

Financial Impact and Consumer Response to the Disposable Ban in Dining: Foundations for a Green Marketing Plan

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Abstract

Disposable material waste had been one of the greatest environmental issues modern societies faced. Single-use plastics, which had been inexpensive and convenient to use, had become a global problem by creating a mass accumulation of solid wastes that permanently affects the environment and health. The aim of the study is to evaluate how behavioral shifts impacted the financial dynamics within the mall's dining sector. By analyzing consumer responses and their subsequent effects on sales, customer satisfaction, and operational costs, this study aimed to comprehensively understand the financial consequences of the ban on disposable materials. Findings revealed that the consumers found eco-friendly packaging convenient and beneficial, maintaining high satisfaction despite some hesitation toward self-containers, while strongly supporting green restaurants as part of their environmental responsibility. There was no significant relationship between convenience and perceived environmental impact but revealed a moderate positive correlation between customer satisfaction and environmental impact, indicating that those who found green practices useful were more likely to recognize their benefits. This study concluded that respondents found eco-friendly packaging convenient and beneficial despite some hesitation toward self-containers; customer satisfaction remained high as service quality and food presentation were unaffected; a moderate positive relationship existed between customer satisfaction and environmental recognition; and, managers experienced mixed financial impacts, prompting strategies to balance sustainability with profitability.

Keywords: financial impact, consumer response, disposable wastes, environmental issues, green marketing



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INTRODUCTION

The shift to sustainable dining practices had become a large phenomenon due to increased environmental awareness and the need to address ecological challenges. The change had exemplified consumers' increasing willingness to patronize businesses with eco-friendly practices, as companies had confronted the financial and operational challenges of finding sustainable resources. Based on the researchers' experiences, this study aimed to determine how these shifts had affected the dining industry, particularly regarding financial dynamics and consumer behaviors. The worldwide movement towards sustainability had transformed dining establishments' green practices and how they conducted their business in terms of operational strategies and consumer interactions ("What do Consumers Really Think About.....," 2022).

With international regulations on single-use plastics increasing, companies had faced the challenge of balancing short-term costs with long-term competitive benefits. Studies had revealed that while the initial cost of transitioning to sustainable practices had been burdensome for businesses, they had ultimately gained improved brand loyalty and a stronger customer base by appealing to environmentally conscious consumers. Despite these benefits, the transition had come with significant challenges, such as financial constraints, supply chain disruptions, and consumer resistance to change due to higher costs and convenience issues. In the Philippines, one of the biggest contributors to ocean plastic pollution, sustainability in dining had been an essential concern. Government initiatives, such as Quezon City's prohibition on disposable materials in dining establishments, had

illustrated how local policies mirrored global trends while addressing unique regional challenges.

Such efforts had compelled businesses and consumers to adapt, providing opportunities for innovation and effective green marketing strategies. However, this shift had also presented a critical research gap: the financial implications of sustainable practices in dining establishments and their influence on consumer behavior. Previous studies had emphasized that sustainability had been a key driver of economic development, particularly through the implementation of circular economy principles, where waste had been reduced and resources had been reused (Ellen MacArthur Foundation, 2019). However, they had not provided comprehensive information on the financial impacts of these transitions on dining businesses. The costs involved in replacing unsustainable materials, changes in consumer purchasing patterns, and potential loss of customer loyalty had required further analysis. This study aimed to fill this gap by focusing on the financial and behavioral outcomes of dining establishments following Quezon City's disposable ban. The transition to sustainable dining had reflected broader changes in consumer behavior and business strategies. This study had provided valuable insights into the challenges and opportunities associated with sustainable practices by exploring the economic impacts on dining establishments and the responses of consumers. By linking these findings to the researchers' experiences and observations, the research had sought to contribute to discussions on how green initiatives could align environmental goals with economic sustainability.

The study focused on three major areas: customer spending, dining frequency, and customer satisfaction levels. It also examined changes in the operations of dining establishments in Quezon City and how these alterations had affected sales and consumption experiences. The study covered one year, divided into two six-month periods—the six months before the imposition of the ban and the six months afterward.

Furthermore, this study contributes to the large body of knowledge by exploring the intersection of environmental regulations and consumer behavior, providing insights into their financial implications. It addresses a gap in understanding how these dynamics influence business and economic sustainability.

Theoretical Framework. The study utilized the Theory of Planned Behavior (TPB), developed by Icek Ajzen (1985), as a foundational framework to explore how consumer attitudes, subjective norms, and perceived behavioral control influenced behavioral intentions regarding sustainable dining practices. TPB was instrumental in examining how these psychological constructs shaped responses to the ban on disposable materials, particularly in the food service sector. The theory facilitated a deeper understanding of how demographic factors—such as age, gender, and income—affected consumer acceptance of environmental policies. For instance, younger consumers, especially Millennials and Gen Z, were found to be more receptive to sustainable practices. However, for TPB to fully explain consumer behavior, it needed to incorporate constructs like convenience, customer satisfaction, and perceptions of environmental sustainability, which significantly impact dining decisions and restaurant financial performance (Brookes, 2023).

Additionally, Contingency Theory, proposed by Fred Fiedler (1964), was applied to contextualize how dining establishments adapted to the disposable material ban. This theory posits that there is no universally optimal management strategy; instead, organizational success hinges on aligning internal strategies with external environmental variables. In response to the policy shift, restaurants were compelled to modify their operations—such as adopting sustainable packaging, managing costs, and enhancing consumer engagement—to meet new regulatory and consumer expectations. The theory underscored the importance of managerial flexibility and responsiveness to external pressures, reinforcing the idea that sustainable business practices must be tailored to situational demands to ensure both

environmental compliance and financial viability.

Behavioral Shifts in Dining. Consumers' dining habits underwent significant transformations since the onset of the pandemic, influenced by various factors. The restaurant industry, one of the hardest-hit sectors, was compelled to adapt quickly to survive. A key insight from recent findings was that dining experiences were no longer singular; restaurants had to accommodate a broader spectrum of preferences and conveniences that emerged among consumers.

White et al. (2019) examined how environmental campaigns influenced consumer dining behavior, revealing a notable increase in patronage of restaurants that adopted sustainable practices. Their study highlighted the role of awareness campaigns in shaping dining choices and underscored the growing preference for eco-conscious dining, particularly among younger generations. Also, research indicated that the COVID-19 pandemic accelerated shifts toward sustainable dining habits, with a significant rise in takeout and delivery services favoring environmentally friendly packaging. The pandemic's impact on dining behavior reshaped consumer priorities and was expected to continue influencing food service trends in the future.

LITERATURES

Environmental Sustainability in Food Service. The inefficient operations of the food sector harmed the environment and depleted resources, posing risks for future generations. This study sought to evaluate sustainability indicators linked to meal production processes and waste management in food services through a systematic literature review. Chaturvedi et al. (2022) explored the adoption of sustainability practices in the food service industry and their influence on operational efficiency. Their research revealed that incorporating environmental sustainability into business strategies reduced waste, lowered costs, and enhanced customer satisfaction. The study highlighted the necessity of a

comprehensive approach to sustainability for achieving both ecological and economic gains. A blog post by Sustainability in Food Service | Culinary Services Group (2023) emphasized the critical role of green technologies in the food service sector. It noted that restaurants using energy-efficient appliances and sustainable sourcing practices gained a competitive edge. These establishments attracted more environmentally conscious customers, showcasing the profitability and practicality of implementing sustainable practices in the industry.

Economic Impact of Disposable Material Bans. To address the growing plastic pollution crisis, the Philippine Congress enacted the Extended Producer Responsibility Act of 2022 (Republic Act No. 11898), which became law in July 2022. This legislation mandates large enterprises to begin recovering their plastic packaging waste by December 2023. However, additional efforts are needed to tackle waste prevention and address the upstream aspects of plastic pollution. These policy initiatives aim to influence the behavior of both producers and consumers, potentially reducing the projected increase in single-use plastic production and consumption—an issue that standalone policies may struggle to fully resolve (PwC Philippines, 2022).

An article by the Heinrich Böll Foundation (2019) highlighted the environmental hazards posed by single-use plastics, which have garnered significant attention due to their widespread impact. Plastics contaminate all stages of their lifecycle, from extraction and production to disposal, harming oceans, waterways, soil, and air through incineration. Their effects extend beyond the environment, negatively impacting health, livelihoods, food systems, and wildlife. Furthermore, plastics do not decompose but instead break down into microplastics, which persist in the ecosystem.

Chen and Huang (2021) investigated the economic effects of disposable bans on SMEs in the food service industry. Their study revealed that while SMEs face significant initial challenges, they eventually adapt through

innovation and customer loyalty programs. They also emphasized the importance of government subsidies and incentives to support these transitions.

Innovations in Sustainable Packaging Alternatives for the Food Service Industry. In previous years, a study by Albertos et al. (2023) focused on innovations in sustainable food packaging and the circular economy. Packaging played a crucial role in preserving food quality, but its environmental impact needed significant transformation globally to combat pollution and mitigate climate change. Implementing innovative, sustainable packaging solutions and strategies for reuse was essential to minimizing plastic waste accumulation, ensuring food safety and quality, and reducing food losses and waste.

Smart packaging integrated advanced technologies like RFID, sensors, and QR codes to address sustainability, transparency, and quality control issues in industries such as food and pharmaceuticals. By monitoring product freshness, extending shelf life, and adapting to environmental changes, it enhanced safety and reduced waste (Ahmed, 2024). This study highlighted smart packaging's role in transforming traditional practices, promoting sustainability, and meeting modern consumer demands.

Packaging was vital for maintaining food quality and safety by protecting products from contamination and extending shelf life. However, reliance on petroleum-based polymers posed significant challenges, including environmental pollution, resource depletion, and single-use waste generation (Khandeparkar et al., 2024). This study emphasized the need for innovative, eco-friendly, and sustainable packaging systems to address these issues, aligning with the food sector's efforts to minimize environmental impact and adopt sustainable practices.

In recent years, the global food industry prioritized sustainability, with significant attention given to transforming food packaging to minimize environmental impact. Traditional

plastic packaging, a major contributor to pollution and waste, was replaced by biodegradable alternatives like PLA, PHA, and cellulose-based films, which decomposed naturally and were derived from renewable resources (Total Food Service, 2024). This aligned with the study's focus on identifying eco-friendly and sustainable packaging systems that reduced waste while maintaining food safety and quality. Additionally, innovations such as edible packaging, smart technologies, and reusable systems demonstrated the industry's commitment to reducing single-use plastics and fostering a circular economy, paving the way for a more sustainable future.

Consumer Response and Behavior. In recent years, there was a growing interest in consumer behavior as a response to environmental policies. Lee et al. (2022) studied consumer responses to a disposable ban in restaurants in Shanghai, China. The authors found that consumers were generally supportive of the ban due to environmental awareness, but their actual behavior was influenced by convenience and cost. The study pointed out that consumers brought reusable containers more frequently if an economic incentive was available. That is, the economic impact was a determining factor for consumer behavior. Thus, this research drew attention to the importance of understanding consumer motivation and barriers in developing appropriate green marketing strategies. The findings suggested that the effective implementation of a disposable ban called for not only regulatory measures but also financial incentives to motivate sustainable consumer practices.

Consumer Behavior Analysis. Consumers were believed to be the driving force for the continuity and advancement of businesses. Authors like Moloy et al. (2022) conducted a study on consumers responding to various environmental initiatives that regulatory authorities took regarding the ban on disposable materials. In the case of dining out, researchers identified that consumers showed a dramatic turn towards sustainable practices in such regulatory post-modified settings

through a study conducted for the *Journal of Consumer Research* in 2020. It also indicated that customers were willing to bring their containers and cutlery, minimizing waste. The key drivers of such behavior change were environmental awareness and obedience to the new policies introduced.

Kim and Hall (2020) analyzed how consumer behavior responded to dining sectors regarding sustainability. Their article in the *International Journal of Consumer Studies* revealed that banning disposable materials increased customer satisfaction and loyalty because restaurants adopted eco-friendly practices. This study emphasized that effective communication and education about the environmental benefits created a positive consumer response.

Impacts of Plastic Bans and Taxes. Previous research also discussed the impacts of plastic banning and taxes on personal behavior. For example, Jia et al. (2019) found that behavioral costs drove a person's plastic pollution mitigation actions through increasing bans and taxation. Muposhi et al. (2019) estimated that consumer plastic consumption in Europe decreased by 66% because of the banning and taxing of single-use plastic bags.

Plastic bag bans and levies also continued to affect other regions of the world. Sobaya et al. (2018) analyzed consumer responses toward the plastic bag levy in Yogyakarta, Indonesia. They concluded that most consumers reduced their use of plastic bags after the policy was introduced. Moreover, Luis et al. (2020) emphasized the psychosocial and economic impacts of the lightweight plastic bag charge in Portugal. Results indicated that respondents agreed with the levy and extended it to all plastics.

Enforcement of Plastic Bans. The implementation of plastic bans was a recurring topic in existing literature. Adam et al. (2020) emphasized that successful plastic bans in West Africa required thorough planning, coordination, and effective execution. Similarly, Browning et al. (2021) highlighted how the

plastic crisis disproportionately affected nations in the global South and advocated for locally managed, decentralized circular economic systems that empowered communities to handle plastic waste more effectively.

In the Philippines, where the government operated under a decentralized structure, responsibilities were distributed among the national government, provinces led by governors, and municipalities and cities governed by mayors. Eisma-Osorio (2021) identified significant challenges in addressing marine plastic debris in the country, noting gaps in institutional and legal frameworks for enforcing plastic bans within this decentralized governance model.

Adaptation Strategies of Businesses to Plastic Ban Regulations. The rising prevalence of microplastics in the environment had sparked significant concern, particularly due to their visible impacts on marine ecosystems. Despite numerous local, regional, and global initiatives to address this environmental crisis, the effectiveness of these regulations and recommendations remained uncertain (Costa et al., 2020). This study highlighted the importance of assessing the applicability and limitations of current plastic-related laws, given the pervasive use of plastics in daily life. By exploring the alignment between existing legislative measures and scientific data, the study aimed to identify challenges and propose actionable strategies for reducing plastic pollution in alignment with sustainable food packaging practices.

According to the study of Legaspi (2024), this article explored how Philippine legislation addressed single-use plastic pollution through the lens of sustainable development. By analyzing policies on plastic production, bans, and restrictions, it highlighted collaborative efforts among national government agencies to reduce plastic use and tackle climate change. The study emphasized the importance of consistent local government regulations, Quezon City as 1 out of 17 LGUs imposed varying restrictions on plastic types. Relating to the

study, it underscored the need for data-driven strategies and effective programs to curb plastic pollution, reflecting the broader commitment to sustainable practices in addressing environmental challenges.

Furthermore, Knoblauch and Mederake (2021) reviewed 45 articles (2019–2021) on government actions regulating plastic pollution, categorizing policies from 2016 to 2021 into production, consumption, disposal, and circular approaches. The findings highlighted that most studies focused on bans targeting single-use plastics (SUP), particularly bags, with increasing regulations on items like Styrofoam and microbeads. While the consumption phase received significant attention, the production phase remained under-regulated and under-researched. Relating to the study, this underscored the need for comprehensive approaches addressing all stages of the plastic lifecycle to enhance sustainable practices.

Conceptual Framework. This study used the IV-DV model to determine the independent and dependent variables. The independent variable is the environmental impact caused by the ban on disposable materials in dining establishments. This variable represented the shift toward eco-friendly practices such as the elimination of single-use plastics and the integration of sustainable alternatives like biodegradable utensils and paper straws. These changes were driven by growing environmental concerns and policies that promote sustainability. The study aimed to understand how these environmental efforts affect customer experience in the food service industry.

The dependent variables were convenience and customer satisfaction. Convenience referred to how easily customers can adapt to the changes brought by the ban whether the alternatives provided (like paper straws or compostable containers) meet their expectations in terms of usability, durability, and comfort. Customer satisfaction, on the other hand, captured the overall emotional response to these changes whether consumers feel pleased or frustrated by the shift, and how it influences their

willingness to return or support the establishment. Both of these variables were critical in assessing the success of the environmental policy from a consumer standpoint.

The relationship between the independent and dependent variables is central to this study. It explores how the implementation of environmentally driven policies (IV) influences customer behavior and perceptions (DV). Specifically, it analyzed whether these green initiatives enhanced or hindered the dining experience in terms of convenience and satisfaction. Understanding this relationship helps inform businesses on how to better manage customer expectations while staying compliant with sustainability standards—ultimately forming the basis for a more effective green marketing plan.

Statement of the Problem. The study sought to evaluate how behavioral shifts impacted the financial dynamics within the mall's dining sector. By analyzing consumer responses and their subsequent effects on financial considerations and challenges, customer satisfaction, and operational costs, this study aimed to comprehensively understand the banning on disposable materials.

Specifically, it sought to answer the following questions:

1. What is the demographic profile of the consumers in terms of:
 - 1.1 Age;
 - 1.2 Gender; and,
 - 1.3 Monthly Income?
2. What is the assessment to the production process in food services on banning of disposable material in terms of:
 - 2.1 Convenience;
 - 2.2 Customer Satisfaction; and,
 - 2.3 Environmental Impact?
3. What operational adjustments have been necessary to comply with the ban, and how have they influenced overall business efficiency?

4. What are the factors that influence customers' acceptance to shift from disposable to sustainable alternatives in dining establishments?
5. Is there a significant relationship in adopting green marketing practices in terms of convenience and the environmental impact?
6. Is there a significant relationship in adopting green marketing practices in terms of customer satisfaction and the environmental impact?
7. How do the assessment of consumers in the production processes of food services affect the operational adjustments and factors that influences acceptance on shifting to green marketing practices in dining establishments?
8. What green marketing plan can be proposed to enhance convenience and customer satisfaction amidst the banning of disposable materials?

METHODOLOGY

Research Design. The study employed a mixed-method research design to comprehensively examine the financial implications and consumer responses to the ban on disposable materials in dining establishments. According to Creswell (2014), integrating qualitative and quantitative methods allows for a more in-depth analysis of complex issues, making this approach particularly suitable for the study. The quantitative component assessed the production processes and waste in food service on banning disposable materials, its operational adjustments and the factors that influences.

Meanwhile, the qualitative data offered a structured assessment to understand consumer preferences and trends regarding convenience, perceived impact and environmental impact while the qualitative findings provided context to business owner/manager, shedding light on the reasons behind behavioral shifts. This dual approach ensured a well-rounded analysis of the policy's impact

identifying not only detect financial effects but also the social and psychological factors influencing consumer responses.

Population and Samples. For the consumer perspective, twenty (20) customers per restaurant—totaling 100 consumers—were selected based on their awareness and experience with the establishment's plastic-free policies. Prior to administering the survey, the researcher confirmed each customer's familiarity with the ban. Consumers who were unaware of the plastic ban or had no experience dining under the new regulations were excluded to ensure the integrity of the data collected.

For the managerial viewpoint, one (1) manager from each establishment was purposively selected to participate in an in-depth interview. Inclusion criteria for staff participants were based on their direct involvement in decision-making, implementation, or operations related to the plastic bans such as managers, supervisors, or key personnel responsible for procurement and sustainability measures. Staff members without direct knowledge or involvement in the ban, such as janitors, security guards, or utility personnel, were excluded to maintain the relevance and accuracy of the data.

Research Setting. The study was conducted at Quezon Avenue, Quezon City, which presented an ideal locale for examining the financial effects of behavioral shifts in dining and consumer responses to the ban on disposable materials. This location was chosen due to its diverse demographic characteristic, which represents urban consumer behavior.

As a popular dining destination, Quezon Avenue featured a variety of restaurants and food outlets catering to different consumer preferences. This diversity provided a rich ground for observing changes in dining habits and responses to sustainability initiatives. The recent ban on disposable materials in the city offered a unique opportunity to assess how consumers adapted to eco-friendly practices and how these shifts impacted their spending patterns.

Research Instrument. The study used a researcher-made questionnaire with the assistance of the panelists and research adviser. The questionnaire checklist consisted of printed or written questions with multiple-choice options, intended for use in surveys or statistical studies. The instrument employed was a structured, self-constructed questionnaire created by the researchers, containing items that the chosen respondents were required to answer in a specific format. The survey questionnaire played a crucial role as the main data source, enabling the organized collection of information regarding the characteristics, perspectives, and behaviors of the community.

In answering the first research question, the survey adopted the quantitative method of gathering the demographic details of consumers based on age, gender, and monthly income. For the second research question, the Likert Scale survey questionnaire was used to assess consumer attitudes toward the ban, allowing respondents to provide comments regarding convenience, customer satisfaction, and perceived environmental impact. Financial analysis was also based on sales and cost information from dining establishments to explore the short-term and long-term economic consequences, such as increased operational costs, conformity benefits, and potential grants related to sustainability. Moreover, interviews were conducted for the qualitative part to understand the operational and financial challenges these establishments faced in determining appropriate adaptation strategies. Synthesized findings—both qualitative and quantitative—helped inform a proposal for sustainable practices to mitigate identified challenges, increase financial viability, and promote environmental responsibility.

The instrument used was researcher-made. To construct the instrument for the study, the researcher developed a comprehensive questionnaire designed to gather data from the selected population. This process involved defining clear and concise questions that covered various aspects of consumer behavior

and financial attitudes toward the ban. The instrument underwent a thorough validation process, where it was reviewed by experts in environmental policy and consumer behavior to ensure its relevance and accuracy. These validators possessed significant qualifications, including advanced degrees and professional experience in related fields. To ensure internal validity and consistency, the instrument underwent pilot testing with a small sample resembling the study's target population. Feedback from this test was used to refine the questions, enhance clarity, and ensure that the instrument effectively captured the necessary data to support the development of a green marketing plan.

The research instrument for this study was developed to systematically collect data on consumer behavior, financial implications, and operational challenges associated with the disposable ban in dining establishments. The questionnaire comprised both closed- and open-ended questions designed to address the study's objectives, including demographic profiles, consumer attitudes toward sustainable practices, and financial impacts on businesses. The survey items were carefully formulated to ensure clarity, validity, and relevance, drawing insights from existing literature on consumer behavior, sustainability, and environmental regulations. This instrument was structured to facilitate the collection of both quantitative and qualitative data, consistent with the study's mixed-methods approach.

To ensure the instrument's effectiveness, a multi-step validation process was implemented. First, experts in environmental policy and consumer behavior evaluated the questionnaire for relevance, accuracy, and clarity. Their feedback was incorporated to enhance the instrument's validity. Following this, a pilot test was conducted with a small sample from the target population to assess question clarity and overall reliability. Any identified issues from the pilot test were addressed through necessary revisions to ensure the instrument effectively captured the required data.

To determine internal consistency, Cronbach's Alpha was calculated for each construct measured by the questionnaire. The overall reliability of the instrument was found to be $\alpha = 0.830$, indicating a high level of internal consistency.

Data Collection. The data-gathering procedure began with acquiring informed consent from the restaurant managers, outlining the purpose of the study and ensuring their understanding of the research process. Subsequently, consent was sought from the respondents, ensuring that they were informed about the nature of the study, their right to confidentiality and anonymity, and their voluntary participation. The data collection process utilized a mixed-method approach to comprehensively address the research questions.

The first part of the data collection involved a demographic survey to gather information such as age, gender, and monthly income from respondents, which addressed the first research question. The second part included a Likert scale survey questionnaire to assess consumers' perceptions of convenience, customer satisfaction, and the environmental impact of the disposable material ban. This allowed for the measurement of attitudes and behaviors toward the ban and its perceived impact on dining experiences.

Financial status on their profile were gathered from participating restaurants most especially to the active and non-active consumers from the implementation of banning of disposable materials. The statistical analysis of the data about the perceptions of the consumers included the assessment to the production processes and waste in food services when dealing with the banning of disposable materials.

Interviews were conducted with restaurant managers to explore the operational and financial challenges they faced in adapting to the ban. This qualitative data provided deeper insights into the practical implications of the ban and helped identify potential strategies for overcoming challenges.

Statistical analysis was employed to analyze the quantitative data from the demographic survey using the 5-Point Likert Scale. Descriptive statistics summarized the data, while inferential statistics helped identify significant relationships between consumer demographics, perceptions, and behaviors. For the assessment to production processes and waste in food service as well as the operational adjustments and factors were also assessed using the quantitative phase. The qualitative analysis, however, used the theoretical sampling to determine its major and sub-themes based on the opinions of the selected managers.

The study utilized triangulation to enhance the validity of findings by integrating quantitative survey data, qualitative interviews, and document analysis. This approach allowed for a comprehensive understanding of how operational adjustments, consumer perceptions, and environmental impacts interact in the shift away from disposable products. By combining multiple data sources, the study ensured a balanced perspective, reducing biases and strengthening the reliability of the results.

The data were presented in both numerical and narrative forms, ensuring that both the statistical findings and qualitative insights were communicated effectively. The interpretation of the data focused on identifying patterns and correlations that informed the development of sustainable practices. These findings were synthesized to propose strategies that enhanced both the financial viability and environmental responsibility of dining establishments. The research aimed to provide actionable recommendations for restaurant managers to integrate sustainable practices while maintaining or improving their financial performance.

Strict data protection measures were implemented to ensure the confidentiality and security of all collected information. Respondent data were anonymized to prevent identification, and access to raw data was restricted to authorized researchers only.

Digital records were encrypted and securely stored in a protected database, while any physical documents were kept in a locked storage facility. Data were retained only for the necessary duration to complete the analysis and were securely deleted or disposed of upon study completion. The study adhered to all applicable data privacy regulations, including informed consent protocols and confidentiality agreements, to uphold ethical research standards.

Data Analysis. The statistical treatment for this study involved a combination of quantitative and qualitative analysis tools. First, Frequency Distribution was used to determine the frequency of appearance in each profile while Percentage Distribution determined the proportion of each profile category. On the other hand, General Weighted Mean yielded the perception average of respondents towards the production processes and waste in food service and the terms on financial effects of banning disposable materials. Then, Pearson r was used to compare the significant relationship of the assessment of production processes and waste in food service on banning of disposable material to the short- and long-term financial effects of banning disposable materials on dining establishments in Quezon City. Lastly, thematic analysis was employed to analyze the qualitative results. In this phase, themes and patterns were generated from the responses.

RESULTS

Table 1
Frequency and Percentage Distribution of Demographic Profile

	Profile	Frequency	Percentage
Age	< 18 years old	9	9.0
	18-24 years old	16	16.0
	25-34 years old	41	41.0
	35-44 years old	24	24.0
	45-54 years old	5	5.0
	55-64 years old	1	1.0
	> 65 years old	4	4.0
Gender	Male	38	38.0
	Female	59	59.0
Monthly Income	< Php 20,000	45	45.0
	Php 20,001-40,000	47	47.0
	Php 40,001-50,000	4	4.0
	> Php 50,000	2	2.0
	> Php 50,000	2	2.0
Total		100	100

Table 1 presents the distribution of the profile of the consumers in terms of their ages, gender, and monthly income. Based on the profile as to age, it revealed a diverse age distribution, with the majority (41.0%) belonging to the 25-34 age group, followed by those aged 35-44 (24.0%). The younger demographic, specifically individuals aged 18-24, accounts for 16.0%, while minors under 18 made up 9.0%. Older respondents were relatively fewer, with only 5.0% in the 45-54 age range, 1.0% in the 55-64 bracket, and 4.0% aged 65 and above. These findings suggested that the sample consists primarily of young to middle-aged adults, who are typically active in the workforce and decision-making processes.

Table 2
Mean Distribution on the Assessment of Convenience

Indicators	Mean	SD	Interpretation
1. The use eco-friendly packaging provides excellent dining experience.	4.50	.59	Strongly Agree
2. The switch to reusable containers and utensils is more accessible.	4.32	.72	Strongly Agree
3. There is no problem in adapting self-containers and utensils from customers when dining to a dining establishment.	3.30	.73	Neutral
4. The restaurant strongly prioritizes sustainability and easily accessible to customers.	2.88	.79	Neutral
5. The sustainable packaging of takeout and delivery orders are very comfortable and fitting to my lifestyle.	4.40	.62	Strongly Agree
Weighted Mean	3.88	.69	Agree

Table 2 presents the assessment to the convenience towards the production processes and waste in food service from banning disposable materials. Based on the data, respondents strongly agreed that eco-friendly packaging provided an excellent dining experience ($M = 4.50$, $SD = .59$) and that switching to reusable containers and utensils was accessible ($M = 4.32$, $SD = .72$). Additionally, sustainable packaging for takeout and delivery orders was rated highly ($M = 4.40$, $SD = .62$), suggesting that consumers appreciated the convenience alongside sustainability. These results aligned with studies that indicated environmentally conscious practices positively impacted customer satisfaction and brand loyalty in the food service industry (Chen & Zhao, 2023).

However, there was a neutral stance regarding customers adapting to bringing their own self-containers and utensils ($M = 3.30$, $SD = .73$), as well as the restaurant's prioritization of sustainability and accessibility ($M = 2.88$, $SD = .79$). This suggested a gap between consumer willingness to support sustainability and the actual implementation by dining establishments. Prior research highlighted that the willingness of customers to make behavioral changes, such as carrying personal utensils, were varied based on convenience and awareness (Borrelle et al., 2020). The overall weighted mean ($M = 3.88$, $SD = .69$) suggested a generally positive outlook on sustainability efforts, though improvements in accessibility and adaptation were needed.

Based on the findings, it was a clear manifestation that while consumers appreciated eco-friendly packaging and sustainable initiatives, there were challenges in fully integrating these practices into everyday dining behaviors.

Table 3
Mean Distribution on the Assessment of Customer Satisfaction

Indicators	Mean	SD	Interpretation
1. I am satisfied with the quality of service that has adopted green practices.	3.99	.73	Agree
2. I feel pleased with the taste and presentation of food, even when served in eco-friendly packaging.	4.14	.84	Agree
3. I am content with eco-friendly restaurants, as their quality and services meet my expectations.	4.08	.90	Agree
Weighted Mean	4.07	.82	Agree

Table 3 presents the assessment to customer satisfaction towards the production processes and waste in food service from banning disposable materials. Based on the data, respondents agreed that they were satisfied with the quality of service provided by eco-friendly establishments ($M = 3.99$, $SD = .73$) and that the taste and presentation of food remained pleasing even when served in sustainable packaging ($M = 4.14$, $SD = .84$). Additionally, respondents expressed contentment with eco-friendly restaurants, stating that the quality and services met their expectations ($M = 4.08$, $SD = .90$).

The overall weighted mean of 4.07 ($SD = .82$) further indicated that respondents had a generally positive outlook on green restaurant practices. However, while satisfaction levels remained high, slight variations in responses suggested that some consumers might still have reservations about fully embracing sustainability in dining. These findings underscored the importance of balancing sustainability with service quality to maintain high customer satisfaction levels.

Based on the findings, it was a clear manifestation that customers responded positively to restaurants that implemented green practices, demonstrating a strong acceptance of sustainability in dining. However, continued efforts were necessary to enhance consumer awareness and engagement in eco-friendly initiatives to ensure long-term adoption (Chaturvedi et al. 2022). Restaurants needed to maintain high service quality while strengthening their sustainability efforts to reinforce customer trust and satisfaction.

Table 4
Mean Distribution on the Assessment of Perceived Environmental Impact

Indicators	Mean	SD	Interpretation
1. Supporting restaurants with sustainable packaging makes me feel like a responsible consumer and benefits the environment.	4.58	.52	Strongly Agree
2. I am helping to decrease waste and pollution and motivate me to choose eco-friendly dining options.	4.34	.64	Strongly Agree
3. At restaurants without disposables, I see less waste, making me feel impactful.	4.56	.50	Strongly Agree
4. This awareness encourages me to support green dining initiatives.	4.63	.51	Strongly Agree
5. This sense of responsibility guides my dining choices.	4.58	.51	Strongly Agree
Weighted Mean	4.54	.54	Strongly Agree

Table 4 presents the assessment to perceive environmental impact towards the production processes and waste in food service from banning disposable materials. Based on the data, participants believed that patronizing eco-friendly restaurants made them feel like responsible consumers contributing to environmental benefits ($M = 4.58$, $SD = .52$). Additionally, they felt motivated to choose eco-friendly dining options as a way to decrease

waste and pollution ($M = 4.34$, $SD = .64$). Respondents also observed that restaurants without disposable packaging produced less waste, reinforcing their sense of environmental responsibility ($M = 4.56$, $SD = .50$).

Furthermore, respondents strongly agreed that their awareness of environmental issues encouraged them to support green dining initiatives ($M = 4.63$, $SD = .51$) and that their sense of responsibility guided their dining choices ($M = 4.58$, $SD = .51$). The overall weighted mean of 4.54 ($SD = .54$) indicated a strong inclination toward sustainability-driven decision-making in restaurant selection. These findings suggested that increasing consumer education and awareness could further strengthen environmentally responsible dining habits.

Based on the findings, it was a clear manifestation that sustainability-conscious consumers were highly motivated to support green dining initiatives, driven by a strong sense of responsibility and awareness of environmental benefits. However, continued efforts were needed to enhance accessibility and convenience in sustainable dining options to encourage broader consumer adoption (Boz et al., 2020). Restaurants could leverage this positive perception by actively promoting their sustainability efforts and engaging consumers through eco-conscious branding and marketing strategies

Table 5
Pearson r Test Between Convenience and Environmental Impact

Variables		Pearson R	P-Value	Decision	Conclusion
Convenience	Environmental Impact	.008	.938	Accept Ho	Not Significant

Table 5 presents the Pearson-r results of the relationship between the adoption of green practices in terms of convenience and environmental impact. The analysis revealed a negligible relationship ($r = .008$) between convenience and environmental impact. Furthermore, the p-value of .938 exceeded the significance level, leading to the acceptance of the null hypothesis. This indicates that there is no significant relationship between the adoption

of green practices in terms of convenience and environmental impact.

Based on the findings, the negligible relationship between convenience and environmental impact suggested that ease of use alone does not significantly influence how consumers perceive the environmental benefits of green practices. This finding aligned with studies that suggested although convenience influenced sustainable choices, it was not the main factor that drove environmental awareness. As a result, businesses aimed to promote green practice adoption should prioritize communicating the tangible benefits and overall usefulness of sustainability efforts rather than focusing solely on convenience ("What do Consumers Really Think About.....," 2022).

Table 6
Pearson r Test Between Customer Satisfaction and Environmental Impact

Variables		Pearson R	P-Value	Decision	Conclusion
Customer Satisfaction	Environmental Impact	.214	.032	Reject Ho	Significant

Table 6 presents the significant relation between the customer satisfaction and environmental impact of the consumers. The analysis revealed an acceptable relationship ($r = .214$) between customer satisfaction and perceived environmental impact. Furthermore, the p-value of .032 exceeded the significance level, leading to the negligence of the null hypothesis. This indicated that there was a significant relationship between the adoption of green practices in terms of customer satisfaction to environmental impact.

The findings demonstrated a significant positive relationship between the customer satisfaction of green practices and environmental impact, suggesting that consumers who recognize the benefits of sustainable initiatives were more likely to acknowledge their environmental advantages. This correlational result aligns with prior research which indicates that consumers' perception of customer satisfaction plays a crucial role in their willingness and acceptance to adopt eco-friendly behaviors (Kumar et al., 2023).

Operational Adjustments and Overall Business Efficiency. The findings from the selected dining establishment managers indicate that operational adjustments following the ban on disposable materials yielded varied financial impacts. Most managers reported that operational costs remained stable, with some, like Manager 3, even noting a decrease in expenses due to the elimination of plastic purchases. This suggests that prior investments in reusable materials or the capacity to absorb changes through efficient strategies allowed certain establishments to transition without financial strain. However, financial challenges did surface for others, such as issues in waste management (Manager 2) and adjustment costs for adopting sustainable materials (Managers 4 and 5), indicating that the transition required both logistical and financial recalibrations.

Sales and revenue appeared largely unaffected by the shift to eco-friendly practices, as all managers unanimously reported no significant changes in customer purchasing behavior. This reinforces the idea that factors like product quality and service are more influential to consumers than the materials used for packaging (Managers 1–5). To manage the transition, businesses implemented a range of strategies including gradual reduction of plastic use (Manager 1), customer engagement through "Bring Your Own" (BYO) campaigns (Managers 3 and 4), and discount incentives for sustainable behaviors (Manager 4). These practices not only supported regulatory compliance but also fostered consumer participation and minimized financial disruptions (Chaturvedi et al., 2022).

Despite challenges related to higher costs of eco-friendly alternatives, particularly noted by Managers 2 and 3, some establishments remained committed to sustainability as part of their business identity (Manager 4). Support needs varied, ranging from supplier collaboration (Manager 1), employee training (Manager 3), and internal mindset shifts (Manager 4), to clear regulatory guidelines (Manager 5). These perspectives underscore the importance of both internal cultural readiness and external support systems in

achieving effective sustainability transitions (Muposhi et al., 2019). Ultimately, successful adaptation depended on a blend of proactive management, financial planning, and stakeholder cooperation.

Factors that Influence Customer's Acceptance. The perceptions of the selected managers revealed that the enforcement of the disposable materials ban did not significantly alter consumer behavior. Most managers—such as Managers 1, 2, and 5—reported no customer complaints, indicating smooth acceptance of the changes. Managers emphasized that the provision of practical alternatives, like paper straws and long teaspoons, helped facilitate this transition. For example, Manager 3 noted that customers remained satisfied as long as suitable alternatives were available. This suggests that customer acceptance was largely influenced by the businesses' ability to maintain convenience and service quality, aligning with the findings of Vicente et al. (2023) regarding the importance of offering user-friendly sustainable options.

Despite overall acceptance, some resistance persisted, particularly from customers who preferred traditional plastic items. Manager 1 observed a continued preference for plastic straws and packaging, though this did not escalate into complaints. A recurring theme among the responses was the challenge of limited consumer awareness. Manager 2 highlighted that some customers remained uninformed about the purpose of the ban, which hindered smoother adoption. To combat this, businesses implemented educational strategies. For instance, Manager 3 recommended the use of informational posters to communicate with non-regular patrons, reducing the burden on staff and enhancing overall customer understanding of eco-friendly initiatives. These strategies reflect the importance of consumer education in supporting sustainability transitions (Lee et al., 2021).

Gradual behavioral shifts were observed as customers grew more accustomed to eco-friendly practices. Manager 4 explained that,

initially, regular customers resisted the changes but eventually accepted them through consistent staff engagement. However, full engagement was not universal—Manager 5 mentioned that some customers remained indifferent, showing little to no interest in sustainability efforts. This indicates that while education and communication can facilitate acceptance, not all consumers will be motivated by environmental considerations. As noted by Chen and Huang (2021), balancing education, customer preferences, and operational feasibility is essential to encouraging wider adoption of sustainable behaviors in the food service industry.

Table 7
Proposed Green Marketing Plan

7Ps	Proposed Green Marketing Strategies	Timetable	Budget (PHP)
Product	• Offer a diverse menu featuring locally sourced, organic ingredients. • Implement eco-friendly packaging. • Introduce a line of plant-based or vegetarian specialty dishes to cater to environmentally conscious consumers.	1-3 months	100 000-500,000
Price	• Maintain competitive pricing while integrating cost of sustainable materials into pricing strategy. • Introduce discounts or loyalty rewards for customers using reusable containers or ordering eco-friendly items.	1 month	25 000-100,000
Place	• Use sustainable materials for restaurant decor (e.g., reclaimed wood, biodegradable materials). • Partner with local suppliers to reduce the carbon footprint associated with food transport.	2-4 months	100 000-500,000
Promotion	• Utilize social media to promote eco-friendly initiatives and share sustainability stories. • Run awareness campaigns highlighting the environmental benefits of dining at eco-friendly establishments. • Offer workshops or events that educate customers about sustainability issues.	Ongoing	20 000-500,000
People	• Provide staff training focused on sustainability practices and customer engagement strategies. • Encourage employees to promote eco-conscious options to customers actively.	1-2 months	30 000-100,000
Process	• Streamline the ordering and serving process to accommodate reusable containers (e.g., easy-to-use systems for BYO policies). • Implement a clear waste management and recycling process for the kitchen and dining areas.	2 months	20 000-100,000
Physical Evidence	• Use signage to inform customers about the eco-friendly practices and materials being used. • Display sustainability certifications or local sourcing badges to reinforce commitment to environmental responsibility. • Create a visually appealing eco-friendly atmosphere that reflects the brand's sustainability efforts.	1-3 months	25 000-300,000

DISCUSSION

The evaluation of production processes and wastage in food service following the disposable material ban reveals a strong interaction between customer satisfaction, environmental impacts, and operational

considerations, aligning with trends in the broader restaurant industry. Consumer data showed a high level of support for sustainable practices, particularly for sustainable packaging ($M = 4.50$) and reusable containers ($M = 4.32$). Both studies emphasize the growing demand for eco-friendly dining options, with younger generations particularly prioritizing sustainability in their dining choices. Despite a generally positive reception towards eco-friendly packaging ($M = 4.07$), there were concerns about consumer willingness to fully embrace self-contained alternatives and their perception of restaurants' commitment to sustainability ($M = 2.88$). This indicates that while there is an observable trend toward sustainable practices, as noted by Chaturvedi et al. (2022).

Based on findings, respondents generally found eco-friendly packaging convenient and positively impacted their dining experience, though some hesitated to adopt self-containers. Customer satisfaction remained high despite the transition to sustainable practices, with respondents agreeing that service quality and food presentation were unaffected. Additionally, diners strongly perceived their support for green restaurants as beneficial to the environment, reinforcing their sense of responsibility in choosing sustainable dining options.

The results indicated that there was no significant relationship between convenience and environmental impact, as shown by a negligible correlation ($r = .008$, $p = .938$). However, a moderate positive relationship was found between customer satisfaction and environmental impact ($r = .214$, $p = .032$), suggesting that respondents who found green practices useful were more likely to recognize their environmental benefits.

From an operational perspective, managerial feedback revealed mixed results regarding the impact of the ban on costs and customer behavior, mirroring insights from the study of Chen and Huang (2021). Some managers (Managers 1, 2, 4, and 5) reported no significant change in operational costs, with most

customers still satisfied ($M = 3.99$), suggesting that the transition to sustainable practices could be neutral in terms of financial impact, as reported in Jia et al. (2023) and Moshood et al. (2022). However, one manager (Manager 3) experienced cost savings due to reduced use of disposable products, a finding consistent with those of Williams and Rodriguez (2020), who noted that long-term benefits from sustainability initiatives include reduced waste management costs. Despite these benefits, challenges were noted in waste management logistics, with some managers reporting inefficiencies and monetary loss (Manager 2), a point emphasized in the findings of Moloy et al. (2022), who discussed the operational complexities arising from sustainability transitions in food service.

Furthermore, the study highlighted a need for improved communication and education on sustainability in restaurants. Managers indicated that a lack of customer knowledge made it difficult for them to accept green practices, aligning with earlier research by Lee et al. (2021) and Vicente et al. (2023), which showed that consumer support for environmental policies often depends on proper education and awareness.

In conclusion, while the shift toward sustainable practices in food service aligns with broader industry trends and consumer expectations, the results underscore the importance of effectively bridging the gap between sustainability initiatives and customer behavior. Both operationally and communicatively, food service establishments need to adopt more robust strategies to educate and engage customers, ensuring that sustainability transitions are embraced by all stakeholders, as suggested by the cross-referenced studies.

Conclusion. The study found that most respondents, especially the randomly selected consumers, were female, with an average income that was sufficient for basic living. Respondents generally viewed eco-friendly packaging as convenient and beneficial for their dining experience, although there was some

hesitation towards using self-containers, preferring traditional dining practices instead. Customer satisfaction remained high throughout the transition to sustainable practices, demonstrating the effectiveness of these initiatives in maintaining dining standards.

The study accepted the null hypothesis (H_01), indicating that there was no significant relationship between the adoption of green practices in terms of convenience and environmental impact. However, the null hypothesis (H_02) was rejected regarding the relationship between customer satisfaction and the adoption of green practices, indicating that there was a significant relationship between the adoption of green practices in terms of customer satisfaction and environmental impact.

Managers reported mixed financial impacts from the ban on disposable materials. While some saw no change or cost reduction due to decreased plastic use, others faced challenges in waste management and adjustment costs. Despite these challenges, many adopted strategies to promote sustainability while maintaining profitability. Operational adjustments, consumer awareness, and proactive involvement were crucial for a successful transition from disposable products and aligning business objectives with sustainability efforts.

The study implied that food businesses could remain profitable while becoming eco-friendlier if they planned well and involved both staff and customers. It showed the need for clear policies, proper training, and ongoing customer education to support the transition. The findings helped guide the development of green marketing plans that improved customer loyalty, supported sustainability goals, and strengthened the business's reputation.

In terms of contribution to knowledge, this research offers valuable insights into how environmental regulations interact with consumer behavior and their financial implications, addressing an existing gap in

understanding these dynamics. It is recommended that policymakers utilize these insights to craft regulations that support both environmental goals and economic sustainability.

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