

SUSTAINABLE PRACTICES IN THE FOOD INDUSTRY: HOW CUSTOMERS PERCEIVE RESTAURANTS USING PLASTIC VS. PAPER STRAWS

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ABSTRACT

This study explores consumer perceptions of sustainable practices in the food industry, focusing on the use of plastic versus paper straws in restaurants in Bangkok. With increasing environmental awareness, many restaurants have adopted paper straws as a more sustainable alternative to plastic. However, consumer experiences with these alternatives have sparked debates regarding their practicality, functionality, and overall impact on sustainability. Using a qualitative research approach, this study collected data through semi-structured interviews with 15 participants from diverse age groups, occupations, and genders. Snowball sampling was employed to ensure that all respondents had experience with both plastic and paper straws in Bangkok restaurants. Findings reveal that while paper straws were initially perceived as an inclusive and responsible choice, their functional limitations, such as sogginess and breakage, led consumers to question their sustainability. The results indicate that while consumers appreciate restaurants' efforts in adopting paper straws, many reconsider their preference for plastic straws due to their durability and ease of use. Participants expressed concerns that using multiple paper straws per drink may offset their environmental benefits, making them potentially less sustainable than plastic. Despite this, restaurants that implement paper straws are generally viewed positively, as they are seen as environmentally conscious businesses. However, the study suggests that offering both plastic and paper straws would be a more balanced approach, allowing for sustainability while maintaining customer satisfaction. These findings contribute to the ongoing discourse on sustainable practices in the food and beverage industry, highlighting the complex relationship between consumer expectations, convenience, and environmental responsibility.

Keywords: Sustainable Practices, Consumer Perception, Plastic vs. Paper Straws

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INTRODUCTION

In recent years, the food industry has faced increasing pressure to adopt sustainable practices, driven by growing consumer awareness of environmental issues. One notable area of focus is the choice between plastic and paper straws in restaurants. Plastic straws, which can take hundreds of years to decompose, contribute significantly to environmental pollution, particularly in marine ecosystems (Walterhoefer, 2024). In contrast, paper straws are biodegradable and decompose much more quickly, presenting a more eco-friendly alternative. This shift towards sustainable alternatives is not only a response to environmental concerns but also reflects changing consumer preferences. Studies have shown that consumers are increasingly willing to support businesses that demonstrate environmental responsibility, with many expressing a preference for establishments that implement sustainable practices (L.E.K. Consulting, 2023). However, the transition from plastic to paper straws has also sparked debates regarding functionality and customer satisfaction (UrthPact, 2020). Some consumers report negative experiences with paper straws, citing issues such as sogginess and altered taste, which can impact their overall dining experience. This research aims to explore how customers perceive the use of plastic versus paper straws in restaurants, examining the balance between environmental benefits and customer satisfaction.

This research focuses on Bangkok due to a notable trend: an increasing number of restaurants have transitioned to using paper straws (Khaosod English, 2020; Nation Thailand, 2020), while others have reverted to plastic straws after initially adopting paper alternatives (Bangkok Post, 2025). This phenomenon presents a unique opportunity to investigate consumer perceptions and the factors influencing these decisions within the city's dynamic food industry.

Research objectives

- 1) To examine consumer perceptions of plastic and paper straws in restaurants in Bangkok. This research seeks to understand customer attitudes, preferences, and experiences related to the use of plastic versus paper straws, focusing on factors such as convenience, usability, and sustainability.
- 2) To analyze the impact of environmental awareness on consumer preferences for straw materials. The researcher aims to assess whether consumers' knowledge of environmental issues influences their choices and willingness to support restaurants that use paper straws.
- 3) To investigate customer satisfaction levels regarding the functionality of plastic and paper straws. This objective explores how different straw materials affect the overall dining experience, including aspects such as durability, taste alteration, and usability.

LITERATURE REVIEWS

This research includes the significant integrated knowledge of sustainability, the management of the restaurant, environmental consideration and customer satisfaction; therefore, the researcher includes these related literature to construct the framework of this study.

Sustainability in the Food and Beverage Industry

The food and beverage industry plays a pivotal role in global sustainability efforts due to its substantial environmental, economic, and social impacts. As one of the largest sectors worldwide, it significantly contributes to greenhouse gas emissions, resource consumption, and waste generation. Consequently, there is an increasing emphasis on adopting sustainable practices within this industry to mitigate adverse environmental effects and promote long-term viability (Awan et al., 2023).

Sustainability in the food and beverage sector encompasses various dimensions, including environmental stewardship, social responsibility, and economic viability. Environmental sustainability focuses on reducing resource usage, minimizing waste, and lowering greenhouse gas emissions. Social sustainability involves ensuring fair labor practices, supporting local communities, and promoting equitable food distribution. Economic sustainability aims at

achieving profitability while maintaining ethical standards and reducing environmental footprints (Garzón-Jiménez & Zorio-Grima, 2021). Implementing sustainable practices offers numerous benefits to food and beverage companies. Research indicates that firms engaging in robust environmental disclosures and promoting gender equality on their boards can experience a reduced cost of equity, enhancing financial performance. Conversely, companies with high carbon emissions may face financial penalties and increased equity costs (Garzón-Jiménez & Zorio-Grima, 2021).

Despite these advantages, the industry faces challenges in adopting sustainability measures. Barriers include the need for substantial investments in sustainable technologies, potential disruptions to existing supply chains, and the complexity of measuring sustainability outcomes. A study evaluating large food and beverage companies highlighted that while there is a growing commitment to sustainability, practical implementation often encounters obstacles such as financial constraints and resistance to change (Tingchi Liu et al., 2021).

Consumer awareness and demand for sustainable products are also driving forces behind the industry's shift toward sustainability. A comparative study of Malaysia, India, and Indonesia revealed that consumers' knowledge and attitudes significantly influence the adoption of sustainable practices in the food and beverage sector. This underscores the importance of educating consumers and aligning business strategies with environmental and social governance to meet evolving market expectations (Awan et al., 2023).

Plastic Straw Usage and Environmental Impact

Plastic straws have become emblematic of the broader issue of plastic pollution due to their widespread use and significant environmental impact. In the United States alone, estimates suggest that hundreds of millions of plastic straws are used daily, contributing substantially to environmental degradation. These straws are lightweight and often evade recycling processes, leading them to accumulate in natural habitats, particularly aquatic ecosystems (AZA, n.d.). The environmental ramifications of plastic straw usage are multifaceted. In marine environments, discarded plastic straws contribute to pollution, posing threats to wildlife through ingestion and entanglement. A poignant example is the viral video of a sea turtle with a plastic straw lodged in its nostril, which underscored the tangible harm caused by such debris. Moreover, as plastic straws degrade, they fragment into microplastics, which persist in the environment and can enter the food chain, affecting a wide range of organisms (Tingchi Liu et al., 2021).

Efforts to mitigate the environmental impact of plastic straws have gained momentum globally. Many regions have implemented bans or restrictions on single-use plastics, including straws, to curb pollution. For instance, the European Union adopted a directive in 2019 aiming to reduce the consumption of single-use plastic products, targeting items most commonly found on beaches, such as straws. Similarly, various U.S. cities and states have enacted regulations to limit or prohibit the use of plastic straws in food service establishments (World Wildlife Fund, n.d.; European Commission, 2019). Despite these initiatives, challenges persist. The recent executive order signed by President Donald Trump in February 2025, reversing previous policies aimed at phasing out single-use plastics in federal operations, highlights the ongoing debate surrounding plastic straw usage. This action underscores the complexities in balancing environmental concerns with practical considerations and industry interests (Milman, 2025).

Paper Straws as a Sustainable Alternative

The transition from plastic to paper straws has been widely promoted as an eco-friendly initiative to mitigate plastic pollution. Paper straws, being biodegradable, are perceived as a sustainable alternative to their plastic counterparts. However, recent studies have highlighted several challenges associated with their use, including quality concerns, environmental implications, and potential health risks as the researcher lists below:

1) Quality and Consumer Perception. A study focusing on Generation Z consumers in Serbia examined the intrinsic quality characteristics, sensory perception, and physical properties of paper straws. The findings revealed that while paper straws are favored for their environmental benefits, issues such as loss of firmness when exposed to liquids and potential alterations in beverage viscosity were noted. These factors can adversely affect the overall drinking experience, leading to consumer dissatisfaction (Djekic et al., 2024).

2) Environmental Considerations. While paper straws are biodegradable, their production is resource-intensive, involving significant water and energy consumption. Additionally, the demand for wood pulp can contribute to deforestation, raising concerns about habitat loss and carbon sequestration. Moreover, the transportation of raw materials and finished products adds to the carbon footprint, potentially offsetting the environmental benefits of using paper straws (Environmental impact of paper straw production, 2023).

3) Health Implications. Recent research has identified the presence of per- and polyfluoroalkyl substances (PFAS) in paper straws. PFAS, often referred to as "forever chemicals," are added to enhance water resistance but are associated with adverse health effects and environmental persistence. A study analyzing various straw materials found that paper straws contained higher concentrations of PFAS compared to other alternatives, raising concerns about their safety and environmental impact (Boisacq et al., 2023).

Consumer perceptions and preferences regarding sustainable practices in the food and beverage industry have undergone significant transformation in recent years. This shift is largely attributed to heightened environmental awareness, health considerations, and evolving social influences, prompting consumers to prioritize sustainability in their purchasing decisions.

Increased Consumer Awareness and Demand

Recent studies indicate a growing consumer commitment to sustainability. For instance, more than half of surveyed consumers have adopted sustainable practices in their food shopping and waste disposal, driven by environmental concerns, personal health, and cost-saving measures (L.E.K. Consulting, 2024). Additionally, a significant portion of consumers are willing to financially support sustainability; U.S. consumers, on average, allocate approximately 20% of their food and beverage expenditures to sustainable products (L.E.K. Consulting, 2023). Furthermore, consumers are willing to spend an average of 9.7% more on sustainably produced or sourced goods, even amidst inflationary pressures (PwC, 2024).

Factors Influencing Sustainable Choices

Several factors influence consumer interest in sustainable food purchases. Health benefits (58.6%), environmental concerns (39.8%), and taste preferences (45.3%) are primary motivators driving the selection of sustainable food and beverage products (Peekage, 2024). Moreover, social support from family and friends, along with health incentives, strongly predicts sustainable buying behavior, while price accessibility appears to have a lesser impact, suggesting that consumers prioritize sustainability and health benefits over cost considerations (McKinsey & Company, 2021).

Disparity between Concern and Purchasing Behavior

Despite the positive trend in sustainability awareness, a gap persists between consumer concerns and actual purchasing behavior. While sustainability is a significant concern for many, only a fraction prioritize it when buying food, often placing attributes such as healthfulness above sustainability (L.E.K. Consulting, 2023). This discrepancy highlights the complexity of consumer decision-making processes and suggests that while sustainability is valued, it may not always be the primary determinant in food purchases.

Implications for the Food and Beverage Industry

The increasing consumer demand for sustainable practices presents both opportunities and challenges for the food and beverage industry. Businesses are encouraged to adapt by implementing sustainable sourcing, reducing waste, and offering products that meet the

evolving preferences of environmentally conscious consumers. Transparency in sustainability efforts and clear communication about the environmental impact of products can enhance consumer trust and influence purchasing decisions (L.E.K. Consulting, 2024).

Consumer Perceptions and Satisfaction

Consumer feedback reflects mixed perceptions of paper straws. A study focusing on Generation Z consumers revealed that while there is an appreciation for the environmental benefits of paper straws, concerns persist regarding their durability and the potential for sogginess, which can detract from the overall beverage experience (Djekic et al., 2024). Similarly, reports have surfaced of customers expressing dissatisfaction with the performance of paper straws, citing issues such as splitting and becoming unusable shortly after immersion in drinks (Haracz, 2025), which leads to this research that aims to find the customer satisfaction and perception of restaurants that use paper straw and plastic straw.

RESEARCH METHODOLOGY

This study employs a **qualitative research approach** to explore consumer perceptions of sustainable practices in the food industry, particularly regarding the use of plastic and paper straws in restaurants. A semi-structured interview method is utilized to gather in-depth insights from participants in Bangkok, Thailand, ensuring that the data reflects local dining experiences and consumer attitudes.

Sampling Strategy

A snowball sampling method is adopted for participant recruitment, allowing the researcher to identify suitable respondents through referrals. This approach is particularly useful for reaching individuals who have firsthand experience with both plastic and paper straws in restaurant settings. A total of 15 interviewees are selected to participate in the study, representing diverse age groups, occupations, and genders to ensure a broad spectrum of perspectives.

Participant Screening Criteria

To maintain the relevance of the responses, a screening process is conducted before the interviews. Prospective participants are required to meet the following criteria:

- 1) They must have experience dining in restaurants in Bangkok that serve both plastic and paper straws.
- 2) Their opinions must be specifically based on their experiences in Bangkok restaurants, excluding perceptions influenced by experiences outside the city.

This screening process ensures that the data collected accurately represents consumer attitudes toward straw alternatives within the local context.

Data Collection Process

The data is collected through in-depth interviews conducted in a conversational yet structured format. The interviews explore participants' experiences, preferences, and opinions regarding straw alternatives in restaurants, focusing on factors such as environmental awareness, functionality, and overall dining satisfaction. The semi-structured format allows for flexibility in responses while maintaining consistency across key discussion points.

Ethical Considerations

All participants are informed about the study's purpose and their rights, including voluntary participation and anonymity. Prior to the interviews, they provide informed consent to participate in the study. The researcher ensures that data is handled with confidentiality and is used solely for academic purposes. By employing qualitative methods with a structured sampling and screening process, this study aims to provide a comprehensive understanding of how consumers in Bangkok perceive restaurants' adoption of sustainable straw alternatives.

RESEARCH RESULTS

The findings of this study reveal that customer experiences with plastic and paper straws differ significantly, with perceptions remaining consistent across various age groups, occupations, and genders. The transition from plastic to paper straws initially generated a sense of inclusivity and environmental responsibility among consumers. However, over time, practical concerns regarding usability and functionality have influenced their perceptions of sustainability and convenience in restaurant settings.

Initial Perception of Paper Straws: A Symbol of Social and Environmental Responsibility

At the initial stage of paper straw adoption, many consumers perceived its use as a socially responsible action. When paper straws first gained popularity, consumers expressed a sense of inclusivity and contribution to environmental sustainability. They felt that by using paper straws, they were actively participating in a larger societal movement aimed at reducing plastic waste and protecting the environment. This positive perception created a temporary shift in consumer attitudes, encouraging acceptance of paper straws despite their functional limitations.

Practical Challenges and Usability Issues

Despite their initial enthusiasm, consumers quickly encountered practical limitations associated with paper straws. Across all demographic groups, respondents expressed frustration with paper straws due to their structural weakness and reduced durability. Many reported that paper straws became soft and soggy within a short period, compromising their ability to effectively consume their beverages.

Furthermore, respondents highlighted spillages and breakage issues, noting that paper straws often led to an inconvenient drinking experience. Unlike plastic straws, which maintain their integrity throughout an entire beverage, paper straws frequently required multiple replacements during a single consumption. Some participants estimated that they needed two to three paper straws to complete a single drink, raising concerns about the actual sustainability of the material.

Re-evaluating the Environmental Benefits of Paper Straws

Initially, respondents viewed paper straws as an eco-friendly alternative to plastic. However, after repeated negative experiences, many began to question whether paper straws were genuinely a more sustainable option. The need for multiple paper straws per drink led some consumers to speculate that their overall environmental footprint might be comparable to or even greater than plastic straws due to the additional raw materials and energy required for production.

Several respondents also pointed out that while plastic straws are single-use, they effectively last through an entire beverage. In contrast, paper straws degrade quickly, increasing waste generation despite their biodegradable properties. This realization led to a shift in consumer attitudes, with some questioning whether plastic straws might actually be a more practical and sustainable option under certain circumstances.

Perceptions of Restaurants Using Paper Straws

Despite functional concerns, respondents generally viewed restaurants that use paper straws positively. Consumers appreciated the effort made by such establishments, believing that these restaurants demonstrate environmental awareness and corporate social responsibility. Many participants acknowledged that while paper straws are not perfect, they still symbolize a restaurant's commitment to sustainable practices.

However, there was also a consensus that offering only paper straws may be too extreme, given their usability issues. Respondents suggested that the ideal approach would be to provide both paper and plastic straws, allowing customers to choose based on their preference and specific needs. By offering a choice, restaurants could balance environmental responsibility with customer satisfaction, ensuring that sustainability efforts do not come at the expense of functionality and convenience.

CONCLUSION

The research findings highlight a complex interplay between environmental consciousness, functional usability, and consumer satisfaction. While paper straws initially symbolized a socially responsible choice, their practical shortcomings have led many consumers to re-evaluate their effectiveness as a sustainable alternative.

Although paper straws present clear environmental advantages, their usability limitations remain a significant drawback. Consumers continue to appreciate restaurants that demonstrate a commitment to sustainability, but they also desire a more balanced approach that accommodates both environmental concerns and functional convenience. Restaurants that exclusively offer paper straws may be perceived as overly rigid, whereas those that provide both options may achieve greater customer satisfaction while still supporting sustainability efforts.

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