

Evaluating the Impact of Swachh Bharat Abhiyan in Reducing Environmental Deterioration and Transforming Practices: A Descriptive and Inferential Study

Naik Yaseera¹, Abhishek Swami²

¹PhD Scholar, Department of Environmental Sciences, Shri Venkateshwara University, Gajrula, Uttar Pradesh, India

²Assistant Professor, Department of Environmental Sciences, Shri Venkateshwara University, Gajrula, Uttar Pradesh, India

Abstract

The Swachh Bharat Abhiyan (SBA), which is one of India's most comprehensive national cleanliness and sanitation programs, was launched in 2014. The present study evaluates the impact of SBA in reducing environmental degradation and changing hygiene-related practices in higher education institutions. Data were analysed using non-parametric inferential tests, reliability metrics, and descriptive statistics using a standardised 32-item Likert-scale questionnaire. The descriptive results show that SBA activities are generally viewed favourably, especially regarding institutional support, awareness, and cleanliness standards. Strong internal consistency was demonstrated by reliability analyses, corroborated by high item–total correlations and Cronbach's alpha values. There were no statistically significant differences between colleges or gender groups, according to inferential analysis utilising the Kruskal-Wallis and Mann-Whitney U tests. This suggests that SBA efforts are implemented and perceived uniformly. The findings show the beneficial institutional effects of SBA while pointing out areas that need further policy support, like waste audits and enforcement systems.

Keywords: Swachh Bharat Abhiyan, Environmental Degradation, Awareness, Institutional Support.

1. Introduction

In developing nations, environmental degradation—which is represented by rising waste production, inadequate sanitation, and falling public hygiene standards—has long been a source of concern. In response, the Government of India started the Swachh Bharat Abhiyan in 2014 with the intention of encouraging cleanliness, doing away with open defecation, improving solid waste management, and changing people's behaviour.

Even if national-level accomplishments like toilet construction and open defecation-free (ODF) announcements have received a lot of attention, institutional-level evaluations are still crucial for comprehending long-term behavioural change, especially in higher education. From the viewpoint of college faculty respondents, this study assesses SBA's efficacy in halting environmental degradation and encouraging sustainable cleaning practices. Higher educational institutions greatly influence young

individuals, their social attitudes, civic engagement, and sustainable habits. Colleges are in a unique position to support the goals of national cleanliness campaigns since they are hubs for behavioural modelling and knowledge generation. The serious business of cleaning India requires significant behavioral changes, in-depth knowledge, and scientific competence, in addition to substantial investments in technology, research, and development.[1] The opinions of faculty members are crucial for assessing the long-term effects of such programs since they have a significant impact on student awareness, campus policy, and community outreach initiatives. This study aims to close the gap between the implementation of national policies at the grassroots level in academic settings and the integration of the Swachh Bharat Abhiyan's ideas into institutional culture, curriculum, and daily activities with the following objectives.

- To assess the perception of faculty regarding the effectiveness of SBA in reducing environmental degradation.
- To examine changes in hygiene and waste management practices within institutions.
- To evaluate the difference in perception regarding SBA initiatives across colleges in District Anantnag.

2. Materials and Methods

The current study uses the descriptive survey method as part of a quantitative research strategy. In the context of the Swachh Bharat Abhiyan (SBA) campaign, this strategy is appropriate for methodically gathering quantitative data from a population to evaluate the various dimensions related to institutional hygiene and cleanliness practices, waste management and audits, faculty involvement in SBA activities, awareness and training programs, and administrative and policy support. To evaluate these factors, a cross-sectional study was conducted, in which a semi-structured questionnaire comprising 32 Likert items aligned with the study objectives was designed following a relevant literature review [2][3][4]. The sample population for the present study comprises 50 faculty members from different degree colleges in the Anantnag district of Jammu and Kashmir. The participants were selected randomly after seeking proper consent. The respondents were informed about the study, and the identity of the participants was kept confidential. The data collected was ordinal (Likert scale), non parametric tests were employed. To investigate perceptual differences amongst faculty members from various colleges, the Kruskal–Wallis H test was employed. Gender-based responses were compared using the Mann–Whitney U test. To evaluate the relationship between gender and specific questionnaire items, Spearman's rank-order correlation was also computed. Benjamini–Hochberg correction, was used to account for the false discovery rate caused by multiple comparisons was taken into account. For all analyses, a p-value of less than 0.05 was deemed statistically significant.

Hypothesis:

H₀: There is no statistically significant difference in the perceptions of the participating colleges or gender groups regarding SBA's efficacy in halting environmental degradation and transforming practices.

3. Results

A total of 50 faculty members, representing ten degree colleges in the area, took part in the poll. The gender discrepancy in the sample—36 male and 14 female faculty—may somewhat restrict generalizability. The faculty generally agreed or strongly agreed with positive statements about cleanliness and the Swachh Bharat Abhiyan (SBA) initiatives in their colleges, according to the descriptive statistics, which revealed that the overall mean scores for most items ranged between 3.5 and 4.5 on a five-point Likert scale.

The highest mean ratings ($M = 4.2-4.5$) were obtained for items about visual cleanliness, hygiene facilities, and general campus upkeep (e.g., "Classrooms and campus areas are kept clean"), with relatively low standard deviations ($SD < 0.7$), indicating consistent replies. On the other hand, items about waste audits, policy enforcement, and awareness campaigns (such as Q9, Q13, and Q14) showed more variability ($SD > 1.0$), indicating that different institutions implemented and perceived these activities differently.

Reliability of the Instrument:

A Cronbach's Alpha reliability test was performed on each of the 32 Likert-type items to guarantee the questionnaire's internal consistency. Excellent dependability was demonstrated by the instrument's raw alpha of 0.8956 and standardised alpha of 0.9081 [5]. The average inter-item correlation ($r = 0.26$) showed sufficient item homogeneity while maintaining multidimensionality, falling within the acceptable range (0.20–0.40). The range of the corrected item-total correlations was 0.12 to 0.76 (Table 1.1). As a result of their great congruence with the overall construct of SBA perception, items Q31, Q32, and Q24 showed the strongest correlations with the total score ($r > 0.70$). Items Q2, Q5, Q6, and Q9, on the other hand, exhibited weaker item-total correlations ($r < 0.30$), indicating that they might be modified for clarity or relevance afterwards.

Table 1.1: Reliability Analysis of each Likert item:

Question	α (Cronbach Alpha)	std α	G6 (smc)	average_r	S/N	α SE	var.r	med.r
Q1	0.892	0.854	0.283	0.259	8.243	0.049	0.050	0.237
Q2	0.895	0.857	0.108	0.266	8.509	0.048	0.051	0.254
Q3	0.892	0.861	0.337	0.257	8.253	0.049	0.050	0.242
Q4	0.891	0.861	0.424	0.254	8.191	0.049	0.050	0.242
Q5	0.895	0.855	0.112	0.267	8.513	0.048	0.050	0.254
Q6	0.893	0.859	0.211	0.261	8.355	0.048	0.050	0.248
Q7	0.892	0.861	0.309	0.258	8.240	0.049	0.050	0.243
Q8	0.894	0.858	0.254	0.264	8.434	0.048	0.050	0.246
Q9	0.896	0.857	0.126	0.268	8.617	0.048	0.051	0.256
Q10	0.893	0.859	0.219	0.263	8.354	0.048	0.050	0.247
Q11	0.892	0.861	0.298	0.258	8.248	0.049	0.050	0.243
Q12	0.894	0.858	0.201	0.263	8.413	0.048	0.050	0.246
Q13	0.893	0.859	0.228	0.260	8.355	0.048	0.050	0.245
Q14	0.895	0.856	0.151	0.265	8.500	0.048	0.050	0.252
Q15	0.894	0.858	0.186	0.262	8.416	0.048	0.050	0.247
Q16	0.893	0.859	0.244	0.260	8.357	0.048	0.050	0.245
Q17	0.895	0.857	0.167	0.264	8.498	0.048	0.050	0.250
Q18	0.894	0.858	0.190	0.262	8.418	0.048	0.050	0.247
Q19	0.893	0.859	0.216	0.261	8.352	0.048	0.050	0.245
Q20	0.895	0.857	0.173	0.264	8.502	0.048	0.050	0.250
Q21	0.894	0.858	0.196	0.262	8.420	0.048	0.050	0.247
Q22	0.893	0.859	0.238	0.260	8.356	0.048	0.050	0.245
Q23	0.895	0.857	0.165	0.264	8.497	0.048	0.050	0.250

Q24	0.893	0.859	0.223	0.260	8.351	0.048	0.050	0.245
Q25	0.894	0.858	0.182	0.262	8.415	0.048	0.050	0.247
Q26	0.893	0.859	0.225	0.260	8.354	0.048	0.050	0.245
Q27	0.894	0.858	0.205	0.262	8.416	0.048	0.050	0.247
Q28	0.893	0.859	0.228	0.260	8.355	0.048	0.050	0.245
Q29	0.894	0.858	0.189	0.262	8.417	0.048	0.050	0.247
Q30	0.895	0.857	0.163	0.263	8.493	0.048	0.050	0.249
Q31	0.893	0.859	0.232	0.260	8.353	0.048	0.050	0.245
Q32	0.894	0.858	0.187	0.262	8.417	0.048	0.050	0.247

Cronbach's alpha was used to evaluate the questionnaire's reliability. Alpha values ranged from roughly 0.89 to 0.90 throughout the scale, indicating a consistently high overall dependability coefficient. These values fall within the "excellent" range and beyond the widely recognised threshold of 0.70, demonstrating the instrument's strong internal consistency. No single item caused a discernible drop in alpha when eliminated, according to the item-level reliability diagnostics. This implies that none of the items serves as outliers or sources of measurement noise, and that each item makes a significant contribution to the construct being measured. The scale's average inter-item correlation was roughly 0.26, indicating a modest and ideal degree of item homogeneity.

Descriptive Analysis:

Descriptive statistics, such as the mean and standard deviation, were calculated for each of the 32 items in order to assess the central tendencies, variability, and contribution of each item to the total scale. To evaluate each item's alignment with the scale's overall construct, adjusted item–total correlations were also computed. The item–total correlation values, standard deviations, and mean scores for each questionnaire item are shown in **Table 1.2**. These metrics aid in identifying the items that respondents most strongly supported, the degree of agreement or variation among responses, and the contribution of each item to internal consistency.

Table 1.2: Descriptive Analysis of each Likert Item

Item	Mean	SD	Item-Total Correlation
Q1	3.76	0.77	0.491
Q2	3.83	0.64	0.286
Q3	3.80	0.54	0.553
Q4	3.83	0.53	0.629
Q5	3.54	0.72	0.287
Q6	3.76	0.57	0.278
Q7	2.98	1.02	0.268
Q8	3.46	0.96	0.313
Q9	2.52	1.13	0.230
Q10	2.85	1.07	0.273
Q11	2.26	1.27	0.403
Q12	2.74	1.44	0.504

Q13	1.48	1.01	0.229
Q14	2.11	1.46	0.468
Q15	3.91	0.28	0.245
Q16	4.41	0.72	0.690
Q17	4.46	0.55	0.675
Q18	4.41	0.88	0.574
Q19	3.30	0.96	0.445
Q20	3.91	1.09	0.630
Q21	4.52	0.72	0.601
Q22	3.59	0.62	0.408
Q23	4.22	0.59	0.504
Q24	4.09	0.78	0.705
Q25	3.72	0.78	0.212
Q26	3.96	0.59	0.346
Q27	3.87	0.62	0.245
Q28	3.87	1.24	0.507
Q29	3.50	1.28	0.677
Q30	3.83	1.00	0.597
Q31	4.30	0.70	0.726
Q32	4.28	0.69	0.755

The majority of the items in Table 1.2 had mean values between 3.50 and 4.50, showing that respondents' opinions of the Swachh Bharat Abhiyan programs were largely favourable. The highest mean ratings were given to items like Q16 (M = 4.41), Q17 (M = 4.46), Q21 (M = 4.52), Q24 (M = 4.09), Q31 (M = 4.30), and Q32 (M = 4.28), indicating great agreement about institutional support, awareness, and cleanliness procedures. Conversely, items with lower means, such as Q9 (M = 2.52), Q11 (M = 2.26), Q12 (M = 2.74), and Q13 (M = 1.48), show areas where respondents thought there were gaps, especially in waste audits, policy enforcement, and awareness campaigns. Different degrees of response dispersion are displayed by the standard deviations. Items Q3, Q4, Q6, Q15, and Q23 showed low variability (SD < 0.7), suggesting that students' answers were consistent. On the other hand, Q8, Q9, Q11–Q14, Q20, Q28 and Q29 showed greater variability (SD > 1.0), indicating that students from different colleges had different experiences or levels of awareness.

The corrected item–total correlation values varied from 0.212 to 0.755, indicating good internal consistency. Strong correlations ($r > 0.60$) between items Q31, Q32, Q24, Q29, Q17, and Q16 and the overall score show that they accurately represent the underlying construct. Items Q5, Q6, Q7, Q9, Q13, Q15, Q25, and Q27 showed lower correlations ($r < 0.30$), suggesting that these items may be less reliable markers of the larger construct or may need improvement in subsequent iterations of the test. So, in addition to the high Cronbach's alpha values found, the item–total correlations generally confirm the questionnaire's reliability.

Inferential Analysis:

College effect analysis:

To investigate any variations in SBA perceptions among faculty from various colleges, a Kruskal–Wallis H test was utilised. A set of Kruskal–Wallis H tests was performed for each of the 32 questionnaire items in order to ascertain whether respondents from various colleges had substantially different opinions about the Swachh Bharat Abhiyan (SBA) issues. Because the data were ordinal (Likert scale) and did not satisfy the normalcy assumptions needed for parametric ANOVA, the Kruskal–Wallis test was chosen. The test statistics, p-values, and Benjamini-Hochberg adjusted p-values (p-adj), together with their accompanying interpretations, are shown in Table 1.3.

There was no statistically significant difference in the perceptions of the participating colleges across all 32 items (p-adj > 0.05 after the Benjamini–Hochberg correction). This implies that the SBA activities were viewed as comparatively uniform among institutions, suggesting consistency in the application of policies and levels of faculty knowledge.

Table 1.3: Showing College Effect Analysis for each Likert item:

Question	Test Type	Statistic	p-value	p-adj	Interpretation
Q1	Kruskal-Wallis	16.082	0.1875	1	No significant difference
Q2	Kruskal-Wallis	15.899	0.1959	1	No significant difference
Q3	Kruskal-Wallis	12.015	0.4445	1	No significant difference
Q4	Kruskal-Wallis	12.271	0.4241	1	No significant difference
Q5	Kruskal-Wallis	16.974	0.1506	1	No significant difference
Q6	Kruskal-Wallis	14.988	0.2421	1	No significant difference
Q7	Kruskal-Wallis	14.221	0.2868	1	No significant difference
Q8	Kruskal-Wallis	14.421	0.2747	1	No significant difference
Q9	Kruskal-Wallis	8.226	0.7672	1	No significant difference
Q10	Kruskal-Wallis	8.84	0.7166	1	No significant difference
Q11	Kruskal-Wallis	15.664	0.2071	1	No significant difference
Q12	Kruskal-Wallis	15.496	0.2154	1	No significant difference
Q13	Kruskal-Wallis	11.699	0.4701	1	No significant difference

Q14	Kruskal-Wallis	23.796	0.0217	0.6944	No significant difference
Q15	Kruskal-Wallis	8.036	0.7823	1	No significant difference
Q16	Kruskal-Wallis	10.258	0.5933	1	No significant difference
Q17	Kruskal-Wallis	9.993	0.6166	1	No significant difference
Q18	Kruskal-Wallis	13.379	0.3421	1	No significant difference
Q19	Kruskal-Wallis	18.766	0.0943	1	No significant difference
Q20	Kruskal-Wallis	11.318	0.5019	1	No significant difference
Q21	Kruskal-Wallis	23.563	0.0233	0.7456	No significant difference
Q22	Kruskal-Wallis	18.592	0.0989	1	No significant difference
Q23	Kruskal-Wallis	18.543	0.1002	1	No significant difference
Q24	Kruskal-Wallis	11.376	0.497	1	No significant difference
Q25	Kruskal-Wallis	11.269	0.506	1	No significant difference
Q26	Kruskal-Wallis	5.721	0.9295	1	No significant difference
Q27	Kruskal-Wallis	9.716	0.6409	1	No significant difference
Q28	Kruskal-Wallis	10.113	0.6061	1	No significant difference
Q29	Kruskal-Wallis	14.81	0.252	1	No significant difference
Q30	Kruskal-Wallis	17.365	0.1364	1	No significant difference
Q31	Kruskal-Wallis	13.277	0.3493	1	No significant difference
Q32	Kruskal-Wallis	19.64	0.0742	1	No significant difference

As all adjusted p-values (p_{adj}) were equal to or greater than .05, Table 1.3 results demonstrate that none of the 32 items showed statistically significant differences among colleges. A few items, like Q14 ($p = .0217$), Q21 ($p = .0233$), and Q32 ($p = .0742$), initially seemed close to significance at the unadjusted

level. Still, after applying the Benjamini–Hochberg correction, their significance did not hold, suggesting that these results were likely due to chance rather than significant group differences. Faculty from various colleges appear to have similar opinions about the implementation of the Swachh Bharat Abhiyan, as evidenced by the lack of significant variances across all questionnaire items. The regularity of institutional procedures, hygienic standards, awareness campaigns, or SBA-related initiatives carried out by the participating colleges may be reflected in this consistency. These results support the idea that respondents from different institutions interpreted and assessed the SBA-related statements in a generally similar way. They are consistent with the reliability results, which showed strong internal consistency across all items. The lack of variance amongst colleges suggests that the Swachh Bharat Abhiyan programs may have been executed widely and consistently, with no single institution exhibiting noticeably better or worse student performance.

Gender based comparison:

The Mann-Whitney U test was performed to see if male and female faculty had different opinions about the Swachh Bharat Abhiyan (SBA). When data are ordinal (Likert scale) and not normally distributed, this non-parametric test is suitable for comparing two independent groups. All of the 32 Likert items were tested. The U-values, p-values, corrected p-values (Benjamini–Hochberg correction), and the corresponding interpretations are shown in Table 1.4.

Table 1.4: Gender Effect Analysis:

Question	Test	Statistic	p-value	p-adj	Interpretation
Q1	Mann-Whitney U	183.5	0.8824	1	No Significant Difference (H0 not rejected)
Q2	Mann-Whitney U	154	0.1646	1	No Significant Difference (H0 not rejected)
Q3	Mann-Whitney U	170	0.6848	1	No Significant Difference (H0 not rejected)
Q4	Mann-Whitney U	165	0.5087	1	No Significant Difference (H0 not rejected)
Q5	Mann-Whitney U	177	0.9372	1	No Significant Difference (H0 not rejected)
Q6	Mann-Whitney U	202.5	0.3951	1	No Significant Difference (H0 not rejected)
Q7	Mann-Whitney U	167.5	0.7266	1	No Significant Difference (H0 not rejected)
Q8	Mann-Whitney U	152.5	0.3842	1	No Significant Difference (H0 not rejected)
Q9	Mann-Whitney U	242.5	0.0709	1	No Significant Difference (H0 not rejected)
Q10	Mann-Whitney U	202.5	0.5233	1	No Significant Difference (H0 not rejected)

Q11	Mann–Whitney U	180	1	1	No Significant Difference (H0 not rejected)
Q12	Mann–Whitney U	126	0.1107	1	No Significant Difference (H0 not rejected)
Q13	Mann–Whitney U	198	0.5002	1	No Significant Difference (H0 not rejected)
Q14	Mann–Whitney U	210	0.3475	1	No Significant Difference (H0 not rejected)
Q15	Mann–Whitney U	177	0.8915	1	No Significant Difference (H0 not rejected)
Q16	Mann–Whitney U	165	0.6591	1	No Significant Difference (H0 not rejected)
Q17	Mann–Whitney U	165	0.6591	1	No Significant Difference (H0 not rejected)
Q18	Mann–Whitney U	197	0.6164	1	No Significant Difference (H0 not rejected)
Q19	Mann–Whitney U	168	0.7105	1	No Significant Difference (H0 not rejected)
Q20	Mann–Whitney U	142.5	0.2602	1	No Significant Difference (H0 not rejected)
Q21	Mann–Whitney U	140	0.2208	1	No Significant Difference (H0 not rejected)
Q22	Mann–Whitney U	175	0.8867	1	No Significant Difference (H0 not rejected)
Q23	Mann–Whitney U	172	0.8171	1	No Significant Difference (H0 not rejected)
Q24	Mann–Whitney U	198	0.6195	1	No Significant Difference (H0 not rejected)
Q25	Mann–Whitney U	172	0.749	1	No Significant Difference (H0 not rejected)
Q26	Mann–Whitney U	130.5	0.122	1	No Significant Difference (H0 not rejected)
Q27	Mann–Whitney U	190	0.4739	1	No Significant Difference (H0 not rejected)
Q28	Mann–Whitney U	100	0.0174	0.5568	No Significant Difference (H0 not rejected)
Q29	Mann–Whitney U	170.5	0.7992	1	No Significant Difference (H0 not rejected)
Q30	Mann–Whitney U	139	0.2221	1	No Significant Difference (H0 not rejected)
Q31	Mann–Whitney U	190	0.7663	1	No Significant Difference (H0 not rejected)

Q32	Mann–Whitney U	172.5	0.8246	1	No Significant Difference (H0 not rejected)
-----	----------------	-------	--------	---	---

According to the findings, there were no statistically significant gender differences in any of the items ($p_{adj} > .05$). Item Q28 had a low unadjusted p-value ($p = 0.0174$), but after adjusting for multiple comparisons, the effect was no longer significant ($p_{adj} = 0.5568$). For this item, the apparent difference was therefore not statistically significant.

Male and female respondents showed comparable levels of agreement on other characteristics examined in the questionnaire, as evidenced by the p-values for all other items being significantly above the 0.05 threshold.

These results show that respondents' perceptions or experiences of the following are unaffected by gender:

1. Hygiene and Cleanliness Practices
2. Involvement in SBA initiatives
3. Perspectives on garbage management
4. Knowledge of institutional hygiene programs
5. Opinions regarding administrative assistance

The general consistency across the questions indicates that male and female respondents have similar opinions about the Swachh Bharat Abhiyan and that gender has little bearing on these opinions.

Discussion

The consistently high mean scores and robust internal reliability (Cronbach's $\alpha \approx 0.90$) demonstrate that faculty members across 10 colleges hold predominantly favourable views of the execution of the Swachh Bharat Mission, especially regarding campus cleanliness, hygiene infrastructure, and institutional support. These findings correspond with prior research at the block and institutional levels, indicating that SBA initiatives have markedly improved sanitation infrastructure, toilet accessibility, and observable cleaning outcomes in educational and community environments [6]. National-level assessments further validate these enhancements. The National Annual Rural Sanitation Survey (NARSS 2018–19) by the Ministry of Drinking Water and Sanitation confirmed extensive toilet accessibility and elevated usage rates in rural India, whereas the Ministry of Housing and Urban Affairs Annual Report (2020–21) recorded significant advancements in urban sanitation infrastructure and Open Defecation Free (ODF) certification.[7] Collectively, these assessments affirm that advancements in physical infrastructure and sanitation awareness have been substantial at the national level.

At the institutional level, the current findings show particularly substantial agreement on items relating to visible cleanliness and administrative support (e.g., Q16, Q17, Q21, Q31, Q32), implying that SBA-related practices have become internalised within campus surroundings. On the other hand, comparatively lower mean scores and more variation on items pertaining to waste audits, enforcement strategies, and awareness campaigns suggest that established accountability and monitoring systems might need to be strengthened even more. This tendency is consistent with recent environmental management assessments, which found that, while SBA infrastructure expansion has been significant, systematic waste segregation, audit compliance, and behavioral reinforcement remain unequal across institutions [8]. While Swachh Bharat greatly improved solid waste collection mechanisms, consistent waste segregation and processing procedures remain a difficulty in many contexts, according to Rashmi Kumari's analysis of SBA's influence on India's waste management system [9]. Kumari specifically points out that SBA's waste

management results differ by location and are frequently limited by deficiencies in stakeholder participation, systematic monitoring, and enforcement systems.

A common institutional culture of environmental stewardship and uniform policy execution are further supported by the absence of statistically significant disparities between colleges and gender groupings. This result is in line with studies that indicate organizational context frequently has a greater impact on environmental attitudes than demographic traits [7]. The uniformity of responses can be a result of SBA's centralized standards and benchmarking procedures, which encourage institutions to adopt similar cleanliness procedures. Although visible green campus measures seem to have been successfully institutionalized overall, the results highlight the necessity for ongoing attention to waste auditing systems, systematic enforcement, and ongoing awareness campaigns in order to guarantee long-term environmental sustainability. The shift from infrastructure-driven successes to long-lasting behavioural and governance-based environmental transformation is still a top objective for higher education institutions, according to recent research [7][8]. Recent scoping research on perceptions of SBA provides additional support. It reveals that while sanitation infrastructure and awareness have significantly improved at the national level, continuous efforts are needed to improve waste disposal behaviours, source segregation practices, and capacity building for long-term environmental change [10]. According to these studies, without supplementary policy enforcement and community involvement, the mission's success in increasing awareness and providing basic sanitation facilities does not inevitably convert into strong waste governance.

This study's lack of significant differences between gender groups and colleges further suggests a standardised approach to policy implementation and a shared institutional culture of environmental stewardship. This is consistent with studies that show organisational context frequently has a greater impact on environmental attitudes than demographic variations. Standardised cleaning procedures, common awareness campaigns, and centrally directed sanitation standards that have been distributed throughout educational institutions may be the cause of the consistency in teacher perceptions [8].

Conclusion:

The study concluded that the Swachh Bharat Abhiyan has effectively cultivated favorable perceptions, improved institutional cleaning practices, and advanced environmental responsibility in higher education institutions. Descriptive analysis indicated robust consensus on awareness and institutional support, but inferential analysis exhibited uniformity across colleges and genders. Despite the seemingly extensive and consistent implementation, enhancements in policy enforcement and waste auditing are essential to guarantee lasting environmental impact. SBA exhibits significant advancement in altering hygiene culture and mitigating environmental degradation at the institutional level, aligning with its overarching national goals of cleanliness and sustainable development.

References:

1. Pulakkat H. Swachh Bharat Abhiyaan: Why cleaning up India is serious business [Internet]. 2015. Available from: http://articles.economicstimes.indiatimes.com/20150303/news/59725490_1_swachhbharatabhiyaanindianoceanwater
2. Yadav K, Naidu NK, Sreeharshika D, Harikrishna B, Malhotra V. Study to assess knowledge, perception and practices regarding Swachh Bharat Abhiyan among rural people of Nalgonda district in Telangana state. *Int J Community Med Public Health*. 2018;5:3399–405. [Google Scholar]

3. Suthar P, Joshi N.K, Joshi V. Study on the perception of Swachh Bharat Abhiyan and attitude towards cleanliness among residents of Urban Jodhpur. *Journal of Family Medicine and Primary Care* 2019; 8 (10): 3136-3139.
4. Shamshad T, Shah MS, Khalique N, Ansari MA. Swachh Bharat Abhiyan: insights from students of a Central University. *Int J Community Med Public Health* 2021; 8:2853-61.
5. Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric Theory* (3rd ed.) by Jum Nunnally and Ira Bernstein, New York: McGraw-Hill, 1994, xxiv + 752 pp
6. S. Vairamani and Dr. K. Rajesh. (2025). An Evaluation of Swachh Bharat Abhiyan: A Case Study of Manikandam Block, Tiruchirappalli District. *International Journal of Management (IJM)*, 16(6), 209-213 doi: https://doi.org/10.34218/IJM_16_06_014
7. Ministry of Drinking Water and Sanitation (2019) National Annual Rural Sanitation Survey (NARSS) 2018-2019. Government of India. <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1567486®=3&lang=2#:~:text=The%20key%20findings%20of%20NARSS%202018%2D19%20are,have%20minimal%20litter%20and%20minimal%20stagnant%20water.>
8. Vicente-Molina, M.A., Fernández-Sáinz, A. and Izagirre-Olaizola, J. (2013) Environmental Knowledge and Other Variables Affecting Pro-Environmental Behaviour: Comparison of University Students from Emerging and Advanced Countries. *Journal of Cleaner Production*, 61, 130-138. <https://doi.org/10.1016/j.jclepro.2013.05.015>
9. Kumari, Rashmi. (2024). A Review of Swachh Bharat Abhiyan's Impact on India's Waste Management System. *IAHRW International Journal of Social Sciences Review*, 2024, 12(2), 252-256
10. Varshney, K., Shet, P., & Hoosenally, M. (2025). Cleaning Bharat (India): A Scoping Review of Perceptions Regarding How Swachh Bharat Can Continue to Improve Hygiene Across the Nation. *Hygiene*, 5(2), 17. <https://doi.org/10.3390/hygiene5020017>