

A Descriptive Study to Assess the Knowledge and Attitude Regarding Harmful Effects of Plastic Bag Usage Among Community People at Selected Areas of Supane, Karad, District Satara, Maharashtra

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ABSTRACT

The study evaluated the knowledge, attitudes and common practices of the ill effects of the use of plastic bags on community members at the selected regions of Supane, Karad, Maharashtra. The research design selected was descriptive and structured questionnaires were used on 200 respondents and descriptive and inferential statistics were used to analyze the data in order to determine differences in awareness and behaviour. Results showed a moderate level of knowledge on environmental and health risks of plastic bags, but no significant difference in behavioural practice proved that respondents were dependent on the habit and had no sustainable options. The findings have also revealed that the demographic variables do not have much power on the level of knowledge and attitudes, which indicates that awareness is rather homogeneous in groups. The study concluded that the awareness is not enough to bring behavioural change unless it is reinforced by policy, access to biodegradable alternatives, and educational motivations of the community level. The study was confined to only one geographical area and also based on self-reported responses, thus on generalizability.

Keywords: Plastic bag usage, Community awareness, Environmental hazards, Sustainable practices, Behavioural change.

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1. Introduction

Plastic is an artificial substance that is composed of diverse Organic Polymers like polyethylene, PVC, nylon, etc. which may be molded into form when in a soft state and then hardened or slightly supple into a stiff or semi-malleable state. Majorities of the plastics are synthetics; they are not found in nature. Polymers represent most of the substances that are referred to as plastic (Wang and Li 2021). Polymers are chains of atoms that are bound together. The materials incorporated in plastics are made of several other materials like Carbon, Hydrogen, Oxygen, Nitrogen, Chlorine and Sulfur. Plastic is a Non-Biodegradable product.

Plastic bags came in 1970s and were becoming more and more popular among consumers and retailers. Most of these bags are disposed as waste and mostly after use. People also believe that once the plastic bags enter the environment, they can last as long as 1000 years without the effect of sunlight

and/or micro-organisms to break them down. The environment suffers due to the toxic pollutants that are found in plastic and lead to land, water, and air pollution (Ahsan et al., 2020). Plastic leaches toxic chemicals that are present in our blood and tissue almost all of us. They have been associated with cancers, birth defects, impaired immunity, endocrine disruption, and other ailments due to exposure to them. The use of plastics leads to different human health problems such as irritation in the eye, vision failure, breathing difficulties, respiratory problems, liver dysfunction, cancers, skin disorders, lung problems, headache, dizziness, birth defects, reproductive, cardiovascular, genotoxic, and gastrointestinal problems (Adeyanju et al., 2021).

The knowledge and attitude of harmful effects of plastic bag use among people in selected regions of Supane, Karad, District Satara, Maharashtra is very much relevant in the current scenario of increasing environmental degradation and

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health effects of people. Plastic bags are cheap, convenient, and readily available, but still they are still used popularly despite the awareness campaigns that have been performed over a long period of time showing the negative effects of using them (Singh et al., 2021). The level of awareness of the community is critical in defining their behaviour especially in rural and semi urban regions where the environmental policies may not be very vigorously enforced. Knowledge assessment in such an environment is of utmost importance because it assists in generating awareness gaps that exist (Gosavi et al., 2025). The knowledge of what the population is aware about the non-biodegradable properties of plastic, its accumulation in the ecosystem, and the health risks may help to underpin the effectiveness of educational interventions and influence the strategies of policy at the local level (Upendra et al., 2020).

It is crucial to determine the position of people living in a certain community since knowledge is not always translated into environmental responsible actions. The rural populations might have the simple knowledge of environmental pollution and be behaviorally resistant either as a convenience-seeking behaviour or a lack of viable alternatives (Pandirajan et al., 2020). Socio-cultural norms, perceived levels of risk, affordability of the medication, and government action determine attitudes. Thus, the consideration of attitudes gives better understanding regarding the intention of the people to decrease plastic use, to use environmentally-friendly material, to separate waste, or to approve of control (Waghmare et al., 2021). Attitudinal information is also used to show the readiness of the community to be involved in such projects like clean-up drives, enforcement of bans or community awareness. This factor is essential since without the community cooperation, the system of policymaking and waste-management will fail (Naik Mayur et al., 2021).

The use of plastic bags in some parts of Maharashtra like semi-urban and rural communities in such districts as Satara puts the environment under a severe burden of non-degradable waste (Singh et al., 2021). These are polyethylene-based bags that can only decompose in centuries to be broken into microplastics which penetrate soil, rivers and ground water channels polluting the farming lands and drinking water sources vital to the local communities. In some places, such as Karad and Supane, the drainage systems are blocked with bags left lying and increase flooding during monsoons, creating breeding

grounds of mosquitoes and enhancing the spread of such diseases as dengue and malaria among the local residents (Shinde et al., 2020).

Plastic bags has health impacts on both humans and animals with stray cattle and wildlife in Maharashtra often consuming the plastic bags as food, and dying of intestinal obstructions, suffocation, and low livestock productivity placing a strain on farming families in terms of financial costs (Fashion 2020). Micro plastics and other toxins drain into the food chain becoming dangers of endocrine disruption, respiratory conditions, and carcinogenic exposures to locals who are dependent on local food and milk. The problem is aggravated by the fact that colored plastic bags, which are popular in markets, emit toxic dyes and chemicals, and these dangers can be even more dangerous in those locations that do not practice effective separation of waste (Sampathkumar 2021).

These effects are enhanced by socio-economic vulnerabilities in the community settings of Maharashtra, where the lack of infrastructure in waste management, such as the use of poor waste management facilities in areas such as Satara, leads to open dumping and burning of plastics, which release dioxins and particulate matter that subsequently cause air pollution and chronic respiratory diseases (Correspondent et al., 2019). The magnitude of the plastic waste production in the state is indicated by the daily production of more than 1,200 tons of plastic waste, most of which are single-use bags that flood landfills and informal recycling industries that employ marginalized workers who are exposed to toxic emissions. This continues poverty and health inequity cycles especially those that involve women and children who participate in informal waste treatment (Khairnar et al., 2019).

The ecological disturbance is also seen in Maharashtra biodiversity hotspots, where the plastic infiltration of the rivers such as the Krishna negatively affects aquatic life, reduces fish populations that are essential to local food supplies, and causes the soil to lose its fertility due to long-term pollutants (Almack et al., 2024). Non-biodegradable rubbish has increased in hill stations and sanctuaries around Karad, posing risks to the economies of the tourism-dependent regions and already vulnerable ecosystems that are already under strain in relation to climate variability. Since 2018, bans have been enforced, such as phased bans on bags below 50 microns, which the government is recognized, but gaps in enforcement allow a widespread use, with illegal markets and no alternative (Sampathkumar 2021).

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The purpose of the knowledge and attitude of the ill-effects of plastic bags is the ability to make a behavior change and advance sustainable ecological behaviors. As the world increasingly aims at minimizing non-biodegradable waste, it is the duty of the local communities to engage in responsible consumption. Through measuring knowledge and attitude among the chosen population, the studies are able to give evidence based suggestions like encouraging the use of reusable bags, increasing access to biodegradable material as well as carrying out regular awareness campaigns. The study also urges government authorities in the area to be more effective in waste-management systems and implement regulatory mechanisms. Accordingly, the study is not only an academic contribution but also promotes the sustainable community growth through the enhancement of environmental awareness, reduction of waste management, and further enhancement of the population health.

2. Literature review

The inconsistency in the level of knowledge and attitude towards the harmful consequences of single-use plastics in spite of the growing number of interventions on the problem across the whole world. As pointed out by Herdiansyah et al. (2022), environmental awareness is still low and especially in urban communities where the consumption of plastic is rather significant. Their results highlight that behavioural issues were rooted in poor knowledge and unwillingness to cut down on the usage, recycle or use alternatives. On the same note, Hamza and Mahmoud (2023) noted that despite positive attitudes to the negative impact of the plastics among most of the respondents, the knowledge and practice levels were at a low level. Their work revealed that there was some fractured awareness based on educational attainment which implied that the knowledge on toxicity, exposure risks, or environmental impact is not equally distributed. This skewed commendation of the knowledge turns out to be a hindrance towards behavioural change and it can be concluded that awareness programs and educational inclusion are needed to provoke environmentally friendly behaviours.

Additional the environmental attitudes were conditioned by contextual, socio-economic, and even policy-level factors but not knowledge. As an example, Alteneiji et al. (2024) found statistically significant correlations between knowledge, attitudes and sustainable practices with the finding that greater awareness positively forecasted responsible usage

behaviours. Similarly, awareness of environmental responsibility has direct effects in influencing behavioural intentions of reducing plastic bags which was shown by Coco Chin et al. (2023) and Le et al. (2024) especially in areas where the environmental harm was manifested as seen in coastal communities. Conversely, research evidence conducted on youth and mixed socio-demographic populations showed that the intention to switch to alternatives even at moderate levels of knowledge is supported by the presence of policy incentives, substitutes, or economic incentives (Oguge et al., 2021; Joseph et al., 2025). In the literature, dispensation of knowledge into behaviour was the dominant finding, which shows that in spite of the recognition of adverse effects, the substitution and reduction practice is not adequately practiced. Therefore, the literature review indicates that the lack of awareness and structural limitations are interacting to form behaviour and require specific intervention, informational campaigns, and increased enforcement of regulations to promote the development of sustainable eco-friendly behaviour.

H1: There is no significant difference in the levels of knowledge and attitude regarding the harmful effects of plastic bag usage among community people.

A literature review of the recent sources can contribute a lot of evidence regarding the relationship between demographic characteristics and knowledge and attitudes towards the detrimental effects of plastic bag use, which directly feeds the outlined hypothesis. Senturk and Dumludag (2022) showed that socio-demographic variables (gender, income, marital status, employment, and others) had significant impacts on the decision between paid and free-of-charge plastic bags among consumers in Turkey, but age and the level of education did not have any significant impact. This result is very much related to the hypothesis since it indicates that demographic variables are not always predictive of knowledge-based behavioural differences. Equally, in a study by Ashimi et al. (2022) on rural and hospital workers in Nigeria, it was revealed that plastic hazards awareness was predominant among the respondents regardless of demographic differences, which means that there was no significant demographic impact. Mahmoud et al. (2023) also established that knowledge and positive attitudes depended on targeted education but not demographic background since the positive results were equally spread at the end of the intervention. All these studies imply that there is a possibility that demographic differences are not the primary cause of

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variation in awareness, so the gaps in knowledge are not highly demographically motivated.

Similar trends were reflected in studies that investigate the environmental awareness and behavioural change. Soares et al. (2021) indicated that even though demographic factors and perceived impacts help to forecast environmental behaviors, the knowledge of plastic hazards was extensive among the persons belonging to various demographic groups. Similarly, studies focusing on behavioural aspects that were concerned with consumers, as Khalifa (2023) reported, found that consumers showed sufficient awareness with regard to plastic pollution, but lifestyle habits and accessibility usually dictated further usage instead of demographic variables, including age or education. Le, Dao, and Doan (2024) supported the argument by determining that the factors of the community attachment and social influence are more dominant than the demographic factors in determining the environmental intentions with the demographic moderation effects being minimal. The evidence thus indicates that the knowledge and attitudes regarding harmful use of plastics are commonly disseminated among people of various demographic backgrounds and this theory and evidence substantiates the hypothesis that the demographic variables might not have significant impact on knowledge and perceptions of harmful plastic use.

H2: There is no significant association between selected demographic variables (age, gender, and education) and the knowledge and attitude levels regarding the harmful effects of plastic bag usage among community people.

The study reviewed offers a lot of evidence on practices that were usually common in the use of plastics, which directly reflects the formulation of the hypothesis that does not show any significant difference in plastic bag usage practices across communities. It was disclosed by Bandara et al. (2024) that plastic and polythene have become an inseparable part of everyday life because they are reasonably priced and have few options. The study revealed that a majority of households (more than 83 percent) use plastic products in their daily activities regardless of the demographic variations, meaning that there was uniformity in the usage patterns. Likewise, Upendra et al. (2020) discovered that most of the urban dwellers demonstrated average levels of knowledge about the risks of using plastic, but they still used plastic because of convenience, which indicated that the awareness levels did not

significantly alter the usage behaviour. Burning of plastics was a common household practice and it showed that there was a similarity in the disposal of plastics.

Moreover, the findings of macro-level research of waste management show that people are likely to use and dispose of plastics in a similar way not because of individual differences but because of systemic reasons. According to Saifi and Jha (2024), in cities like Pune, plastic segregation and disposal were predominantly organized according to programs conducted by the municipalities as opposed to the effects of individual behaviours. Even in the context of community projects that rely on a circular economy, Wadhvani et al. (2025) discovered that the household level of engagement in recycling activities does not differ depending on the demographic profiles because their decisions are influenced by community mobilization, instead of individual preferences. There was also a consistent high occurrence of plastics, in particular, HDPE and PET types, in marine areas along the Maharashtra coast, and it proves consistent consumption patterns that ultimately determine environmental littering (Naik et al., 2021; Gosavi et al., 2025). The overall result of these studies are that plastic use is not particularly demographically or behaviorally differentiated but is rather caused by its consistent availability, low prices, and their extensive use.

H3: There is no significant variation in common practices related to plastic bag usage among community people in the selected areas of Supane, Karad.

3. Research Gap

Although there is growing body of empirical research on the use of plastic bags, there is still a significant gap in the information relating to the integrated nature of knowledge, attitudes, demographic variables, and actual behavioural behaviour in the context of communities. The current evidence is mainly based on the urban population or certain occupational groups, which brings about few generalizations to semi-urban and rural communities whereby behavioural forces can be very different. In addition, though previous studies have determined the differences in degree of awareness, hardly any studies have elucidated clearly the gap between awareness and actual application of environmentally responsible practices. The role of demographic variables is also inconclusive with results not always showing that age, sex, or educational level create any significant difference in the level of knowledge or utilization behaviour. Also,

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there is a lack of research, which uses an interdisciplinary analytical approach that brings together the quantitative results and behavioural assessment at the community level. Thus, a formal study concentrated on the interactions between demographics, awareness, and behavioral habits of smaller communities is needed to produce context-specific knowledge and inform the sustainable interventions.

4. Statement of the Problem

The prevalence of plastic bags is still a serious threat to the environment and human health, but the community-based behavioral change in the use of these products is still inconsistent and not well-informed. Despite some studies conducted on awareness and perception of plastic hazards there is still a gap in evidence on the issue of why increased awareness does not always lead to behavioral change, especially in semi-urban environment. In addition, the effect of demographic factors (age, gender, education) on the knowledge and practices is inconclusive, which restricts the possibility of developing specific interventions. Under these conditions, there is need to conduct a systematic evaluation of the available knowledge, attitude and prevalent usage practices among community individuals, as well as whether the demographic variables play a big role in defining such trends. Thus, the current research responds to the necessity to assess how people think and react to negative impacts of the use of plastic bags and whether behavioral differences do exist in the segments of population, thus, producing the evidence to be used in the futuristic awareness campaigns and policies.

5. Research Methodology

The methodology used in the study was a mixed method design incorporation that involved both the qualitative and quantitative approach to create the comprehensive evaluation of the knowledge and attitude concerning the harmful effects of using plastic bags. The research design applied was descriptive and analytical research that identified current conditions and established the association between variables. They were gathered using a structured questionnaire in 200 selected community people in Supane, Karad and analyzed by use of MS Excel and SPSS-27. Mean, Standard Deviation and Regression are some of the statistical tools used to compare the levels and the variances between the variables.

➤ Sampling Strategy

The stratified random sampling design was applied to ensure the equal representation of various groups of

individuals belonging to the community. Demographic differences were used to classify the respondents and this facilitated objective selection and improved the comparative validity.

➤ Data Collection Method

Primary data were obtained directly by using a structured questionnaire on respondents, but the secondary data were taken as published reports, articles, and government records. This combination was useful in enhancing the trustworthiness of results and offered the factual basis of interpretation.

6. Result and interpretations

Table 1: Demographic Characteristics

S. NO	Demographic Characteristics	N	%
1	Gender	Male	105 52.50%
		Female	95 47.50%
2	Age	18-25 Years	39 19.50%
		26-35 Years	39 19.50%
		36-45 Years	35 17.50%
		46-55 Years	45 22.50%
		Above 55 Years	42 21%
3	Educational Qualification	Primary Education	44 22%
		Secondary Education	44 22%
		Higher Secondary Education	37 18.50%
		Graduate	38 19%
		Post-Graduate	37 18.50%
4	Monthly Income	Below Rs 20,000	44 22%
		Rs 20,001 – Rs 40,000	41 20.50%
		Rs 40,001 – Rs 60,000	30 15%
		Rs 60,001 – Rs 80,000	41 20.50%
		Above Rs 80,000	44 22%

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5	Occupation	Employed	6 0	30%
		Unemployed	4 3	21.5 0%
		Student	5 3	26.5 0%
		Homemaker	4 4	22%
6	Residential type	Rural	5 0	50%
		Semi-Urban	5 0	50%

The population structure of the respondents indicates that there was a fairly balanced representation of the most important characteristics. The sample has a balance of gender with 52.50 percent males and 47.50 percent females. The distribution of the respondents is balanced in terms of age since the highest number in the sample is 4655-year (22.50%), and those over 55 (21) years are not far behind, which shows the involvement of mature and experienced people in the study. Education qualification shows a mixed heterogenous blend, with primary and secondary highest at 22 percent and 22 percent respectively, graduate and post-graduate at about 19 percent and 18.50 percent respectively meaning that there is a differing academic exposure. The distribution of monthly income indicates a balanced distribution at the low and high ends, with 22% below the income distribution with less than 20000, above income distribution with more than 80000, which represents the socio-economic diversity. The occupation status indicates that one-third of them occupies jobs, and students, homemakers, and those who have no jobs represent quite significant percentages, representing the representatives of various groups of life styles. The equality in the residential status is also similar between residential and semi-urban respondents which indicates a balanced coverage of geographical diversity. In general, demographic pattern indicates sufficient diversity and representativeness which enhances the generalizability of results.

➤ **Outcomes based on objectives**

Objective 1: To assess the existing level of knowledge and attitude among community people regarding the harmful effects of plastic bag usage.

The results associated with Objective 1 showed that the community individuals exhibited diverse rates of awareness of the negative influence of using plastic bags. Descriptive analysis has revealed that a significant portion of the respondents possessed knowledge that plastic bags can cause environmental

degradation, non-biodegradation, soil pollution, and threat to animal life. Nevertheless, the degree of awareness about the long-term risks of human health when subjected to micro-plastic was moderate (Herdiansyah et al., 2022). The respondents who were highly educated in terms of education and had more access to the information regarding the environment scored higher in terms of their knowledge. Despite the fact that awareness campaigns seem to have covered some segment of the population, it has shown that there are no homogeneous results of knowledge distribution, which indicates gaps in the dissemination process and low access to structured environmental education (Hamza and Mahmoud 2023).

With regard to the aspect of attitude, the results have shown that although the community members were concerned about the destructive nature of plastic bag use, they were not consistently inclined towards behavioural changes in mitigation practices. A large percentage of the participants affirmed that the use of plastic bags has to be minimized, but only a minor percentage of the respondents said they carry cloth or biodegradable bags on a regular basis (Kitu et al., 2023). Hypothesis testing of H1 showed that there was no significant change in knowledge level and attitude, which is that even though people had been informed about the harmful effects, it did not always lead to eco-friendly intentions in behaviour (Le et al., 2024). This is an indication that knowledge itself might not be enough to translate into behavioural change therefore the necessity of strategies that involve reinforcement, motivation-enhancing interventions, and policy-based encouragement to help in the promotion of sustainable options (Ahsan et al., 2020).

Table 2: Patterns of Knowledge and Attitude Regarding Harmful Effects of Plastic Bag Usage

Knowledge & Attitude Dimensions	Level Observed	Brief Description among Community People	Behavioral Implication
Awareness of environmental hazards of plastics	Moderate level	People possess basic awareness that plastic bags cause pollution and affect soil and water	Awareness is present, yet behavioral outcomes remain unchanged.

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		quality.	
Knowledge regarding long-term ecological damage	Limited level	Most individuals lack deeper knowledge of long-term effects like soil infertility, animal death, landfill accumulation etc.	Limited environmental responsibility in day-to-day actions.
Understanding harmful effects on human health	Partial level	Community members know plastics are harmful but are not aware of specific health consequences.	Does not influence buying or usage habits prominently.
Attitude toward banning plastic bags	Mixed attitude	Some support restrictions, while others feel banning will cause inconvenience.	Suggests resistance to change due to lifestyle dependence.
Preference for eco-friendly alternatives	Low preference	People do not actively choose biodegradable bags unless available at low cost.	Cost-based decision-making dominates eco-conscious behavior.
Attitude toward reduction of plastic use	Positive but passive	Individuals express willingness to reduce usage but lack motivation to act.	Results in attitudinal-behavioral gap.

Belief in social responsibility	Moderate	People believe controlling plastic usage is important but expect change to start collectively, not individually.	Reflects societal dependency for initiating environmental change.
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Objective 2: To determine the association between selected demographic variables (age, gender, and education) and the knowledge and attitude level regarding harmful effects of plastic bag usage.

Table 3: Model Summary Table

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.175 ^a	.030	.026	2.94382
a. Predictors: Demographic variables (age, gender, and education)				

The model summary shows that the demographic variables that include age, sex and education contribute a relatively low percentage of the variation of the dependent variable. The strength of the association between the predictors and outcome is weak as the R value is 0.175. The value of R² (.030) indicates that these demographic factors can only explain 3 percent of the variance of the dependent variable where the Adjusted R² (.026) further indicates that the explanatory power is nuanced by considering the number of predictors and the sample size, a (.030) difference is observed. The standard error of the estimate (2.94382) represents the mean difference of the values observed and the predicted values and this shows that there was a significant unexplained variability. Altogether, the model has shown that demographic factors including age, gender, and education have little to predictive capacity, which means that there are other more influential predictors of the outcome.

Table 4: ANOVA^a Table

ANOVA ^a						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	53.911	1	53.911	6.221	.013 ^b
	Residual	1715.884	198	8.666		
	Total	1769.795	199			

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a. Dependent Variable: Knowledge and attitude levels
b. Predictors: Demographic variables (age, gender, and education)

The outcome of the ANOVA shows that regression model is significant in the explanation of variation in the level of the degree of knowledge and attitude depending on the demographic factors like age, gender, and education. The computed F-value of 6.221, where the significance level of the model amounts to .013 shows that the model has a significant predictive value of the dependent variable at the 5 percent mark. Despite a low overall percentage of explained variance, which is similar to the previous model summary findings, the given significance value means that in aggregate, the demographic variables make a significant yet insignificant impact on the level of knowledge and attitudes. The fact that the mean square of the regression took 53.911 as compared to 8.666 of the residuals is yet another confirmation of the fact that there is some variation that can be attributed to the predictors. Hence, demographics do not account or explain a significant percentage of the difference, but it is statistically significant and relevant in account of knowledge and attitudes of respondents.

Table 5: Coefficients^a Table

Coefficients ^a						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	7.162	.904		7.927	.000
	Demographic variables (age, gender, and education)	.202	.081	.175	2.494	.013

The coefficients table shows that the demographic variables (age, gender and education) have significant positive influence on the level of knowledge and attitudes which are statistically significant. The unstandardized coefficient (B = 0.202) implies that an increase of one unit in demographic score would lead to an increase of 0.202 units of the level of knowledge

and attitude other factors ;remaining constant. The model beta (.175) indicates a relative small effect size that supports the fact that demographics have a positive influence albeit lowly on the dependent variable. The t-value of 2.494 and the significance of 0.013 indicates that the relationship is statistically significant at 5% level of significance. Also, the constant score of 7.162 represents the zero level of knowledge and attitude in the case of neutral demographic variables. In general, despite the undeniable role of demographic characteristics in determining knowledge and attitude, the magnitude of the impact is not as great, and it is possible to assume that there are other variables at play that can contribute to the development of knowledge and attitudes.

Objective 3: To identify common practices related to plastic bag usage among community people in the selected areas of Supane, Karad.

The results of Objective 3 showed that the usage of plastic bags remains to be very ingrained within the everyday activities of the community members of Supane, Karad. The majority of respondents indicated that they use plastic bags on a regular basis when shopping at the grocery store, vegetables, and house items, mainly because the bags are free, light and easy to transport (Singh et al., 2021). In addition, plastic bags were reused multiple times at home to preserve food items and get rid of waste, and it proves to be a habitual addiction to them (Jadhav et al., 2021). Even though there was a low percentage of respondents who said that they occasionally used cloth or jute bags, this was not common in various demographic groups. This means that environmentally-friendly options are not yet a stable or widespread option among the representatives of the community (Bala et al., 2024).

Regarding Hypothesis H3, statistical analysis revealed that community people did not significantly differ in plastic bag usage practices which proved the null hypothesis. No matter the age, profession, or education level, the same behavioural patterns were present, which implies that the reliance on plastic bags is a standard among the population (Pathak et al., 2023). The absence of any noteworthy change in behaviour underlines that the awareness is not enough to have an impact on the ultimate utilization patterns. The implications of the findings are that behavioural change will involve more intrusive measures like regulatory controls to limit distribution of plastic, subsidized provision of biodegradable bags, and interventions on community levels. This underlines

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the importance of specific actions to change practices in a consistent manner over all groups of the population (Verma et al., 2024).

Table 6: Patterns of Plastic Bag Usage Practices among Community Members

Common Practices	Nature of Practice	Brief Description Observed Among Community People	Behavioral Implication
Carrying cloth/jute bags	Occasional practice	People sometimes carry alternative bags, but dependency on plastic is more common.	Reflects low adoption of sustainable habits.
Accepting plastic bags from vendors	Frequent practice	Most people willingly accept plastic bags provided during purchase.	Indicates convenience-based usage.
Reusing plastic bags at home	Common practice	Bags received from shops are reused for storing items or carrying goods.	Shows utility-driven continuation of plastic use.
Disposal of plastic bags	Mixed practice	Bags are disposed either in common waste bins or local surroundings.	May contribute to environmental pollution.

Using plastic bags for household storage	Regular practice	Households often keep plastic bags for daily storage purposes.	Creates ongoing accumulation of plastic waste.
Awareness of environmental effects	Moderate awareness	People have basic knowledge but do not change practices accordingly.	Knowledge-behavior gap is evident.
Use of biodegradable bags	Rare practice	Very few people purchase biodegradable substitutes due to low availability or cost.	Limited shift toward sustainable alternatives.

7. Discussion

The study demonstrates understanding of the knowledge, attitude, and behavioral pattern in terms of detrimental impact of plastic bag use in the community. The findings make it clear that even though respondents had some fundamental awareness regarding the environmental impact of plastic bags, such as soil pollution, animal injuries, and the destruction of the ecological situation in the long run, the latter did not always reflect in the sustainable behavioural patterns. The present observation echoes other studies, which often emphasize that environmental awareness is not a sufficient determinant of environmental behaviour because attitudes and habits are often influenced by convenience, substitutes availability and socio-economic factors (Hamza and Mahmoud, 2023; Le et al., 2024). The moderate degree of attitude towards decrease in plastic consumption is positive, but, still, the fact that the respondents use plastic bags to shop, store and dispose products means that they do not show signs of behavioural change despite the absence of resistance to change at the regional scale (Coco Chin et al., 2023).

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Moreover, the study found that demographic factors like age, gender, and education influenced the level of knowledge and attitude in a minimal but significant impact, and it is consistent with the evidence that predicts environmental knowledge is not necessarily socially stratified but it is often spread to the whole populations (Senturk and Dumludag, 2022). One of the main issues identified is the inability to use environmentally friendly options, e.g., cloth or biodegradable bags, which can be explained by the limitations also present in rural and semi-urban areas where cost, accessibility, and preference as habits discourage the behaviour change (Joseph et al., 2025). These findings indicate that unless there is active reinforcement, in terms of local campaigns, policy enforcement, and community based educational programs, the possible attitude change can be superficial and there can be no simple behaviour alterations. Thus the study highlights the importance of a structured awareness interventions, consistent policy implementation, and community-level incorporation of sustainable alternatives to enhance incorporating cognitive awareness and commitment to behavioural change towards lessening the plastic bag dependency.

8. Conclusion

The study concludes that despite the community having an average level of awareness on the adverse impacts of using plastic bags, there is no consistency between the level of awareness and the practice of responsible behaviour. Although the attitudes exhibited by the respondents towards the reduction of plastic consumption are positive, the presence of habits based on the use of plastic bags is still observed because of convenience, the unavailability of alternatives to plastic bags, and the un-reinforced behaviour. Demographic factors like age, sex and education showed little impact on knowledge and attitude and this might indicate that the attitudes toward environmental issues are more common among groups of people instead of being affected by definite demographic variations. The results highlight the fact that changes in behaviour cannot be achieved solely through awareness but that well-organised interventions, access to low-cost and environmentally friendly alternatives, and implementation on a policy level are all necessary to ensure that the changes are sustainable. Thus, the enhancement of educational campaigns, community involvement, and locally specific interventions is crucial to the promotion of long-term eco-oriented behaviour and the majority of reliance on damaging plastic products.

➤ Limitations of the study

The sample size and geographical scope of the study limit the generalizability of the study findings to the broader population because the researchers only gathered data in limited regions of Supane, Karad. Self-reported answers might be based on social desirability, which would interfere with behavioural information. The study looked at a narrow range of demographical variables leaving out such variables like cultural influence, exposure to the environment, and the availability of alternatives. Also, the attitudes and practices were measured at one cross-sectional point and it was not possible to observe any change in behaviour across time. Longitudinal and multi-regional research studies in future can bring more detailed information.

➤ Implications of the study

The study has significant policy implications to the policymakers, the community leaders and the environmental practitioners. The identified gap between awareness and real-world practices of behaviour points at the necessity to introduce specific interventions that would not only increase the level of knowledge but promote behaviour change with the help of available options, constant encouragement, and reinforcement. Such insights may be utilized by local governing bodies to develop awareness programmes, introduce environmental content in community-level education, and introduce more stringent monitoring of the distribution of single-use plastics. Furthermore, the finding that the change in demographics has not been the factor implies that the interventions could be developed in a standardized manner, as opposed to segment-specific. Through the study, it is therefore recommended that sustainable practices at the community level be integrated with co-ordinated action in terms of policy action, education on the same and behavioural campaigns.

➤ Future Research Directions

Further studies ought to be extended to cover more and more varied populations in various rural, semi-urban and urban areas in order to increase the generalizability. It is suggested that longitudinal studies should be used to evaluate the changes in knowledge, attitudes and behaviors over time, particularly in relation to awareness programs and changes in policies. The study may include some other predictors like cultural beliefs, exposure to the environment, availability of environmentally friendly substitutes and economic limiting factors in future research to offer more profound understanding of behaviour. Intervention or experimental research can

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also assess how effective particular awareness programmes, incentives based mechanisms and policy enforcement strategies could be. In addition, underpinning motives and resistance issues and decision-making behavioural patterns that would be revealed through qualitative methods like focus group discussions and in-depth interviews can provide deeper contextual insights that would support behavioural change models.

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