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Effectiveness of Banning Plastic Bags in Urban Areas of Bangladesh: A Study on Dhaka City

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Abstract

Plastic bags' availability and frequent usage in urban areas have become significant environmental challenges due to their non-biodegradability impact, especially in densely populated cities like Dhaka. Bangladesh notified a nationwide ban on plastic bags in 2002. However, surprisingly, the increase in the use of plastic bags remains high, which hampers the ban's effectiveness. The study's primary purpose is to evaluate the effectiveness of banning plastic bags in Dhaka City, Bangladesh. This study conducted a mixed research method, including qualitative and quantitative analysis. For qualitative analysis, it utilized Semi-Structured Interviews to understand the overall effectiveness of this policy. For quantitative analysis, it conducted a survey questionnaire among 450 households. The study used the Statistical Package for Social Sciences (SPSS), version 25, to analyze data through descriptive statistics and a chi-square test. The residents of North City Corporation use 17 plastic bags on average in a week. Most of the people are aware of the banning decision through electronic media (18.2%), newspapers (13.6%), and community people (7.6%). The result also shows that plastic bags are commonly used in households, mainly for grocery shopping (33.3%) and food packaging (13.6%). The chi-square test reveals that there is a statistically significant association between educational qualification and people's stance on the prohibition (P- value <0.05) as well and the study also reveals that there is a significant influence of occupation on the frequency of plastic bag use (p-value < 0.05). This study also conducts a correlation between two continuous variables. However, alternatives like jute and cloth bags have

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become increasingly popular, frequently supplied by shops or bought independently by consumers. The challenges to the effectiveness of the ban on plastic bags include the affordability of alternative bags, the inconvenience of carrying them while shopping, and the failure of local businesses to comply with the ban. The study recommends taking measures to increase public awareness and reduce the cost of alternatives. Also, the government should emphasize imposing penalties to ensure implementing the plastic bag banning decision in Dhaka effectively.

Keywords: Ban, Plastic Bag, Urban Area, Dhaka City.

Introduction

Plastic bags became famous after its introduction in 1970's among the dealers and consumers. According to some studies, People use 500 billion plastic bags all over the world (Shawon et al., 2023). Plastic is made up by a harmful chemical named synthetic organic polymers. Nowadays plastics are used for variety purposes including garment manufacturing, medicinal applications, food preservation and packaging, electrical device suppliers, construction, and so on. People are producing and disposing of a large amount of plastic which is creating environment, water and soil pollution. Plastic bags are disposed of openly in any site, such as a roadside, park, or land, poses a risk to human health and the environment by causing soil pollution. Using plastic has emerged as a major environmental challenge for Bangladesh also. Dhaka, the Capital of Bangladesh, is facing difficulties due to the excessive use of plastic and facing challenges like ecological and infrastructure problems, clogged drainage during flood, loss of river and aquatic animals as well as affecting human health and biodiversity. European Union nations as well as the majority of Asian and African countries implemented a plastic bag tax policy to address this issue. Bangladesh, India, Taiwan and China are the initiator countries in Asia Continent to promote the banning policy of plastic. (Muposhi et al., 2021). Despite the regulatory system of using plastic, the use of plastic increased vigorously and now it has become an alarming situation for the country especially the urban areas like Dhaka city. It also raises concern about the effectiveness of banning policy and authorization of government initiative. Dhaka city produces a significant amount of plastic waste from daily household activists to industrial wastes. Plastic bag is a non-biodegradable chemicals which takes 100 years to decompose into the soil and it becomes an environment hazard and also the reason behind soil pollution. (Amir-ud-Din et al., 2024). Besides, cheapness, light weight, and

being easily accessible, are also the reasons for using plastic bags (Shawon et al., 2023). Dhaka North City Corporation area consists of 54 wards which covers half of Dhaka with a huge number of people living here. Now, the new interim government of Bangladesh takes initiatives again to ban the plastic use both for the retails and consumer for using on daily purpose. They are taking measures and strict prohibition for retailers and super shops not to provide plastic for carrying goods and also raising awareness among the general public to stop reusing plastic. Moreover, they are improving the waste management system for recycling and disposing of the plastic properly.

Literature Review

Plastic bags are being used frequently throughout the world because of its availability and as it is easy to carry for being light weighted. Though plastics has adverse environmental and health impacts, still it is being used based on its widespread popularity. Waste management of plastic usage has become a major environmental and social issue worldwide, particularly in Bangladesh (Abedin, 2024). The global mismanagement rate is 22%, whereas the recycling rate for plastic waste is 9%, which is lower. Six hundred forty-six metric tons of plastic waste are collected daily in Bangladesh, however only 10% of that material is recycled, and the remaining 37.2% need to be properly disposed of (Abedin, 2024). Bangladesh implemented a statewide ban on plastic bags in 2002 as a defensive move to protect the environment and ecosystems. Bangladesh was the first country to prohibit plastic bags in 2002, highlighting considerable environmental degradation and drainage obstructions caused by polythene waste (Hossain,2012). According to Sinha (2014), plastic pollution in metropolitan and urban areas causes waterlogging and affects natural water flow. Rahman and Alam (2016) contend that, despite the ban, ineffective implementation and a lack of awareness among the people have hampered its success. Uddin et al. (2018) discovered that plastic trash substantially pollutes soil and aquatic environments, endangering biodiversity. Furthermore, Islam and Mia (2020) emphasized the necessity of long-term alternatives and stronger policy implementation in reducing plastic dependency in Bangladesh. The authority's ability to carry out the ban is insignificant, which also increases the possibility of the plastic bag ban (Ifthear Hossen Shawon, 2022). Retailers agree that the absence of an alternative is the reason for violating the plastic bag banning prohibition (Ifthear Hossen Shawon, 2022). According to the logistic regression results,

the frequency of raids by public authorities, the lack of availability of alternative products, a lack of knowledge about the adverse impact of plastic bags on ecosystems and the environment, and a business license all have a significant influence on retailers' compliance with the enforcement of banning plastic bags, whereas the proximity of the shop to the main road allows for noncompliance (Ifthear Hossen Shawon, 2022). The authors advocate for the easy availability of alternatives, as well as increased public awareness of the need of environmental conservation and ecosystem restoration through the successful implementation of ban.

At the same time, several other scholars emphasized the importance of strengthening government laws and roles to enhance the effectiveness of the prohibition. In our county, the majority of old plastic products are thrown away after their first use, and due to poor management, they end up on roads, in drains, canals, rivers, and in roadside open dumps. A research undertaken by garbage Concern, a Bangladeshi social business venture that promotes resource recovery from garbage, concluded that approximately. Principal Types of Plastic Materials Found in Discarded Waste Plastic Types Use HDPE trash bags, milk bottles, shopping bags. LDPE Bags, food wrap, and plastic films PVC Bottles, packing, containers, plumbing and sewage lines, floor and furniture covers. PET beverage bottles and containers (Hossain1, Md, Chowdhury1, & Mohonta2, 2021). PS Hot beverage cups, thermally insulated take-home boxes, food containers, such as trays for holding meat and eggs, and insulating materials. PP Yogurt containers, diapers, straws, wrapping paper, butter tubs, and special bags. In Bangladesh, 0.8 million tons of plastic garbage are generated per year, with 36% recycled, 39% landfilled, and the other 25% going uncontrolled and ending up in the marine environment. (Hossain1, Md, Chowdhury1, & Mohonta2, 2021). Although Bangladesh's ban on plastic bags was a groundbreaking environmental initiative, difficulties with enforcement and financial considerations have limited its efficacy. Long-term success depends on bolstering legal frameworks, raising public understanding, and encouraging sustainable alternatives. To reduce plastic pollution in Bangladesh, further investigation into creative fixes and efficient policy implementation are required.

Rahman et al. (2025) identify that harmful substances, such as plastic, contribute to plastic pollution, with the main causes including mismanagement of waste, overpopulation, poor disposal habits, and

excessive consumption of plastic, which affects not only biodiversity but also the health of human beings. People have a positive reaction to minimizing plastic pollution by reusing plastic bags, taking responsibility through conscious shopping, disposing of plastics correctly, and suggesting several programs, such as creating awareness and providing rewards and monetary incentives for collecting or returning plastics. Some have negative attitudes as there remains some limitations of affordable and available eco-friendly alternatives, the lack of social and community pressure as well as enforced mechanisms. To reduce the use of plastics and plastic pollution, policymakers should take certain measures, such as emphasizing awareness programs, public education, and engaging educational institutions, establishing reward-based projects, and strengthening recycling and waste management programs.

According to Banu (2019), mankind produces over 400 million tons of plastic worldwide, of which 79% are disposed of in nature, and "only 12% are burned, as well as 9% are reprocessed." Because of globalization, plastic production increases which is used by various institutions and the percentages of the use are "36% in the packaging industry, 16% in construction, 14% in textiles, 10% in consumer and institutional products, 7% in transport industries, 4% in electronic industries and rest by other institutions." As a result of the usage of plastic, not only human suffers from various diseases such as "cardiovascular disease, type 2 diabetes, carcinomas in adults and liver abnormalities" but also other animals are affected like reproductive issues, disability in movement and so on. To decrease the use of plastic, various countries have taken action. Bangladesh was the first country to ban the sale and manufacture of plastic bags. Among other nations, Ireland adopted tax imposition strategy which was a great success in banning plastic bag, the Plastic Bag ban policy is taken by South Africa which had a poor response as there needed other policies to support the ban, lack of enforcement and poor waste management system was the main cause of the failure of Plastic Bag Ban in India, fines, continuous monitoring, enforcement system cause a huge success in Tanzania and Kenya. Thus, illegal production, mismanagement of waste, poor enforcement, individual perception, and pricing are the reasons for the failure of banning plastic bags whereas tax imposition, fines, proper enforcement, and innovative measures are the reasons for the success.

According to Sadia Akter (2024),Plastic has become a vital commodity due to the widespread use but poor management in some areas and lack of awareness make the use of plastic a hazard. Poor management of plastic creates environmental concerns both for marine and human life. The main reason behind poor management is lack of facilities, slow progress in infrastructure development and small budget. 1 million plastic bottles are brought in one minute around the world. Even one survey found that the plastic bottles sold in 2018 would be taller than the Burj Khalifa. Every year we Produce 100 tons of plastic which creates an unhygienic atmosphere and helps to breed insects and mosquitos. Our marine life is also in danger because every year we dump eight million tons of plastic into the ocean which doesn't vanish from the water. Besides, the constitution of Bangladesh doesn't have any specific law related to the environment but in India, Malaysia and other countries have specific laws for protecting the environment. BELA and BLAST Write about people suffering due to environment pollution and Water logging and various water wastes, leading to inhuman life for the residents. Government taking various initiatives and also collaborating with NGOs and other Organization to improve waste management.

According to (Proshad et al., 2017), plastic use has become widespread due to its affordability, versatility and durability. But it is also putting pressure on human health and the environment. The chemicals used while producing the plastic bags are dangerous for children and pregnant women causing long term health consequences and fetal diseases. Plastic creates air, soil and water pollution and imbalances the ecosystems. The people of Bangladesh have a lack of awareness about these toxic risks. The government of Bangladesh has not taken necessary steps for the proper implementation. Government had taken the plastic use ban law in 2002 but due to public ignorance and poor implementation process, the law didn't enact properly. Its wide use makes it flexible and also dangerous because it has the ability to enter into the human body via food, air, dust and medical services.

Methodology

Data for this study were gathered through a structured questionnaire following a non-probability purposive sampling procedure, picking 450 respondents from the Dhaka North City Corporation (DNCC) under Dhaka City. The study covers the areas- Mirpur, Pallabi, Uttara, Mohammadpur, Agargaon, Dhanmondi, Banani under the Dhaka North City Corporation.

Plastic pollution is worse in Dhaka than in other cities. The annual per capita plastic use in the capital, Dhaka, is 22.25 kg, more than three times the national average for urban areas. Every day, 646 tons of plastic waste are collected in Dhaka, accounting for 10% of Bangladesh's total waste production. In Dhaka, just 37.2% of plastic waste is recycled. (World Bank, 2021).

The mixed-method research follows a cross-sectional study to examine the effectiveness of banning plastic bags in urban areas in Bangladesh. The quantitative research has been accompanied by an evaluation and exploration of people's awareness about the ban on plastic bags in Bangladesh, focusing on exploring the existing scenario of the effectiveness of the ban and analyzing to what extent the government needs to play its role effectively. The qualitative study has been incorporated to identify the challenges and prospects associated with the effectiveness of the plastic banning decision in Bangladesh and present recommendations for the existing scenario.

The mixed-method study employed a survey questionnaire that included both closed-ended and open-ended questions. Non-probability purposive sampling involves targeting a specific group of individuals who use plastic bags on a daily basis. This sampling method enabled the collection of data from individuals. The random selection of 450 households demonstrated the feasibility of obtaining a sufficient sample size. The study also includes eight semi-structured interviews with individuals from different households

Data Analysis Techniques

The study applied SPSS (Statistical Software for Social Sciences), version 25, to analyze the data. Based on the Kolmogorov-Smirnov and Shapiro-Wilk tests ($p < 0.05$), the data were not normally distributed; therefore, non-parametric statistical tests were applied. To explore relationships among the variables in the data, the study employed the Chi-square, Spearman's Correlation Coefficient. The reliability of the internal consistency of the constructs has been tested using Cronbach's Alpha. The study also includes Exploratory Factor Analysis (EFA) using principal component analysis and varimax rotation. Data were calculated using a 95% confidence level, which means that the estimated findings should fall within the calculated confidence intervals. The study also employed a 5% level of significance (0.05) to minimize the likelihood of making an error.

Findings

Socio-Demographic Profile of Respondents

Table 1 presents the demographic characteristics of the individuals who participated in the survey (n = 450). According to the demographic characteristics of individual who participated in the survey, the majority of respondents (76.5%) fall within the 21-30 age group, followed by 19.5% in the 10-20 age group. A small percentage (4) belongs to the 31-40 category. In total, 37.5% (n = 169) of the participants were male, and 62.3% (n = 281) were female. Among respondents, a significant portion (74.4%) hold an honors degree, followed by HSC graduates (14%), master's degree holders (10.2%), and SSC graduates (1.3%). In total, 87.4% of the respondents were students, 7.8%, 2.2% were entrepreneurs, and 1.7% were unemployed. The number of family member group distribution shows that the member range of (1-4) include the majority (53.4%) of the respondents, followed by (5-8) of member range with (44.6%), (9-12) of member range with (1.1%) and 0.9% member belongs to the (13-16) member range group.

Table 1: Demographic Characteristics of the Participants

Variables	Category	Frequency	Percentage
Age	10-20	88	19.5
	21-30	345	76.5
	31-40	18	4
Gender	Male	169	62.3
	Female	281	37.5
Educational qualification	SSC	6	1.3
	HSC	63	14.0
	Honors	335	74.4
	Masters	46	10.2
Occupation	Employee	35	7.8
	Entrepreneur	7	1.7
	Housewife	10	2.2
	Student	394	87.4
	Unemployed	4	.9
Family member	1-4	241	53.4
	5-8	201	44.6
	9-12	5	1.1
	13-16	3	0.9

Background Information of Respondent about Using Plastic Bags in Household:

Table 2 represents the knowledge about the banning decision, usage, and awareness among the respondents. The study revealed that most participants (93.3%) have sufficient knowledge about the banning decisions. However, plastic bags were still used in most of the respondents' houses (84.7%). The frequency of use of plastic bags was as follows: always (44.9%), often (31.6%), sometimes (19.8%), rarely (3.6%), and never (0.2%). Additionally, 54.3% of respondents reported reusing plastic bags. Regarding awareness, 32.2% of the total respondents' family members were slightly aware, and another 32.2% were moderately aware, while 20.6% were not aware at all, 13.1% were very aware, and 1.8% were extremely aware.

Table 2: Current Scenario of Implementation of Banning Plastic Bags

	Frequency	**Percentage**
Knowledge about the banning decision		
Yes	420	93.3
No	30	6.7
Usage of plastic bags in the household		
Yes	382	84.7
No	68	15.3
Reusing plastic bags		
Yes	245	54.3
No	205	45.7
Awareness among the family's other members		
Not aware at all	93	20.6
Slightly aware	145	32.2
Moderately aware	145	32.2
Very aware	59	13.1
Extremely aware	8	1.8
Frequency of use		
Always	202	44.9
Often	142	31.6
Sometimes	89	19.8
Rarely	16	3.6
Never	1	.2

Analysis of Spearman's Correlation Coefficient:

Table 3 represents the Spearman's Correlation between the number of family members and the average number of plastic bags used per week among respondents. According to the value (-0.073), it can be said that there is a negative correlation between the two variables. The weekly usage of plastic bags doesn't depend on the number of family members. Instead, it may rely on their habit or need related to the regular waste collection, food packaging, and so on

Table 3: Spearman's Correlation between the number of family members and the average number of plastic bags used per week

Hypothesis	Value of R
H0: There is no association between the number of family members and the weekly use of plastic bags in the household. H1: There is an association between the number of family members and the weekly use of plastic bags in the household.	-0.073

Table 4 indicates whether a relationship exists between two categorical variables or not. Through the Chi-square test, the study finds an association between the frequency of usages of plastic bag usage and the awareness level among respondents' other family members.

Table 4: The relationship between two categorical variables (Chi-Square)

Hypothesis	Value	Decision
H0: There is no association between the frequency of usage of plastic bags and the awareness level among respondents' other family members. H1: There is an association between the frequency of usage of plastic bags and the awareness level among respondents' other family members.	.032**	Null hypothesis rejected
H0: There is no association between the usage of plastic bags and awareness level among respondents' other family members. H1: There is an association between the usage of plastic bags and the awareness level among respondents' other family members.	.000**	Null hypothesis rejected

H0: There is no relationship between cultural habits and usage of regular plastic bags in households. H1: Has a relationship between cultural habits and usage of regular plastic bags in households.	.052*	Null hypothesis accepted
H0: There is no relationship between the Government's effort in enforcing the ban and the adherence of local businessmen. H1: Has a relationship between the Government's effort in enforcing the ban and the adherence of local businessmen.	.000**	Null hypothesis rejected

*N.B P**<0.05*

Table 4 represents the relationship between two categorical variables. Here. The p-value (.032) of the relationship between the frequency of usage of plastic bags and awareness level among respondents' other family members indicates that the null hypothesis is rejected. It suggests an association between the frequency of plastic bag usage and the awareness level among respondents' other family members. Then, the P-value (.000) of the relationship between the use of plastic bags and the awareness level among respondents' other family members indicates that the null hypothesis is rejected. That means there is an association between the usage of plastic bags and the awareness level among respondents' other family members. A strong relationship has also been revealed between the government's efforts in enforcing the ban and the adherence of local businessmen to the prohibition (P = .000). On the other hand, no relationship was found between cultural habits and the use of regular plastic bags in households (P = .052).

Factors affecting the effectiveness of banning Plastic bags

Reliability Test

Reliability is the measure of internal consistency of the constructs in the study. A construct is reliable if the Alpha (α) value is more significant than .60. Construct reliability has been assessed in this study using Cronbach's Alpha. The results revealed that the waste management practices, as measured by eleven items (α = .689), were reliable.

Exploratory factor analysis (EFA)

Factor Analysis (EFA)An EFA has been performed using principal component analysis and varimax rotation. The minimization factor loading criteria have been set to 0.50. The scale's commonality, which indicates the amount of variance in each dimension, has also been assessed to ensure

acceptable Exploratory levels of explanation. The results show that all commonalities are over 0.50.

Table 5: Exploratory factor analysis (EFA)

Item	Component 1	Component 2	Component 3	Component 4
Proper waste management	.824			
Public Awareness campaign	.796			
Lack of penalties	.785			
Strict enforcement	.678			
The availability of affordable alternative	.589			
Adherence to the plastic bag		.804		
The government's effort		790		
Lack of alternative			.612	
Awareness among family members				.858
Cultural Habits				.514

The study included eleven items relating to waste management practices and environmental support for factor analysis using Principal Component Analysis (PCA) with Varimax Rotation. The value of the Kaiser-Meyer-Olkin measure of adequacy is 0.798, which is above the recommended value of .60. Bartlett's test of Sphericity was significant, x2 (n = 450) = 1211.780, as the p-value is determined (.000 < .05). The Eigenvalue > 1 determines that the analysis is fit for four factors explaining a total of 64.824% of the variance of the data. Factor 1 is labeled "waste management efficiency" due to high loadings in the following items: proper waste management, public awareness campaigns, lack of penalties, strict enforcement, and the availability of affordable alternatives. Factor 1 explains 27.686% of the variation after rotation. Factor 2 is labeled government initiatives due to high loadings in the following items: adherence to plastic bag regulations and government efforts. Factor 2 explains 13.860% of the variation after rotation. Factor 3 is labeled "Preference for alternatives due to

its high loading on preference for alternative options. Factor 3 explains 13.011% of the variation after rotation. Factor 4 is labeled social and cultural influence due to high loadings in the following items: awareness among family members and cultural habits. Factor 4 explains 10.267% of the variation after rotation.

The qualitative analysis of the study further finds that the effectiveness of the plastic banning decision depends on proper waste management methods, public awareness, penalties, and the government's strict enforcement. Additionally, awareness about environmental protection can also contribute to the overall effectiveness of the ban in both urban and rural areas. Respondents revealed that the lack of Government intervention and coordination is responsible for the ineffectiveness of the ban. Interviewees stated that before alternative employment can be arranged for plastic factory workers, the decision to ban plastic bags should be fully implemented. Primarily through self-awareness and human health concerns, the general public will help decide to ban plastic bags more effective.

Discussion

On the one hand, broad access to plastic products has made humans' lives simpler and smarter, but on the other, it has led to long-term environmental contamination due to the formation of excessive garbage resulting from excessive production and use. Because the most commonly used plastics are non-biodegradable and disposable, when left unchecked, they accumulate in landfills or the natural environment, contaminating various environmental compartments, including air, soil, and water (Hossain et al., 2021). According to World Bank data from 2018, 234,000 people perished as a result of environmental pollution in Bangladesh, with 80,000 living in cities. Because of their low solubility and resistance to microbial breakdown, the heavy metals produced during plastic combustion act as soil contaminants, endangering human metabolism. Bangladesh was the first country to pass anti-plastic bag laws. ESDO is the first organization in Bangladesh to ban plastic bags (Hossain et al., 2021). Plastic bags were banned in Bangladesh in 2002. Surprisingly, many respondents were unaware of the restriction. Their awareness gap contributes to the use of plastic bags in communities. Most consumers do not protest when shops transfer goods through plastic bags, indicating consumer unawareness and, to some extent, a lack of responsibility for following the ban (Ifthear Hossen Shawon, 2022). This

study emphasizes that one of the vital reasons for the usage of plastic bags is their availability and the comparatively high cost of the alternative bags. 25.7% of respondents are highly supportive of the ban decision, while only 4.4% are opposed to it. It indicates that only creating awareness is not enough for the effective implementation of banning plastic bags. The cost of alternative bags should be reduced so that the general public can use them without facing any hassles or challenges. Alternative employment opportunities for plastic workers is another major issue contributing to the ineffectiveness of the ban, which is why alternative jobs should be allocated to them to maintain their income. 28.6% of the respondents think that cultural habits and resistance to change are significant barriers to the success of the ban.

This study also finds that, despite having sufficient knowledge about the ban decision, most respondents continued to use plastic bags in their homes. There is an association between the frequency of usage of plastic bags and the awareness level among respondents' other family members. On the other hand, there is no relationship between cultural habits and the use of regular plastic bags in households.

Proper waste management, public awareness campaign, lack of penalties, strict enforcement and availability of affordable alternatives may increase the effectiveness level of implementation of banning plastic bag. Government penalties play a significant role in the success of the banning decision, 27.7% of the respondents strongly agree that the lack of penalties for using plastic bags decreases the effectiveness of the ban. Government must take strict initiatives for the law’s enforcement and arrange awareness campaigns and workshops for the general people to let them know about plastic’s adverse impact on our environment and health.

Conclusion and Recommendations

This study aims to understand the effectiveness of banning plastic use, primarily in the Dhaka North City Corporation, by analyzing behavioral factors, people's awareness, and the government's voluntary efforts. The ban on plastic use is a critical environmental policy implemented by our new interim government to reduce plastic pollution, improve waste management, save the Dead River, minimize public hassle during floods, clear drainage problems, and balance the ecosystem to ensure a better quality of life for the

people of the country. After two decades of the ban policy, its effectiveness became questionable. Lack of public awareness, insufficient infrastructure, the absence of alternatives, and inadequate enforcement were the primary obstacles to implementing the plastic ban policy in 2002. The retail community is highly dependent on plastic despite the ban policy for its affordability and advantages. Alternatives of plastic bags are jute and cloth bags but it is costly and low accessibility. Jute bags and paper bags are eco-friendly substitutes, but they are not widely adopted among people, particularly those with lower incomes, because they cannot afford the costly alternatives. Rapid urbanization and the expansion of industrial areas are also contributing factors to the unsuccessful implementation of the policy. Weak recycling mechanisms and an inadequate waste management system also pose a barrier to effective enforcement.

The study recommends that the government should take alternative methods, such as using jute or paper bags, to enhance the effectiveness of the plastic bag ban. Jute cultivation and the growth of the jute industry are also needed for making alternative bags. A cost-free or reduced price, the good quality of alternative bags, or strong and easy-to-handle alternative bags while carrying juicy items can be effective in the ban. Moreover, public awareness campaigns that improve the mindset about environmental pollution can be a way to enhance the effectiveness of the ban. "We see, we do," and it's Bangladesh; So, the ads or promotions on social media, TV, or websites related to the ban and eco-friendly environment can be another way. Besides the government should take necessary steps to provide jobs for the employees who are working in plastic factories before banning the plastic industry. After doing these initiatives the government should focus on strict rules implications. The ban on plastic use is a step towards environmental sustainability. So, not only government initiatives but also NGO’s, industries and corporate sectors, consumers, retailers, social communities, environmental agencies can come forward to ensure a successful and a long-term sustainable implementation of the policy to reduce plastic bags in Dhaka city.

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