

AN APPRAISEMENT OF PERCEPTIVITY AND DISPOSITION OF WOMEN INHABITANTS OF INDORE CITY TOWARDS SWACHH BHARAT ABHIYAN

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ABSTRACT

When it comes to creating behavioral change in the attitudes of Indian residents, the Swachh Bharat initiative has been the most effective program. The agog female population has also attempted to contribute to the initiative in a variety of ways. When it comes to the city that has been on top of the Swachhta Sarvekshan for 5 years in a row, it is important to comprehend the contribution of the city's female population. The survey was done on the female population of Indore to better understand and gauge their attitudes and awareness regarding Swachh Bharat Abhiyan in Indore city and suggest women-centric policies that encourage women leadership and women's involvement in decision making. To quantify the views of the female population, the non-probabilistic convenience sample approach was utilized in conjunction with a structured questionnaire. Appropriate statistical methods were applied to examine the data and arrive at a ratiocination. To test the hypothesis, the data were examined using a one-sample t-test. And, consistent with the t-test results, the null hypothesis was rejected, allowing us to infer that there is considerable knowledge and awareness of Swachh Bharat Abhiyan among Indore's female population. In order to find the difference in perceptions and awareness of female residents of Indore city regarding Swachh Bharat Abhiyan on the basis of demographics, One-way ANOVA test was applied leading us to the conclusion that there was a difference in perception and awareness of female citizens of Indore city regarding the program on basis of educational qualification.

Keywords: Awareness, Women, Swachh Bharat Abhiyan, Cleanliness, Waste Management System

1. Introduction

The Swachh Bharat Abhiyan, also known as the Clean India Mission (Singh, Kunwar, & Sharma, 2018), was a nationwide campaign that was launched to have clean streets and roads, build toilets in urban and rural areas to eliminate open defecation, track the use of toilet mechanisms, and further develop infrastructure in various cities. The program was started over a five-year period, from 2014 to 2019. In commemoration of Mahatma Gandhi's 150th birth anniversary, Indian Prime Minister Narendra Modi inaugurated the campaign on October 2nd, 2014 at Rajghat in New Delhi. The mission (Desai & Roy, 2018) is divided into two parts:

1. Swachh Bharat Abhiyan, which is run by the Ministry of Drinking Water and Sanitation.

2. Swachh Bharat Abhiyan, which is run by the Ministry of Housing and Urban Affairs.

The city that has been in the spotlight from past five consecutive years in the Swachhta Sarvekshan is Indore. It has witnessed a path breaking turnaround from the 149th position to the top (Rana, 2021). The journey to the top was partaken with the cooperation of the government machinery, private sector, citizens, civil society (Swachh Survekshan-2017, 2017). And the major part played in the success was by the women citizens of Indore through segregation at source by segregating their household waste in the designated categories. The salient waste management initiatives undertaken by Indore city (Solid waste management, 2020) under the Swachh Bharat Abhiyan have been depicted in figure 1.

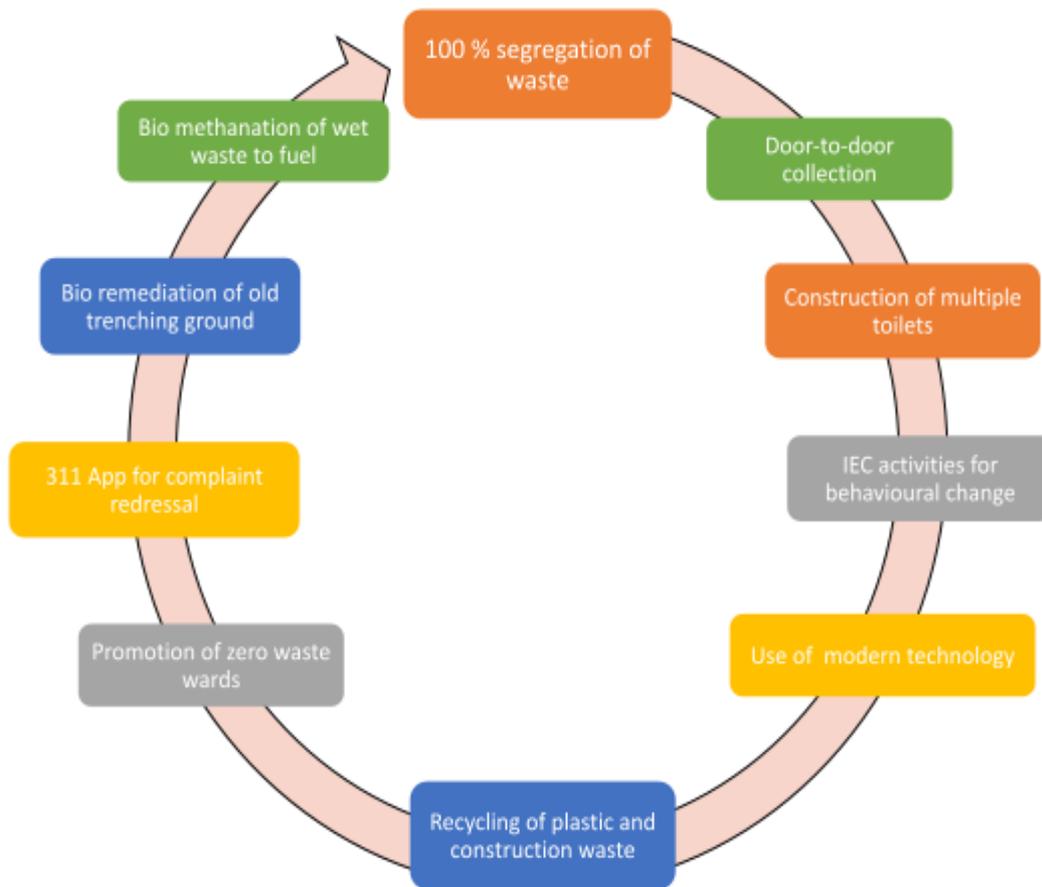


Figure 1: Salient features of the waste management system of Indore city

2. Literature Review

The literature review was undertaken on studies relating women to waste management, sanitation and Swachh Bharat Abhiyan as depicted in table 1 below. The literature review the gap in research.

Table 1: Literature review

S. No.	Author	Article	Salient Features
1	Susan Buckingham, Dory Reeves & Anna Batchelor (Buckingham , Reeves , & Batchelor , 2005)	Wasting women: The environmental justice of including women in municipal waste management, Local Environment	Opportunities and benefits of considering gender in municipal waste management policy.
			Political structures, champions for gender equality, and equal opportunity for fairer sex make a difference in the way women are included in municipal solid waste management policy.
2	T.V. Ramachandra, Shrithi Bachamanda (Ramachandra & Bachamanda, 2007)	Environmental audit of municipal solid waste management	Municipal solid waste management environmental audit undertaken under the heads of compliance, operational, resource management, and occupational risk audit.
			Shortcomings were found in the areas of segregation of waste, lack of community bins, partitioned vehicles for transportation of waste, recycling, composting, and waste burning.
			Measures required are segregation at source, more waste treatment plants, use of new technology, and occupational health and safety programs for the workers, and provision of safety gear.

3	Sharholy, M., Ahmad, K., Mahmood G., Trivedi R.C (Sharholy, Ahmad, Mahmood, & Trivedi, 2008)	Municipal Solid Waste Management in Indian Cities-A review	Evaluation of current status of municipal solid waste management in Indian cities.
			The review was done on characteristics, generation, collection and transportation, disposal, and treatment technology for a municipal solid waste management system.
4	Rajendra Kumar Kaushal, George K.Vargese, Mayuri Chabukdhara (Kaushal, Varghese, & Chabukdhara, 2012)	Municipal solid waste management in India- current status and future challenges: A review	Key issues in the waste management system are source segregation, treatment, disposal of waste, resource generation.
			Relooking at certain strategic technological, financial, and policy-making issues is also required.
			More stress on segregation for successful waste management is required.
5	Ankit Verma, Prof. B.K. Bhonde (Verma & Bhonde, 2014)	Optimization of Municipal Solid Waste Management of Indore city using GIS	Developing of proper storage, collection, and disposal system plan.
			GIS optimal routing model.
			Efficient management of moving the solid waste, fuel consumption, and work schedule for the worker and vehicle.
6	Koohi, Elham & Shobeiri, Seyed Mohammad & Koohi, Elahe & Meiboudi, Hossein (Koohi, Shobeiri, Koohi, & Meiboudi, 2014)	Women's participation in environmental management and progress Promotion Culture.	Positive effects of management and participation of women in development and promotion of environmental culture.
			Women's managerial talents and innate abilities can help protect the environment.
7	World Health Report, World Health Organization (World health statistics 2015., 2015)	World Health Report	Statistics on core measures of population health and national health system.
			Indication of whether the regional and global targets set for Millennium Development Goals 2015 are likely to be met or not.
			14% of the world population is without any access to any kind of sanitation facilities and hence have an increased mortality rate in such regions.
8	Vidyadhar Durgekar (VidyadharDurgekar, 2016)	Towards Sustainable Waste Management through Technological Innovations, Effective Policy, Supply Chain Integration & Participation	Impact analysis of aspects and hazards associated with municipal solid waste.
			Improvement in the situation can be brought about through sustainable waste management by an effective policy, legislation, supply chain integration, and participation in technology.

The literature review helped in understanding the void in the research. The gaps (Robinson, Saldanha, & McKoy, 2011) found in the research were as follows:

1. Prior study on the gender-specific analysis of the Swachh Bharat Abhiyan revealed an evident knowledge gap in the current investigations. Previous study concentrated on the program's objectives, effects, and SWOT analysis.
2. Furthermore, previous studies has not looked at sanitation from the standpoint of women. The focus was solely on the construction of toilets, with little consideration given to other issues or areas relating to female sanitation and hygiene. There was no examination of sanitation strategies based on a female's point of view.
3. For environmental sustainability, the topic of municipal solid waste management should be more focused on how it might be linked to a gender-related viewpoint.

3. Objectives

The objectives for conducting this research study are enumerated below:

1. To evaluate the perceptions of the female citizens of Indore regarding sanitation, hygiene, and cleanliness.
2. To assess the awareness and the attitude of the women citizens of Indore towards Swachh Bharat Abhiyan and a sustainable waste management system in Indore city.

4. Hypotheses Testing

The present research proposed to test the following hypothesis:

H₀₁ - There is no significant awareness amongst the female residents of Indore city towards Swachh Bharat Abhiyan.

H₀₂ . There is no significant difference in perceptions and awareness of the female residents of Indore city regarding the Swachh Bharat Abhiyan on the basis of age.

H₀₃- There is no significant difference in perceptions and awareness of the female residents of Indore city regarding the Swachh Bharat Abhiyan on the basis of occupation.

H₀₄ - There is no significant difference in perceptions and awareness of the female

residents of Indore city regarding the Swachh Bharat Abhiyan on the basis of educational qualification.

5. Research Methodology

Research is a continuous process that needs furtherance as time goes by and so is non-exhaustive in nature. The study required the descriptive research design. The purpose of descriptive research is to formulate a problem for more precise investigation or discovering new ideas and insights (Kothari & Garg, 2019). Descriptive research was done using the primary research method in which information was collected directly from the subjects. It is based on primary data which was collected through closed ended structured questionnaire.

a. Population: The target population for study was the female population of Indore city above 18 years of age.

b. Sampling method and sample size: The data collection was conducted by non-probabilistic convenience sampling method.

c. Survey instrument and data collection: In order to achieve the objectives of the present study, a survey was conducted with help of a close-ended, structured questionnaire circulated through Google forms. The Google form was circulated through email, Whatsapp, and Facebook for reaching out to the female respondents who were above 18 years of age and residents of Indore city.

d. Questionnaire: The questionnaire was divided into two sections- the first section dealt with the demographic information of the respondents regarding their age, educational qualification and occupation. The second section dealt with the information regarding the awareness and the perceptions of women citizens of Indore city towards Swachh Bharat Abhiyan. In all 557 questionnaires were collected and 500 questionnaires were found complete in all aspects to conduct the analysis.

e. Statistical techniques: The data was analyzed by using reliability statistics, mean, standard deviation and t-test on IBM SPSS 20.

6. Analysis and Interpretation

6.1 Demographic Statistics

6.1.1. Age

Table 2 : Age related statistics

Age groups	Frequency	Percent	Valid Percent
Below 20 years	38	7.6	7.6
21- 30 years	87	17.4	17.4
31- 40 years	127	25.4	25.4
41- 50 years	139	27.8	27.8
51- 60 years	54	10.8	10.8
Above 60 years	55	11.0	11.0
Total	500	100.0	100.0

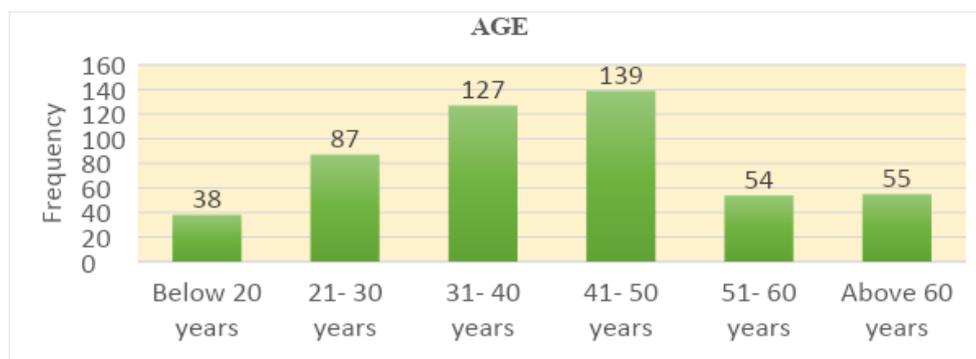


Figure 2: Graphical representation of age of the respondents

Interpretation: Descriptive statistics of age as illustrated in table 2 and figure 2 indicates the age-wise distribution of the respondents. The major number of the respondents belonged to the age group of 41 to 50 years (N= 139, 27.8%) This category is followed by the age group of 31 to 40 years (N=127, 25.4%) at the second position respectively. The category with third highest number of respondents belongs to the age group of 21 to 30 years

(N=87, 17.4%). The next two categories with maximum number of respondents belong to the senior citizens category from the age group of 51 to 60 years (N=54, 10.8%) and above 60 years of age (N=55, 11%) with a difference of just one respondent between the two categories respectively. The least number of respondents belong to the age group of below 20 years (N=38, 7.5%).

6.1.2 Occupation

Table 3: Occupation related statistics

Category	Frequency	Percent	Valid Percent
Student	71	14.2	14.2
Service	101	20.2	20.2
Business	69	13.8	13.8
Homemaker	213	42.6	42.6
Retired	23	4.6	4.6
Other	23	4.6	4.6
Total	500	100.0	100.0

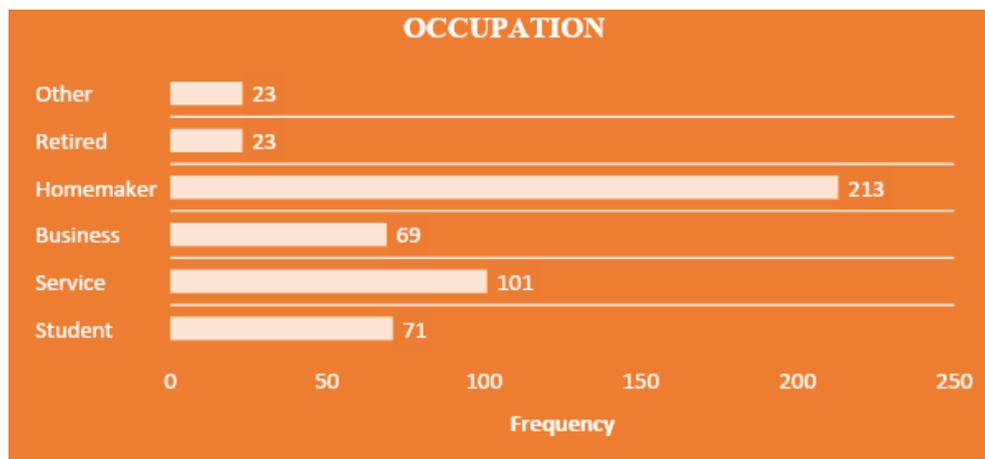


Figure 3: Graphical representation of occupation of the respondents

Interpretation: Descriptive statistical analysis of the occupation of the respondents as depicted by table 3 and figure 3 reveals that the majority of the respondents were homemakers (N=213,42.6%). The second category of occupation with maximum number of respondents was of people in service as the major occupation (N=101, 20.2%). The respondents who were students belonged to the next prevalent category of occupation (N=71,

14.2%). The category of occupation that closely matched the students' category in number was the respondents engaged in business (N=69, 13.8%). The two categories with equal number of respondents at the lowest rung of the ladder were for respondents who were retired (N=23, 4.6%) and for the respondents belonging to the "other" category of occupation (N=23,4.6%) where they did not fit in any of the strata of occupation described.

6.1.3 Educational Qualification

Table 4: Education related statistics

Sections	Frequency	Percent	Valid Percent
Below or till 10th standard	80	16.0	16.0
Below or till 12th standard	37	7.4	7.4
Diploma (pursing or completed)	26	5.2	5.2
Graduate (pursing or completed)	213	42.6	42.6
Post graduate (pursing or completed)	130	26.0	26.0
Doctorate PhD (pursuing or completed)	14	2.8	2.8
Total	500	100.0	100.0



Figure 4: Graphical representation of educational qualifications of the respondents

Interpretation: According to the descriptive statistical analysis of the educational qualification of the respondents as illustrated in

table 4 and figure 4, majority of the respondents were either pursuing or had completed their graduation (N=213,

42.6%). The next category of educational qualification with most number of respondents belonged to the category of respondents either pursuing or having completed their post-graduation (N=130, 26%). The next category of educational qualification with maximum number of respondents were those who had either studied till tenth standard or below (N=80, 16%). The next category with most number of respondents was of those people who had studied till or below 12th standard (N=37, 7.4%). There were some respondents who were either pursuing a diploma or were diploma holders (N=26, 5.2%). The category of educational qualification with least number of respondents was for the most educated respondents who were either pursuing a doctorate PhD or had completed their doctorates PhD (N=14, 2.8%). This shows that the majority of respondents were educated and aware of the facts.

6.2 Reliability Statistics

A reliability test (Cronbach Alpha) was conducted on the statements of the questionnaire. After running the reliability test on the questionnaire, it was found that the reliability score or the Cronbach alpha coefficient denoted by α was greater than 0.7 for all statements, which shows high internal consistency which means that the questionnaire is quite reliable.

6.3 Test for Normality

To investigate the normality testing, the Shapiro-Wilk test has been conducted on all the statements using IBM SPSS 26.0 software

program. Based on results of the Shapiro Wilk test it was found that the significant value of p for all the statements is significantly less than (.05). As the value of p is less than (.05), we can conclude that the data is normally distributed.

6.4 Perceptions and awareness of the female residents of Indore city regarding Swachh Bharat Abhiyan

This section deals with the evaluation of the awareness and perceptions of the female residents of Indore city regarding the Swachh Bharat program. They were asked about their knowledge regarding the program, segregation of waste, zero waste wards and the 4 R s of waste management. They also furnished information regarding their perceptions about the use of plastic, hygiene level and availability of public washrooms and finally regarding the cleanliness activities being conducted in their locality. They were also quizzed about their awareness regarding Swachhta Sarvekshan rankings for Indore city.

6.4.1 Awareness regarding Swachh Bharat Abhiyan campaign.

Interpretation: When the respondents were asked about their awareness regarding the Swachh Bharat Abhiyan program, according to table 6, all the respondents were aware about it (N=500, 100%). This shows that the respondents are percipient about the governmental initiatives regarding waste management in Indore city.

6.4.2 Awareness regarding the segregation of waste

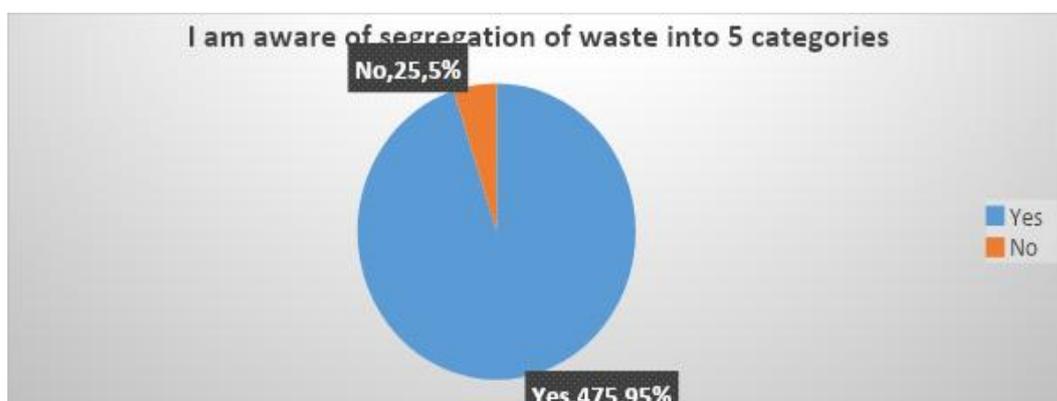


Figure 5: Graphical representation of awareness regarding the segregation of waste

Interpretation: The respondents were questioned about their cognizance regarding the segregation of waste into 5 different categories namely wet, dry, domestic hazardous, e-waste, and domestic sanitary waste as specified and the results are depicted in graph in figure 5. Plurality of the respondents (N=475, 95%) were aware about

the different categories their household waste was segregated into, albeit there were few respondents who were unaware of the categorization of the household waste (N=25, 5%) pointing to the gap in the IEC (Information, Education, Communication) activities of Swachh Bharat Abhiyan.

6.4.3 Segregation of household waste

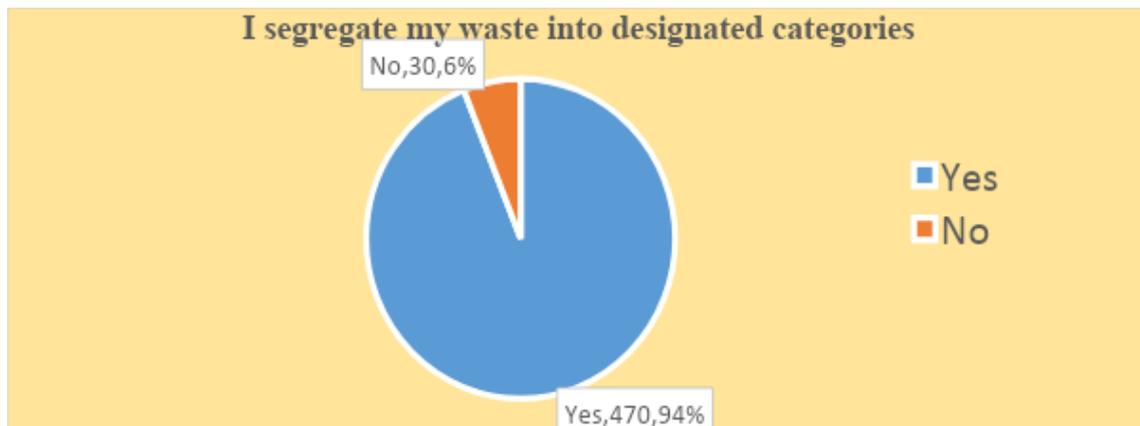


Figure 6: Graphical representation of segregation of household waste

Interpretation: As depicted by figure 6, multitude of the respondents segregated their waste into afore mentioned categories (N=470, 94%) thereby co-operating with the urban local body for segregation of waste at source. There were a few individual (N=30,6%) who for

reasons unspecified did not segregate their waste before disposing it in the garbage transfer vehicle and they need to be educated about the proper segregation of waste at source to address the shortcomings in the system.

6.4.4 Awareness regarding zero waste wards.



Figure 7: Graphical representation of awareness regarding zero waste wards.

Interpretation: When the respondents were quizzed about their conversance regarding concept of the zero waste wards in Indore city as clarified by 7, majority of the respondents were aware about the notion of zero waste

wards (N=355, 71%) signaling that they were au courant about the various concepts of sustainable waste management system being practiced in the city. There were a few respondents who were oblivious of the concept

of zero waste wards (N=145,29%) semaphoring the view that the knowledge about various measures and ideas regarding sustainable waste management system needed

to be communicated to the general public more comprehensively for accelerating the waste management initiatives by the Municipal corporation.

6.4.5 Awareness regarding 4 R s of waste management



Figure 8: Graphical representation of awareness regarding 4 R s of waste management

Interpretation: Regarding the familiarity of respondents with the four R s of waste management that were reuse, refuse, reduce and recycle as depicted in figure 8, quite a few respondents were aware of the concept (N=335, 67%) showing that the citizens have come of age when it comes to conservation of the planet and recognizing the need for a sustainable waste management system. There were a few individuals who had heard about the concept but did not know exactly what it entailed (N=121, 24%) which purports that the urban local body needs to work on making the concept of 4 R s of waste management more clearer to the general public so that the concept can be assimilated in the daily life of the citizens. Few of the individuals were not so sure about their awareness of the concept (N=23, 4.6%) and as such could not subsume the concept in their day to day life. A small proportion of the respondents were totally unaware of the concept of 4 R s of waste

management (N=21, 4.2%) and needed to be schooled about the concept.

6.4.6 Evaluating awareness regarding Swachh Bharat Abhiyan through hypothesis testing

Based on the data collected through the questionnaire regarding the awareness and perception of female respondents of Indore city, appropriate statistical tools were used to test the following hypothesis:-

H₀ - There is no significant awareness amongst the female residents of Indore city towards Swachh Bharat Abhiyan.

H₁ - There is a significant awareness amongst the female residents of Indore city towards Swachh Bharat Abhiyan.

To test this hypothesis **one-sample t-test** can be used. The t test was applied on the collected data in IBM SPSS 26 version software program and the results received are presented in table 11 below.

Table 5 : *T test results to test the awareness of the female citizens of Indore city towards Swachh Bharat Abhiyan*

One-Sample Test to test the hypothesis regarding awareness of the residents						
Statements	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
2.1. I am aware of the concept of zero waste wards.	63.506	499	0	1.29	1.25	1.33
2.2. I am aware of reuse, reduce, refuse and recycling concept of waste management.	37.489	499	0	1.664	1.58	1.75
2.3. I have sensitized and informed my family members about segregation of waste into different categories.	50.002	499	0	1.55	1.49	1.61
2.4. I am aware of the harmful effects of using plastic bags and single use plastic containers.	52.268	499	0	1.574	1.51	1.63
2.5. The public washrooms are clean and hygienic.	48.712	499	0	2.492	2.39	2.59
2.6. I feel there are adequate public toilets available in public areas for women	46.892	499	0	2.478	2.37	2.58
2.7. My locality is kept clean and hygienic.	45.256	499	0	1.856	1.78	1.94
2.8. Sanitation worker picks up the garbage and sweeps the premise regularly in my locality.	37.588	499	0	1.918	1.82	2.02
2.9. The garbage transfer vehicle arrives daily and on time to collect the household waste in my locality	46.048	499	0	1.622	1.55	1.69
2.10. I am aware about the Swachhta Sarvekshan and the fact that Indore has come first in the ranking for five consecutive years.	49.191	499	0	1.31	1.26	1.36

Interpretation: According to the results shown in table 5, the level of significance p is less than 0.05 at the 95 percent confidence level, indicating that the female residents of Indore city are fully aware about the Swachh Bharat Abhiyan initiatives. They were perfectly cognizant about the concepts of segregation of waste, zero waste wards and the 4 R s of waste management. The female residents were not only aware themselves but also took the initiative of sensitizing their family members about the concepts. The female citizens of Indore city are eager to move toward more sustainable and ecologically friendly waste disposal methods. The findings also suggest that women understand the harmful effects of

using plastic bags and single-use plastic containers. The females are conscientious about cleanliness and hygiene in public washrooms. They are also vigilant regarding the cleanliness in their locality and regularity of garbage collection services. They are fully aware of the achievement made by Indore in topping the Swachhta Sarvekshan 5 years in a row.

The aggregate results of the ten statements of the questionnaire show that the p-value (.000) for all the ten statements is lesser than (0.05), this suggests that the null hypothesis H_0 is **rejected** that there is no significant awareness amongst the female residents of Indore city towards Swachh Bharat Abhiyan. And

therefore accept the alternate hypothesis H_1 is accepted that there is significant awareness amongst the female residents of Indore city towards Swachh Bharat Abhiyan.

6.4.7 Evaluating the difference in perception and awareness of female residents of Indore city regarding Swachh Bharat Abhiyan on the basis of demographic variables.

In order to find the difference in perceptions and awareness of female residents of Indore

city regarding Swachh Bharat Abhiyan on the basis of age, occupation and educational qualification, One-way ANOVA test was performed on the data in IBM SPSS 26 software program.

Table 6: Results of One-way ANOVA for change in perception of the female residents according to demographic variables

Sr. No	Demographic Variable	Significance level p	Null hypothesis
1	Age	0.822	Accepted
2	Occupation	0.445	Accepted
3	Educational Qualification	0.021	Rejected

H_0 - There is no significant difference in perceptions and awareness of the female residents of Indore city regarding the Swachh Bharat Abhiyan on the basis of age.

H_1 - There is a significant difference in perceptions and awareness of the female residents of Indore city regarding the Swachh Bharat Abhiyan on the basis of age.

The Table 6 for the One-way ANOVA test for difference in perceptions and awareness of the female residents of Indore city regarding the Swachh Bharat Abhiyan on the basis of age shows that the significance value of p is (0.822) which is greater than the p value of (.05). In light of this the null hypothesis is **accepted** and the alternate hypothesis is rejected. Hence it can be concluded that there is no significant difference in perceptions and awareness of female residents of Indore city regarding the Swachh Bharat Abhiyan on the basis of age. This corroborates to the fact that irrespective of any age group, be it a young girl or an older woman, the female residents of Indore city are pronouncedly aware about the Swachh Bharat initiatives and have an idea regarding sustainable waste management system.

H_0 - There is no significant difference in perceptions and awareness of the female residents of Indore city regarding the Swachh Bharat Abhiyan on the basis of occupation.

H_1 - There is a significant difference in perceptions and awareness of the female

residents of Indore city regarding the Swachh Bharat Abhiyan on the basis of occupation.

The Table 6 for the One-way ANOVA test for difference in perceptions and awareness of the female residents of Indore city regarding the Swachh Bharat Abhiyan on the basis of occupation shows that the significance value of p is (0.445) which is greater than the p value of (.05). In light of this the null hypothesis is **accepted** and the alternate hypothesis is rejected. Hence it can be concluded that there is no significant difference in perceptions and awareness of female residents of Indore city regarding the Swachh Bharat Abhiyan on the basis of occupation. This indicatively proves that the female citizens of Indore city, be it a homemaker, a girl on job, a woman entrepreneur or a retired lady, all the females are vigilant and aware regarding the cleanliness mission.

H_0 - There is no significant difference in perceptions and awareness of the female residents of Indore city regarding the Swachh Bharat Abhiyan on the basis of educational qualification.

H_1 - There is a significant difference in perceptions and awareness of the female residents of Indore city regarding the Swachh Bharat Abhiyan on the basis of educational qualification.

The Table 6 for the One-way ANOVA test for difference in perceptions and awareness of the female residents of Indore city regarding the

Swachh Bharat Abhiyan on the basis of educational qualification shows that the significance value of p is (0.021) which is lesser than the p value of (.05). In light of this the null hypothesis is **rejected** and the alternate hypothesis is accepted. Hence it can be concluded that there is a significant difference in perceptions and awareness of female residents of Indore city regarding the Swachh Bharat Abhiyan on the basis of educational qualification. This suggests that the perceptions about cleanliness and waste management of the city will increase with increase in the literacy level of the female citizens of Indore city. More educated the female, better will be her awareness regarding cleanliness and sanitation initiatives being carried out in the city.

7. Conclusion and Recommendations

According to the research and data analysis it could be concluded that the female citizens of Indore city were fully aware of the concepts of waste segregation, zero waste wards, and the four R's of waste management. The female

inhabitants were aware of their surroundings and stepped up to the plate to refine their relatives' thoughts. Indore city's female citizens are willing to advocate for more controllable and environmentally compatible waste management methods. The findings also suggest that women are aware of the negative consequences of using plastic. Regarding public washrooms, ladies are concerned about tidiness and cleanliness. They are also concerned about the cleanliness of their neighborhood and the regularity of garbage collection services. They are well aware of Indore's achievement in completing the Swachhta Sarvekshan for the fifth year in a row. According to the results of the study, we would like to put forward the following recommendations (Kumar, Smith, Fowler, & Velis, 2017) for a more effective women-centric implementation of Swachh Bharat initiatives in Indore city as depicted in the figure 9 below:

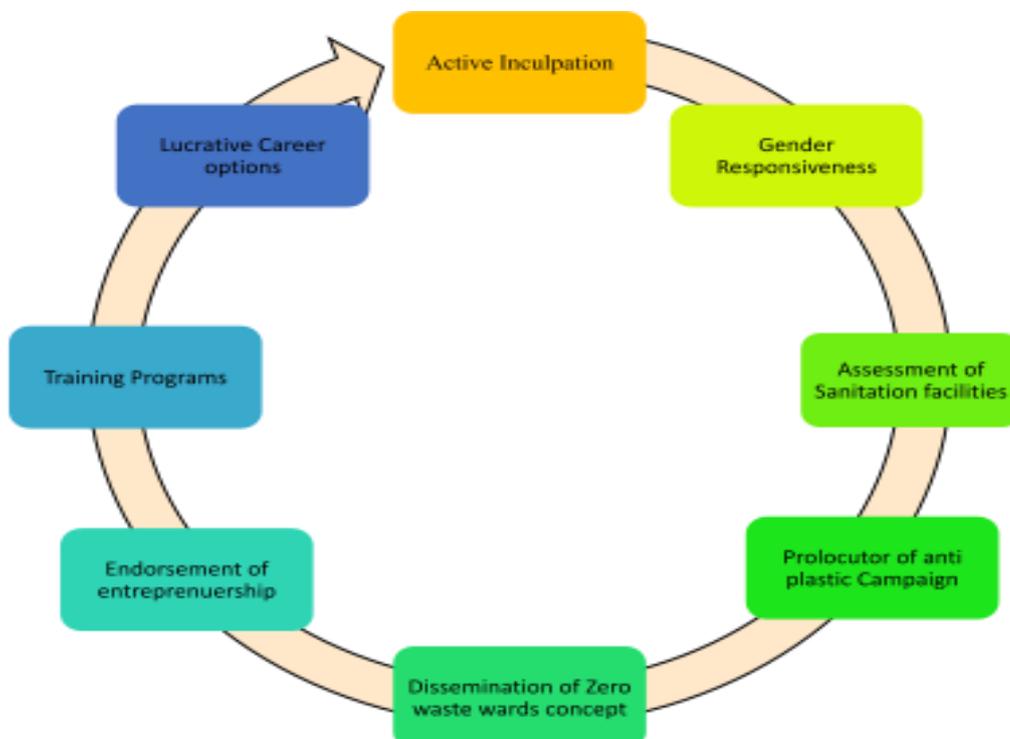


Figure 9: Recommendations and Suggestions

1. Active Inculcation- The active participation of all the women on Indore city in all the endeavors of waste management system can be done by

increasing the IEC (information education communication) activities of Swachh Bharat program and reining in the participation of the female residents.

2. **Gender Responsiveness-** The procedure for decision making and policy making needs to be more gender responsive for the long term waste management.
3. **Assessment of Sanitation facilities-** The women's feedback should be taken into account when it comes to cleanliness and hygiene being maintained at the public washrooms and construction of adequate toilets at crucial public places.
4. **Prolocutor of anti-plastic Campaign-** Appointing women citizens as spokesperson for anti-plastic campaign will encourage the public to limit the use of plastic bags and single use containers and lead to waste minimization.
5. **Dissemination of Zero waste wards concept-** The ladies in Indore are as of now mindful of the four r's of waste administration, they ought to be educated and taught to drive them toward the idea of no waste wards or the zero waste wards in Indore.
6. **Endorsement of entrepreneurship-** The investment in waste industry is now a lucrative proposition due to encouragement from the government. All the endeavors of such women entrepreneurs should be highlighted and brought to the forefront of the campaign leading to the augmentation of female employment and empowerment.
7. **Training Programs-** Different training programs, workshops, and projects in light of the guideline of reducing, reusing, and recycling should be organized on a more grassroots level in every region, with female residents at the top of the exercises, to guarantee feasible waste administration propensities are ingrained in everybody.
8. **Lucrative Career Options-** If the urban local body offers remuneration at par with the Industry, it will attract more females to work in the waste management industry be it as a sanitation worker, driver or a sanitation supervisor. Since the people engaged in the waste management and sanitation work have to often deal with hazardous materials, they need to be remunerated analogously. Swachh Bharat Abhiyan can serve as a platform for escalating the women empowerment and employment effectually.

References

1. Buckingham , S., Reeves , D., & Batchelor , A. (2005). Wasting women: The environmental justice of including women in municipal waste management. *International Journal of Justice and Sustainability*.
2. (2015). *World health statistics 2015*. Geneva: World Health Organization.
3. Desai, S., & Roy, S. (2018). A Review of Cleanliness Mission "Swachh Bharat Abhiyan: A Survey done for Thane District. *International Journal of Trend in Scientific Research and Development*, 2824-2830.
4. Kaushal, R., Varghese, G., & Chabukdhara, M. (2012). Municipal Solid Waste Management in India-Current State and Future Challenges: A Review. *International Journal of Engineering Science and Technology*, 1173-1189.
5. Koohi, E., Shobeiri, S., Koohi, E., & Meiboudi, H. (2014). Women's participation in environmental management and development Promotion Culture. *International Journal of Resistive Economics*, 49-61.
6. Kothari, C., & Garg, G. (2014). *Research Methodology: Methods and Techniques*. New Delhi: New Age International Publishers.
7. Kothari, C., & Garg, G. (2019). *Research Methodology, Method and Techniques*. New Delhi: New Age International Publishers.
8. Kumar, S., Smith, S., Fowler, G., & Velis, C. (2017). Challenges and opportunities associated with waste management in India. *Royal Society Open Science*.
9. Ramachandra, T., & Bachamanda, S. (2007). Environmental audit of Municipal Solid Waste Management . *International Journal of Environmental Technology and Management*, 369-391.
10. Rana, R. (2021, July 28). How Indore Went From Being The Garbage Capital To The Cleanest City In India. Retrieved from The logical Indian: <https://thelogicalindian.com/good->

- governance/cleanliness-swachh-bharat-indore-29929
11. Robinson, K., Saldanha, I., & McKoy, N. (2011). Development of A Framework for to Identify Research Gaps Systematic Reviews. *Journal of Epidemiology*, 1325-1330.
 12. Sharholly, M., Ahmad, K., Mahmood, G., & Trivedi, R. (2008). Municipal Solid Waste Management in Indian Cities—A Review. *Waste Management*, 459-467.
 13. Singh, S., Kunwar, N., & Sharma, A. (2018). Impact of Swachh Bharat Abhiyan in Indian Society. *International Journal of Home Science*, 215-219.
 14. Solid waste management. (2020). Retrieved from Smart city Indore: <https://smartcityindore.org/solid-waste/>
 15. Statistical Knowledge portal. (2022). Retrieved from [jmp.com](https://www.jmp.com): https://www.jmp.com/en_in/statistics-knowledge-portal/t-test/one-sample-t-test.html#:~:text=What%20is%20the%20one%2Dsample,different%20from%20a%20specific%20value
 16. (2017). Swachh Survekshan-2017. New Delhi: Ministry of Urban Development .
 17. Verma, A., & Bhonde, B. (2014). Optimisation of Municipal Solid Waste Management of Indore City Using GIS. *International Journal on Emerging Technologies*, 194-200.
 18. VidyadharDurgekar. (2016). Towards Sustainable Waste Management Through Technological Innovations, Effective Policy, Supply Chain Integration & Participation. *Procedia Environmental Sciences*, 140-149.