is concluded in the paper that the policy is effective and feasible. Therefore, further enhancement of behavioral shift, structural barriers elimination, as well as incorporating local initiatives into the national and international sustainability efforts will determine its long-term success. To address the current issue of plastic pollution and waste management in the Philippines, the results of this policy review form a significant hint of the paramount importance of the localized and participatory and well-established intervention in creating environmental resilience are supporting population health.

Limitations of the Study

This policy review was concerned with the introduction of the single-use plastic ban in Maragusan and critically analyzed the effectiveness, the challenges, and the implications it has on the local stakeholders, including vendors, consumers and administrative bodies. Applying the purposive sampling, the study involved the participants representing diverse sectors, the market vendors, business owners, and community representatives, to make sure that as wide as possible range of perspective was documented. The key informants who have areas of specialization in environmental management and management policy were also consulted in order to verify findings to enhance validity and usefulness of findings.

The study was also limited to the municipality but the results were valuable knowledge of compliance levels, implementation flaws and community attitudes toward the plastic ban. Such outcomes can be used as the practical proof of the improvements of the policies implementation and enforcement as well as the creation of the educational campaigns which should be focused on the promotion of the sustainable alternatives. They also bring to light those areas where the local government and stakeholders can cooperate in order to strike a balance between the interests and needs of the environment and those of the economy.

The limitations to the scope of the review as they are confined to geography provide a critical base to subsequent research and revision of policies. It also provides useful baseline information on the other agencies (Local Government Unit of Maragusan, the Provincial Government of Davao de Oro and the Department of Environment and Natural Resources (DENR) to develop evidence-based and informed strategies. As highlighted in this work, there is a necessity of constant evaluation and acting policies that would guarantee the success of the ban on producing the desired environmental and social impacts.

References

Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Allison, A. L., Baird, H. M., Lorencatto, F., Webb, T. L., & Michie, S. (2022). Reducing plastic waste: A meta-analysis of influences on behaviour and interventions. *Journal of Cleaner Production*, *380*, 134860. https://doi.org/10.1016/j.jclepro.2022.134860

Alpizar, F., Carlsson, F., Lanza, G., Carney, B., Daniels, R., Jaime, M., Ho, T., Nie, Z., Salazar, C., Tibesigwa, B., & Wahdera, S. (2020). A framework for selecting and designing policies to reduce marine plastic pollution in developing countries. *Environmental Science & Policy*, *109*, 25–35. https://doi.org/10.1016/j.envsci.2020.04.007

Apriadi, B. F., Setiawan, R. P., & Firmansyah, I. (2024). Policy scenario of plastic waste mitigation in Indonesia using system dynamics. *Waste Management & Research*. https://doi.org/10.1177/0734242x241231396

Bacuyag, D. M. (2022). Examination of the problems encountered in solid waste management: Basis for proposed improvement measures. *Tianjin Daxue Xuebao (Ziran Kexueyu Gongcheng Jishu Ban),Journal of Tianjin University Science and Technology, 55*(06). https://tianjindaxuexuebao.com/details.php?id=DOI:10.17605/OSF.IO/3Z548

Borg, K., Lennox, A., Kaufman, S., Tull, F., Prime, R., Rogers, L., & Dunstan, E. (2022). Curbing plastic consumption: A review of single-use plastic behaviour change interventions. *Journal of Cleaner Production*, *344*(131077), 131077. https://doi.org/10.1016/j.jclepro.2022.131077

Capano, G., & Lepori, B. (2024). Designing policies that could work: understanding the interaction between policy design spaces and organizational responses in public sector. *Policy Sciences*. https://doi.org/10.1007/s11077-024-09521-0

De Jesus, E. (2022). *Trends in addressing plastic pollution in the Philippines: Emerging trends in APO members*. Asian Productivity Organization. https://www.apo-tokyo.org/wp-content/uploads/2025/01/APO_Philippines-Report-4_Mini-Book-2025_PUB.pdf

Diana, Z., Vegh, T., Karasik, R., Bering, J., Llano Caldas, J. D., Pickle, A., Rittschof, D., Lau, W., & Virdin, J. (2022). The evolving global plastics policy landscape: An inventory and effectiveness review. *Environmental Science & Policy*, *134*, 34–45. https://doi.org/10.1016/j.envsci.2022.03.028

Fleming, J., & Zegwaard, K. E. (2018). Methodologies, methods and ethical considerations for conducting research in work-integrated learning. *International Journal of Work-Integrated Learning, 19*(3), 205–213.

Galarpe, V. R., Jaraula, C. M., & Paler, M. K. (2021). The nexus of macroplastic and microplastic research and plastic regulation policies in the Philippines marine coastal environments. *Marine Pollution Bulletin*, 167, 112343. https://doi.org/10.1016/j.marpolbul.2021.112343

Heidbreder, L. M., Bablok, I., Drews, S., & Menzel, C. (2019). Tackling the plastic problem: A review on perceptions, behaviors, and interventions. *Science of The Total Environment*, *668*, 1077–1093. https://doi.org/10.1016/j.scitotenv.2019.02.437

Herberz, T., Barlow, C. Y., & Finkbeiner, M. (2020). Sustainability Assessment of a Single-Use Plastics Ban. *Sustainability*, *12*(9), 3746. https://doi.org/10.3390/su12093746

Jeong, E., Lee, J.-Y., & Redwan, M. (2024). Animal exposure to microplastics and health effects: a review. *Emerging Contaminants*, *10*(4), 100369–100369. https://doi.org/10.1016/j.emcon.2024.100369

Kim, B., Sullivan, J. L., Ritchie, M. J., Connolly, S. L., Drummond, K. L., Miller, C. J., Greenan, M. A., & Bauer, M. S. (2019). Comparing variations in implementation processes and influences across multiple sites: What works, for whom, and how? *Psychiatry Research*, *283*, 112520. https://doi.org/10.1016/j.psychres.2019.112520

Knoblauch, D., & Mederake, L. (2021). Government policies combatting plastic pollution. *Current Opinion in Toxicology*, *28*(2468-2020), 87–96. https://doi.org/10.1016/j.cotox.2021.10.003

Kunesch, N., & Morimoto, R. (2019). The "wickedness" of trashing the plastics age: Limitations of government policy in the case of the Philippines. *SOAS Department of Economics Working Paper No. 231*

Landrigan et al., (2023) The Minderoo-Monaco commission on plastics and human health. Annals of Global Health 89(1), (23), 1–215. https://doi.org/10.5334/aogh.4056.

Lau, W. W. Y., Shiran, Y., Bailey, R. M., Cook, E., Stuchtey, M. R., Koskella, J., Velis, C. A., Godfrey, L., Boucher, J., Murphy, M. B., Thompson, R. C., Jankowska, E., Castillo, A. C., Pilditch, T. D., Dixon, B., Koerselman, L., Kosior, E., Favoino, E., Gutberlet, J., . . . Palardy, J. E. (2020). Evaluating scenarios toward zero plastic pollution. *Science*, *369*(6510), 1455–1461. https://doi.org/10.1126/science.aba9475

Lebreton, L., & Andrady, A. (2019). Future scenarios of global plastic waste generation and disposal. *Palgrave Communications*, *5*(1), 6. https://doi.org/10.1057/s41599-018-0212-7

Macintosh, A., Simpson, A., Neeman, T., & Dickson, K. (2020). Plastic bag bans: Lessons from the Australian Capital Territory. *Resources, Conservation and Recycling*, *154*(1), 104638. https://doi.org/10.1016/j.resconrec.2019.104638

March, A., Karasik, R., Roberts, K., & Evans, T. (2023). Limited knowledge of national plastics policy effectiveness may hinder global progress. *Cambridge Prisms: Plastics*, *1*. https://doi.org/10.1017/plc.2023.13

Martiny, A., Testa, F., Taglialatela, J., & Iraldo, F. (2024). Determinants of Environmental Social and Governance (ESG) Performance: a Systematic Literature Review. *Journal of Cleaner Production*, *456*(1), 142213–142213. https://doi.org/10.1016/j.jclepro.2024.142213

McLaughlin, J. A., & Jordan, G. B. (1999). Logic models: A tool for telling your program's performance story. Evaluation and Program Planning, 22(1), 65–72. https://doi.org/10.1016/S0149-7189(98)00042-1

Natalac, E. J. C., Cardona, J. J., Santiago, R. S., Sawat, R. C., Solano, M. A. P., Dela Peña, M. A., & Mariacos, J. B. (2023). Evaluating the impact of a single-use plastic ban on a college

campus: Environmental outcomes. *International Journal of Multidisciplinary Research and Publications, 5*(6), 1–8.

Nguyen, T. T., Grote, U., Neubacher, F., Rahut, D. B., Do, M. H., & Paudel, G. P. (2023). Security risks from climate change and environmental degradation: implications for sustainable land use transformation in the Global South. *Current Opinion in Environmental Sustainability*, *63*. https://doi.org/10.1016/j.cosust.2023.101322

Nikiema, J., Asiedu, Z. A review of the cost and effectiveness of solutions to address plastic pollution. *Environ Sci Pollut Res* 29, 24547–24573 (2022). https://doi.org/10.1007/s11356-021-18038-5

NSWMC (National Solid Waste Management Commission). 2013. National Solid Waste Management Strategy 2012-2016. NSWMC. https://nswmc.emb.gov.ph/wp-content/uploads/2016/07/NSWMStrategy-2012-2016.pdf

OECD. (2022). *Global Plastics Outlook Economic Drivers, Environmental Impacts and Policy Options*. https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/02/global-plastics-outlook_a653d1c9/de747aef-en.pdf

Organisation for Economic Co-operation and Development (OECD) (2022) *Global Plastics Outlook: Economic Drivers, Environmental Impacts and Policy Options.* Retrieved from https://www.oecd-ilibrary.org/environment/global-plastics-outlook_de747aef-enGoogle Scholar

PCEPSDI (Philippine Center for Environmental Protection and Sustainable Development Inc). Green Choice Philippines. Accessed August 2024.

Philippine News Agency. 2021. “Banning Single-Use Plastics to Solve PH Pollution Problem.” Philippine News Agency. https://www.pna.gov.ph/articles/1133624

Prevent Waste Alliance. The SUP Challenge: Promoting Sustainable Alternatives.

National Privacy Commission. (2012.). *Republic Act No. 10173: Data Privacy Act of 2012*. National Privacy Commission. https://privacy.gov.ph/data-privacy-act/

Schnurr, R. E. J., Alboiu, V., Chaudhary, M., Corbett, R. A., Quanz, M. E., Sankar, K., Srain, H. S., Thavarajah, V., Xanthos, D., & Walker, T. R. (2018). Reducing marine pollution from single-use plastics (SUPs): A review. *Marine Pollution Bulletin*, *137*(137), 157–171. https://doi.org/10.1016/j.marpolbul.2018.10.001

Shin, S.-K., Um, N., Kim, Y.-J., Cho, N.-H., & Jeon, T.-W. (2020). New Policy Framework with Plastic Waste Control Plan for Effective Plastic Waste Management. *Sustainability*, *12*(15), 6049. https://doi.org/10.3390/su12156049

Srinivasan, M., & Sharma, J. (2022). Single use plastic ban and marketing scenario: policy and implementation. Academy of Marketing Studies Journal, 26(2), 1-11.

Sur, M., Shrestha J., Balota, A. 2023. Addressing the plastic pollution crisis in the Philippines: New momentum. World Bank Blogs

United Nations General Assembly Human Rights Council (2022) *The Human Right to a Safe, Clean, Healthy and Sustainable Environment. A/HRC/48/L.23/Rev.1., Pub. L. No. A/RES/76/300.* Retrieved from https://digitallibrary.un.org/record/3983329?ln=en

United Nations General Assembly. (2021, July 26). *Report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes, Marcos Orellana: The stages of the plastics cycle and their impacts on human rights* (A/76/207). United Nations. https://digitallibrary.un.org/record/3934987

Valenzuela, V. P., Sultan, L. D., Calatrava, M. A., Esguerra, P. G. & Montero, D. B. (2023). Assessment of the No Plastic Policy Implementation: A Basis to Plastic Waste Management Action Plan. *International Journal of Multidisciplinary: Applied Business and Education Research, 4*(9), 3304-3317. http://dx.doi.org/10.11594/ijmaber.04.09.19

Wagner, T. P. (2017). Reducing single-use plastic shopping bags in the USA. Waste Management, 70, 3-12. https://doi.org/10.1016/j.wasman.2017.09.003

Wen, Z., Xie, Y., Chen, M., & Dinga, C. D. (2021). China's plastic import ban increases prospects of environmental impact mitigation of plastic waste trade flow worldwide. *Nature Communications*, *12*(1), 425. https://doi.org/10.1038/s41467-020-20741-9

World Bank. 2022. Reducing Plastic Waste in the Philippines - An Assessment of Policies and Regulations to Guide Country Dialogue and Facilitate Action. 2022. Washington DC.

World Bank. 2024. "Guidance on the Development of a Roadmap for Managing Plastic Waste and Reduction of Non-Recyclable Single-use Plastics in the Philippines." Washington, DC: World Bank. https://nswmc.emb.gov.ph/wp-content/uploads/2025/06/R240126-PH-Plastic-Roadmap_REVISED-v2-FIXED.pdf

Xanthos, D., & Walker, T. R. (2017). International policies to reduce plastic marine pollution from single-use plastics (plastic bags and microbeads): A review. *Marine Pollution Bulletin*, *118*(1–2), 17–26. https://doi.org/10.1016/j.marpolbul.2017.02.048