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Preference, Practice, Pattern of Paper Bag Usage: A Study on Attitude of Consumers in Odisha, India

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ABSTRACT

The whole world is emphasizing the need for recyclable bags because of environmental concerns regarding the use of plastic bags. In India, steps are also being taken to tackle this deadly global menace, to check the excessive use of plastic bags. Two years back when our government banned the use of plastic bags, the demand for eco-friendly bags increased very significantly. Both the paper and cloth bags are recyclable and reusable too. In this context, the current study is an attempt to understand and analyze the attitude and behavior of consumers, more particularly the users of eco-friendly bags.

As part of empirical survey research, a structured questionnaire was framed based on the specific objectives of studying the 'preference and practice' of paper-bag uses. Out of 350 contacted respondents, finally, 317 respondents of different categories, submitted their responses. A descriptive statistical analysis has been made as per the research objective.

Keywords: Recyclable Bags; Consumer attitude; Buying behavior; Consumer perception.

Introduction

The term "Green Products" commonly denotes items characterized by sustainability and minimal environmental impact. Researchers often categorize these products as "waste reducers" and "resource efficient." While various descriptions abound, the most rational interpretation revolves around environmentally friendly products—those causing minimal harm during use and even after disposal.

Green products are designed to safeguard the environment throughout their lifecycle, encompassing production, utilization, and disposal stages. By minimizing toxic agents, waste, and pollution, these products aim to mitigate environmental damage substantially. This holistic approach not only benefits the environment but also contributes to human health. As societal awareness regarding personal well-being grows, the utility of these green products becomes increasingly apparent.

The escalating menace of environmental pollution has accentuated the demand for green products and environmentally conscious packaging. Pollution, characterized by the inability of the environment to absorb and neutralize human-generated toxic byproducts, underscores the imperative for sustainable alternatives.

In response to this environmental imperative, green products have emerged as a revolutionary solution. By preventing environmental toxicity and pollution, these products have become indispensable. Noteworthy examples of green products include sustainable paper and cloth bags, LED bulbs, and recyclable items such as plastic backpacks and eyewear. While many green products have limited applications, one particular product has revolutionized the entire process.

Given the global prevalence of outdoor shopping, the use of bags for transporting goods has become a ubiquitous practice. Research indicates that nearly every retail establishment includes carry bags as a staple. Despite the inherent necessity, the adverse environmental consequences of traditional plastic bags persist.

Plastic materials, due to their inability to fully degrade in soil, pose significant threats to the environment and human well-being. Consequently, there has been a pronounced shift towards the use of paper bags, constituting 45% of the total demand for eco-friendly bags in India in 2021—an impressive 67% increase. Paper bags continue to dominate the market, meeting nearly half of the demand nationwide.

Additionally, there has been a noteworthy surge in the demand for jute and cotton bags, registering increases of 22% and 78%, respectively. The city of Delhi spearheaded this trend, generating one-third of the demand for paper bags, followed closely by Mumbai and Bangalore, outpacing tier-I cities in India (Mirror, 2022).

History of Paper Bag

The inception of the paper bag industry dates back to 1852 when Francis Wolle, an American inventor, laid the foundation by establishing the first paper bag machine. This marked the pioneering phase of paper bag production, introducing a novel method for crafting these essential commodities (India Today, 2021).

In 1871, Margaret E Knight made a significant contribution to the evolution of paper bag manufacturing by

developing a machine capable of producing flat-bottom paper bags. This innovation earned her the title of “*The Mother of the Grocery Bag*,” recognizing her pivotal role in shaping the industry (India Today, 2021).

The trajectory of paper bag technology witnessed continuous refinement with the contributions of subsequent inventors. Notable figures such as Charles Stilwell and Walter Deubener made advancements in both design and production techniques, contributing to the continuous improvement of paper bag manufacturing processes (India Today, 2021).

The reviewed articles collectively present a comprehensive understanding of the shift towards sustainable practices, particularly the use of biodegradable paper bags, as a viable alternative to plastic bags. Highlighting the direct and adverse environmental impacts of plastic bags, the literature consistently advocated for the adoption of eco-friendly options such as paper bags and cloth bags.

D’souza, Taghian, and Lamb (2006) delved into the diverse factors influencing consumer behavior, considering environmental surroundings and individual mindsets. Their exploration underscored the multifaceted nature of purchasing habits, shaped by both external influences and personal perspectives.

Cherian and Jacob (2012) contributed to the literature by analyzing consumer attitudes toward environmentally friendly goods and establishing a comprehensive framework for green product marketing. Their findings affirmed the necessity of paper bags in the contemporary world, aligning with the broader discourse on the environmental benefits of such products.

Bhatia and Jain (2013) underscored the significance of consumer perceptions and preferences in shaping the current state of the environment. The study aims to comprehend the broader concept of green products, emphasizing the role of sustainable choices in mitigating environmental harm.

Tripathi (2014) addresses concerns regarding the environmental impact of paper bags, acknowledging debates around deforestation. The literature clarifies that while the production of paper products may contribute to tree cutting, the use of paper bags does not necessarily lead to the extinction of more trees.

Makhdoomi and Nazir (2016) focus on variables affecting customers’ inclination towards green

products and their satisfaction levels. Notably, the study identifies youth consumers as more environmentally conscious, willing to pay a premium for environmentally friendly products, and motivated by health considerations.

Shamsi and Siddiqui (2017) employed a research methodology to investigate the importance of green products and users' behavior towards them. Through statistical tests, the study highlights key factors influencing consumers' buying decisions, emphasizing the role of usage, cost, and reusability in shaping preferences for green products.

Sathyapriya and Sekar (2020) contributed insights into consumer perceptions and awareness of green products, considering variables such as brand image, brand awareness, country of origin image, perceived quality, and purchase intention. Their findings suggested that demographic factors such as age, gender, income, or education level do not significantly impact consumer behavior in the context of green products.

Chatterjee (2021) dispels misconceptions about paper bags, emphasizing their minimal environmental impact and sustainable sourcing. The article asserts that paper bags, made from sugarcane waste, straw, juice twine, etc., are recyclable, biodegradable, and emission-free, thus making them a preferable and eco-friendly option.

The report by Bangalore Mirror Bureau (2022) explores the local interest in promoting eco-friendly bags, fueled by consumers' desire for a greener lifestyle. The study suggests that consumers are well-informed about the environmental consequences of plastic bags, and the perceived benefits of eco-friendly bags are substantial.

Overall, the reviewed literature collectively builds a compelling case for the transition from plastic to eco-friendly alternatives, particularly paper bags, emphasizing their environmental benefits, consumer perceptions, and the need for awareness campaigns to drive sustainable choices.

Research Objectives

The broad objectives of the paper are as follows;

1. To understand the general perception and practice of the use of paper bags.
2. To explore and analyze possible associations between different attributes.

Methodology

This research adopts an empirical survey research method, employing a structured questionnaire to collect primary data pertaining to attitudes, perceptions, and consumer behavior. The study places particular emphasis on the perceptions and attitudes of educated youth. A sample size of 350 respondents was determined through convenience sampling, with a notable majority (over 80%) representing the student category. Ultimately, the research received 317 fully completed and accurate responses from the contacted participants.

The structured questionnaire was designed to elicit insights into various aspects, including but not limited to the participants' attitudes towards eco-friendly bags, their perceptions of sustainable choices, and their actual consumer behavior regarding the use of paper bags. The questions aimed to gauge the level of awareness, preferences, and motivations that influence the respondents' decisions related to sustainable bag usage.

To ensure the reliability and validity of the collected data, the research employed the statistical software IBM-SPSS version 27 for the subsequent analysis. This software facilitated a rigorous and systematic examination of the survey data, allowing for the application of various statistical tests and measures. The statistical analysis aimed to derive meaningful insights, patterns, and correlations within the dataset, contributing to a comprehensive understanding of the factors influencing consumer behavior and attitudes towards eco-friendly bags, particularly among the educated youth demographic.

Analysis

Descriptive univariate analysis

A notable revelation emerged from the survey, indicating a strong interest in environmentally friendly products and sustainable bags among the younger generation. Specifically, 86.2% of respondents aged 21-30 displayed this interest. This finding suggests a significant resonance of the eco-friendly movement among individuals in their twenties and thirties, highlighting the prominence of sustainable practices among the youth.

The survey aimed to uncover the various reasons why individuals use paper bags, revealing intriguing patterns. While 16% of respondents preferred these bags for grocery shopping, a substantial 29.1% indicated their

usage for carrying garments. This underscores the prevalence of paper bags in malls and shops. Furthermore, 34.2% of respondents embraced paper bags for nearly all their purchases, indicating their widespread adoption and integration into daily shopping practices.

A closer examination of respondents' shopping habits unveiled a nuanced approach to the use of paper bags. A significant 39.1% consistently preferred paper bags on every shopping trip, while 22.1% used them selectively based on their specific needs. Interestingly, 20.2% still relied on free plastic bags, highlighting a continued dependence on conventional options.

The majority of respondents (65.1%) demonstrated a proactive stance by choosing to bring their own bags from home, showcasing their heightened commitment to sustainability. However, 20.2% continued to opt for free plastic bags, suggesting a persistent reliance on easily accessible alternatives. Additionally, 14.4% purchased paper bags from shops, revealing a willingness to invest in eco-friendly choices.

Surprisingly, none of the respondents reported using cotton bags, indicating a potential gap in awareness or availability of this alternative. This finding emphasizes the importance of targeted initiatives to promote alternative sustainable choices.

In conclusion, this analysis provides valuable insights into the changing landscape of sustainable bag usage, offering a glimpse into consumer preferences, behaviors, and the ongoing need for awareness campaigns. The prevalence of paper bags among the younger demographic signals a promising shift towards eco-conscious practices, while exploring alternative options such as cotton bags presents an opportunity for future advocacy and education.

The breakdown of respondents' educational backgrounds in Figure 1 provides valuable insights into the demographics of the surveyed population. Notably, a substantial 54.3% of the total respondents identified as post-graduates or professionals, underlining a significant representation of individuals with advanced education and career experience. Additionally, 36.1% of respondents reported having a graduate-level education, reflecting a diverse range of educational backgrounds within the sample. A smaller percentage, 7%, identified as undergraduates, while the remaining respondents had various other educational backgrounds, adding a layer of diversity to the participant pool.

Bivariate statistical analysis

We studied possible association/dependence between major attitudinal preferences of the respondents with demographic factors.

Cross-tabulation for Gender vs. Preferences of using bag

As per the above chi-square table, the association is significant.

Cross-tabulation for Gender vs. Mostly preferred types of bag

In assessing the popularity of various bag types in the modern era, our investigation reveals that consumer preferences are primarily dictated by supply and demand. Notably, after conducting a chi-square test, we found no statistically significant correlation between gender and

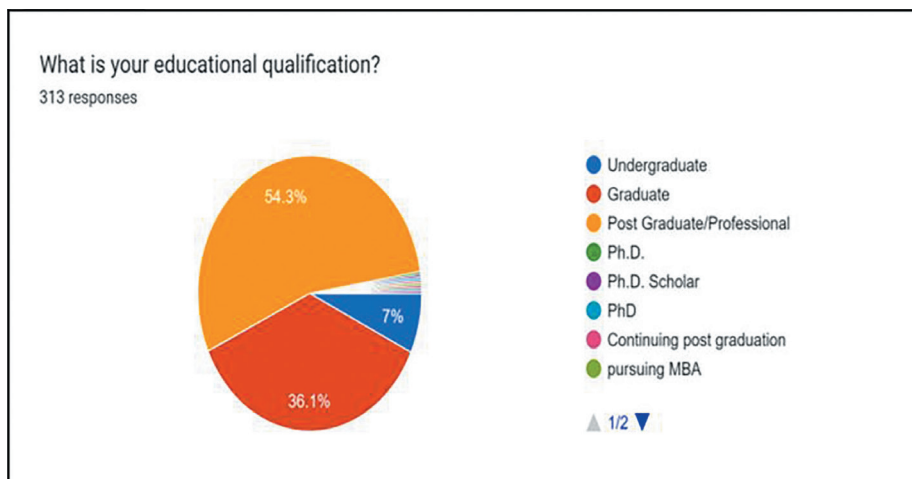


Figure 1. Educational qualification of the respondents.

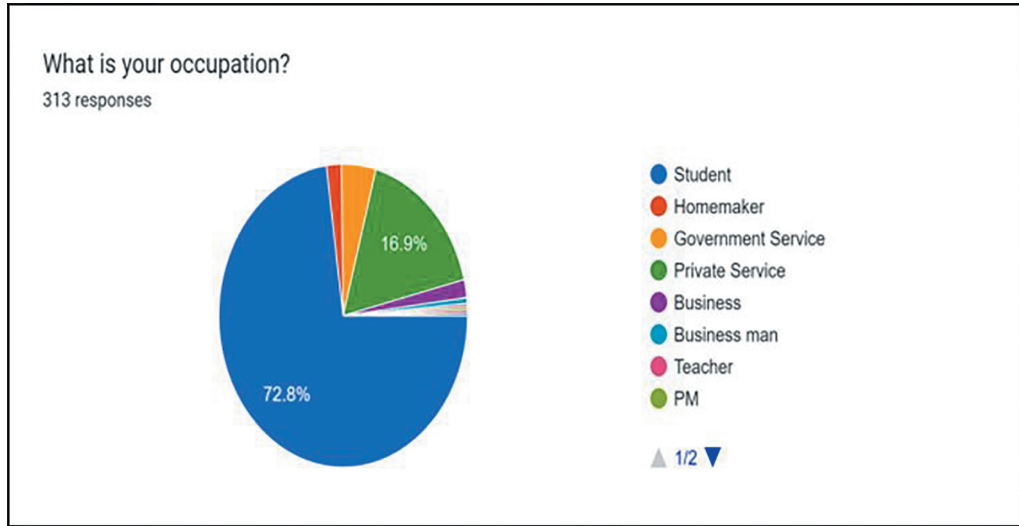


Figure 2. Occupation of the respondents.

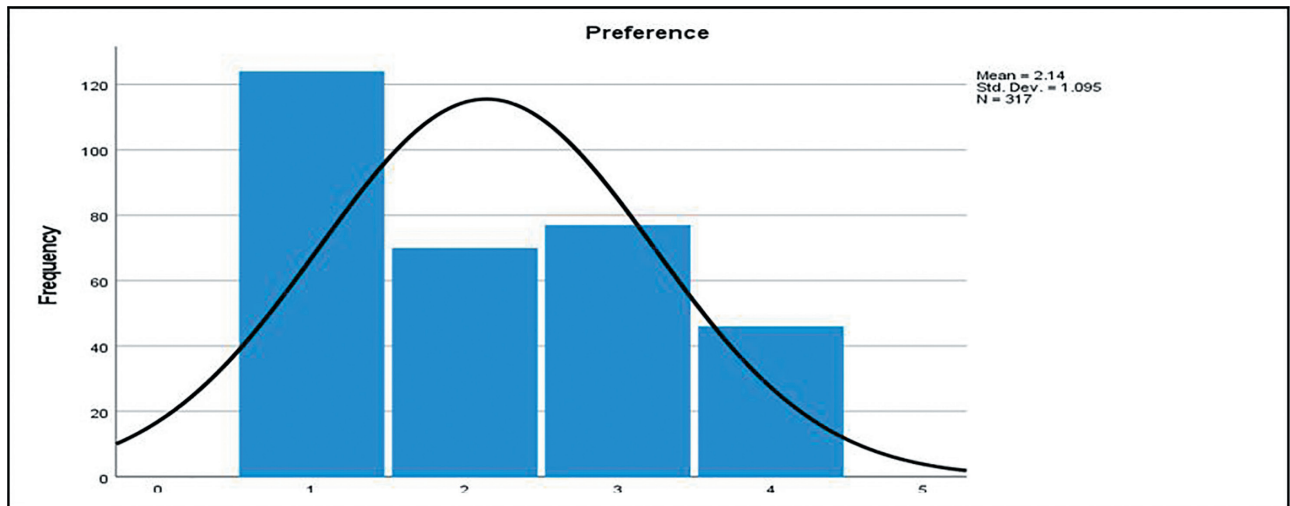


Figure 3. Histogram of the preference of using bags

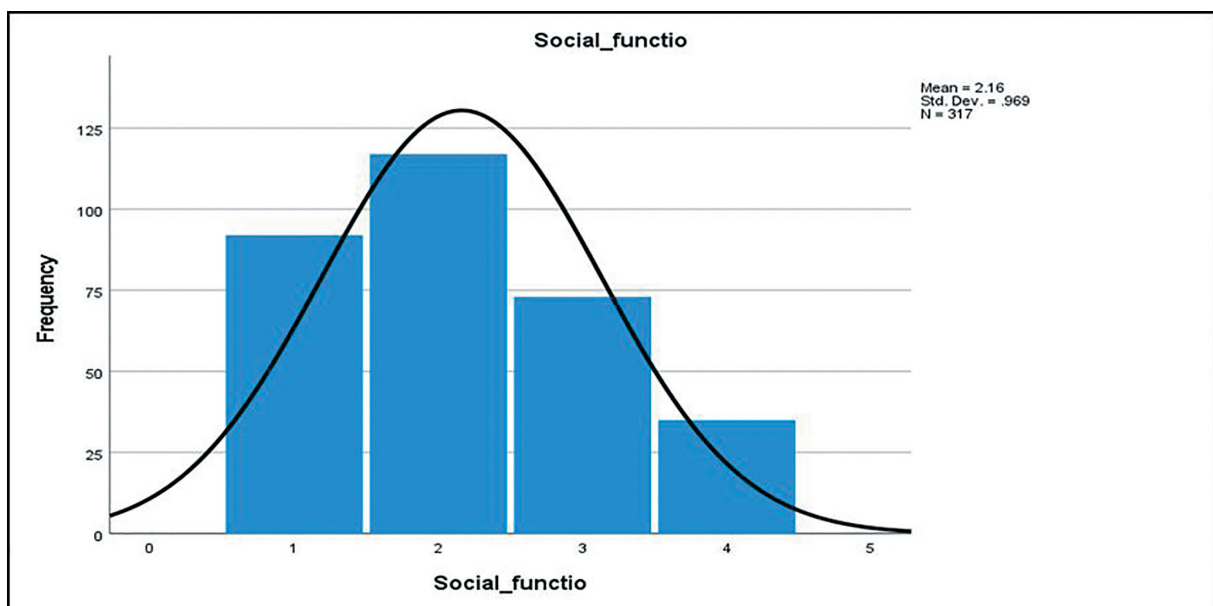


Figure 4. Histogram of the usage of bags in social functions.

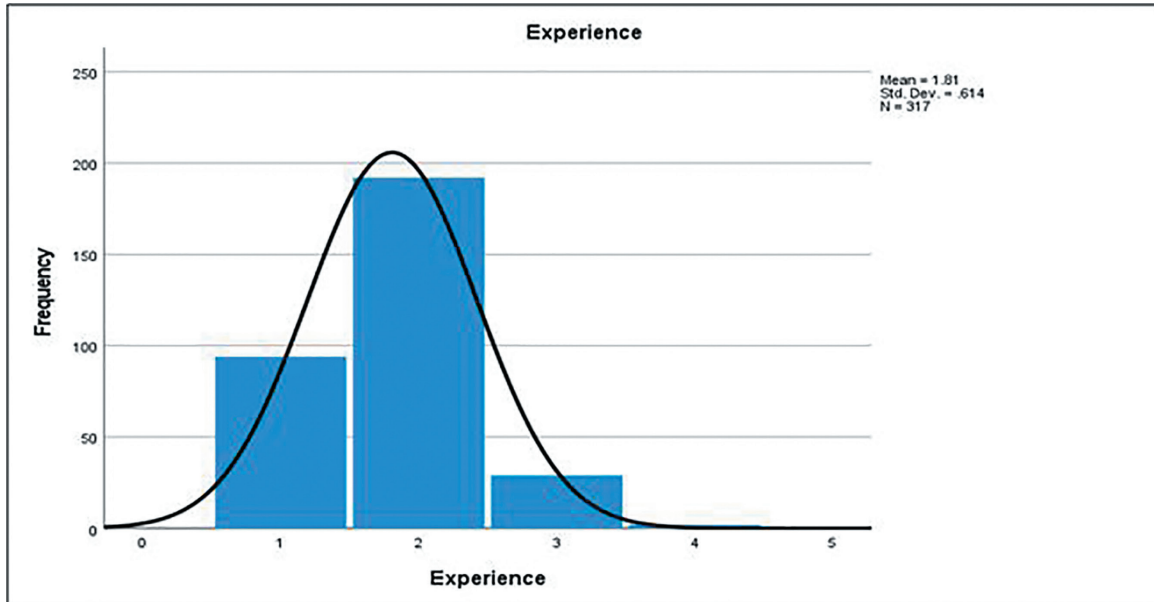


Figure 4. Histogram of the experience on durability of paper bags while carrying purchased items.

Table 1. Chi-Square Tests for Gender vs. Preferences of using bag.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	11.699 ^a	3	.008
Likelihood Ratio	11.736	3	.008
Linear-by-Linear Association	6.874	1	.009
N of Valid Cases	317		

a. 0 cells (0.0%) have expected count less than 5.

the most favored types of bags. This underscores that bag choices transcend gender distinctions, emphasizing the prominence of other influential factors in shaping consumer preferences. This insight underscores the need for a nuanced exploration of the diverse elements steering bag popularity, ensuring a comprehensive understanding beyond gender-related considerations in the dynamic market landscape.

Cross-tabulation for Gender vs. Prefer taking a bag from your home

The table affirms a significant association, emphasizing that the decision to leave a bag at home is linked to the mindset of the respective gender. This underscores the role of psychological factors in influencing this behavior, providing valuable insights into the connection between gender-specific mindsets and bag-related actions.

Table 2. Chi-Square Tests for Gender vs. Prefer taking a bag from your home.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.201 ^a	2	.027
Likelihood Ratio	7.263	2	.026
N of Valid Cases	317		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.72.

Table 3. Chi-Square Tests for Gender vs. Experience on durability of paper bags while carrying purchased items.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.162 ^a	3	.017
Likelihood Ratio	10.745	3	.013
N of Valid Cases	317		

a. 2 cells (25.0%) have expected count less than 5. Minimum expected count is .91.

Cross-tabulation for Gender vs. Experience on durability of paper bags while carrying purchased items

The table confirms a significant association, indicating that the durability of a paper bag is contingent on both the gender of the user and how the bag is utilized. This concise insight highlights the interdependence between user characteristics and bag usage patterns in influencing durability.

Cross-tabulation for Gender vs. Recommendation for using paper bags

Our analysis reveals that advocating for paper bag use is not specifically dependent on gender. The results of the chi-square test indicate a non-significant association between gender and the recommendation for using paper bags. This finding underscores that individuals of any gender can equally advocate for the adoption of paper bags to contribute to environmental betterment.

Cross-tabulation for Gender vs. Improvement required in using reusable bags

The durability of paper bags is intricately linked to their use and purpose, offering a basis for inference or quantification of improvements. Upon conducting a chi-square test, we discerned that there is no statistically significant correlation between gender and the necessity to use reusable bags. This finding underscores that the inclination toward reusable bags is not significantly influenced by gender, emphasizing a more universal consideration for sustainable practices across genders.

Cross-tabulation for Occupation vs. Improvements required in using reusable bags

The diverse array of paper bags is contingent upon their availability, catering to various needs across different locations. Our examination, through the chi-square test, indicates that there is no statistically significant correlation between gender and the necessity to use reusable bags. This finding implies that the decision to opt for reusable bags is not significantly influenced by gender, affirming a broader and gender-neutral consideration for sustainable choices.

Cross-tabulation for Occupation vs. Recommendation for using paper bag

Our analysis affirms that advocating for the use of paper bags is not tied to any specific profession. Consequently, individuals from various occupations can equally guide on optimizing the use of paper bags. The chi-square test results reveal no significant correlation between occupation and the inclination to offer advice on paper bag usage. This underscores the universal nature of promoting environmentally friendly practices, irrespective of professional backgrounds.

Cross-tabulation for Occupation vs. Experience on durability of paper bags while carrying purchased items

Our confidence is substantiated by the finding that refraining from endorsing the use of paper bags is not tied to any specific profession. This implies that individuals from diverse professional backgrounds can equally provide recommendations and suggestions for optimizing paper bag usage. The results of the chi-square test indicate a lack of significant correlation between occupation and the inclination to recommend the use of paper bags. This underscores the inclusive nature of advocating for environmentally conscious practices, independent of one's professional sphere.

Cross-tabulation for Occupation vs. Prefer taking a bag from your home

The chi-square test results indicate a lack of significant association, affirming that leaving a bag at home is contingent on the individual's needs rather than their profession. This finding underscores the personalized nature of the decision, emphasizing that occupation does not play a significant role in determining whether someone chooses to leave a bag at home.

Cross-tabulation for Marital Status vs. Prefer taking a bag from your home

As per the chi-square test, the association is not significant, revealing that leaving a bag at home is contingent on the needs of the individual rather than their marital status. This finding emphasizes the personalized nature of the decision, indicating that whether one chooses to leave a bag at home is not significantly influenced by their marital status.

Cross-tabulation for Marital Status vs. Experience on durability of paper bags while carrying purchased items

Following an analysis using the chi-square test, it is established that there is no significant association between marital status and the longevity of paper bags when carrying goods. This implies that the choice of using paper bags for various purposes, particularly when purchasing different types of goods, is not significantly influenced by marital status. The decision

appears to be more individualized and dependent on other factors.

Cross-tabulation for Marital Status vs. Use of bags in social functions

The chi-square test results indicate a non-significant association. In the context of requirements for various commodities that may not fit in paper bags, perceptions of social functions differ. Regardless of an individual's marital status, paper bags are employed based on specific needs and requirements, underscoring that marital status does not significantly impact the utilization of paper bags for diverse purposes.

Conclusion

This survey research has yielded notable insights. Secondary statistics indicate a significant increase of over 45% in the use of biodegradable bags, a positive trend appreciated in both tier 1 and tier 2 cities of India.

Primary data analysis reveals that a substantial portion of respondents (61.2%) still habitually bring their own bags. Additionally, during social functions, families utilize paper bags for gift-giving, with a noteworthy percentage at 65.9%.

Examining the consumer experience with paper bags, a vast majority (90.3%) report a positive or 'not bad' experience while carrying them.

Bivariate analysis uncovers that bag preference is influenced by both gender and the inclination to bring a bag from home. However, gender does not play a significant role in recommendations for using paper bags, and there is room for improvement in the adoption of reusable bags.

These findings collectively contribute to a nuanced understanding of consumer behaviors, preferences, and experiences related to the usage of paper bags, shedding light on both positive trends and areas for potential enhancement.

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Declaration of Conflicting Interests

The authors declare that they have no competing interests.

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As a passionate human, she is always a leader in the research work and aims to reach greater heights as time encompasses.

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He is an active member and editor of many reputed international academic societies like the Indian Economic

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