

**"Sanitation Behaviour Change in Tribal Communities: Swachh Bharat Abhiyan & CLTS in Uttarakhand"**

<sup>1</sup>Dr. Urvashi Pandey <sup>2</sup>Dr. Kamruddin

**Abstract:**

This study assesses the sustainability of the Swachh Bharat Abhiyan (SBA) in selected districts. It focuses on Dehradun and Udham Singh Nagar to compare sanitation outcomes. The research highlights the gap between toilet construction and actual usage. A descriptive and comparative research design is adopted. Both primary data (field surveys, questionnaires) and secondary data are used. The study finds increased awareness about sanitation and hygiene among people. There is a noticeable shift in behavior regarding open defecation practices. However, consistent toilet usage remains a major challenge. Dehradun shows better performance in awareness and usage than Udham Singh Nagar. Issues like poor construction quality and lack of water supply affect sustainability. Socio-cultural beliefs and limited behavioral acceptance also play a role. The study concludes that long-term success depends on behavioral change and community participation.

**Keywords:** Swachh Bharat Abhiyan, Sanitation, Behavioral Change, Sustainability

**Introduction:**

The Swachh Bharat Abhiyan was initiated in 2014 with the aim of eradicating open defecation and enhancing the level of cleanliness in the country. Worldwide, there are 946 million people who practice open defecation, of which 75 percent are from rural areas, resulting in health hazards such as diarrhea and stunted growth in children. In India, open defecation has also caused a decline in the economy and has adversely impacted the lives of women in the country. The previous programs such as the Total Sanitation Campaign and Nirmal Bharat Abhiyan were focused on the construction of toilets but were unable to ensure their use. The Swachh Bharat Abhiyan has changed the focus to awareness and behavioral change along with the development of toilets. Even though the mission has enhanced the number of toilets in the country and many areas have been declared Open Defecation Free, the sustainability of the results remains a concern. In districts such as Dehradun and Udham Singh Nagar, differences in awareness, socio-cultural factors, and economic factors have impacted the results of the Swachh Bharat Abhiyan.

**Statement of the Problem:**

Although toilets have been constructed on a large scale with the implementation of SBA, the problem of open defecation continues to exist because of the "access-usage" gap. Various studies by Clasen et al. (2014), Spears et al. (2013), and Vyas et al. (2016) have shown the health hazards of open defecation, while Jenkins and Sugden (2006) have shown that the problem of open defecation cannot be solved merely by building toilets. Other studies by Jadhav et al. (2016) and Khanna and Das (2016) have shown the impact of open defecation on women's safety and dignity. In India, previous programs for building toilets were unsuccessful because of a "supply-driven" approach that did not take into account behavioral factors. Even with SBA, factors such as inadequate subsidies, poor quality of constructions, lack of awareness, and improper use of toilets for storing goods instead of for defecation are proving to be a problem. Thus, the problem of open defecation is not merely a problem of building toilets but also of their use.

**Research Gap:**

The existing literature has focused primarily on toilet coverage, policy success, and health outcomes of the sanitation programs. However, there has been little attention given to the sustainability of the sanitation practices post-implementation in terms of continued usage, behavioral adaptation, and socio-cultural effects. In addition, there has been a lack of district-level comparative analysis, especially in tribal and rural areas like Dehradun and Udham Singh Nagar. This research aims to bridge this research gap by assessing if the SBA's benefits are sustained over time.

**Objective of the Study:**

1. To determine the sustainability of Swachh Bharat Abhiyan in selected districts.

**Significance of the Study:**

The importance of this study lies in its ability to transcend the mere assessment of infrastructural development, focusing instead on sustainability, specifically on the sustainability of sanitation practices. It identifies the disconnect between toilet construction and actual use, and how this relates to behavioral, awareness, and socio-cultural factors. This study will be useful for policy-makers seeking to maximize the efficiency of their sanitation programs by focusing on sustainability, implementation strategies, and community participation. It will also be useful for sociologists seeking to understand its relationship with health, behavior, culture, and governance.

**Research Methodology:**

The study has employed a descriptive and comparative research design to analyze the sustainability of SBA in the selected districts of Dehradun and Udham Singh Nagar. Both primary and secondary data are employed for the purpose of the study. Primary data collection is done through structured questionnaires and surveys from the selected households who are the beneficiaries of the scheme. Secondary data collection is done from government reports, journals, and previous studies. In the present study, a purposive sampling technique has been employed to select the respondents from rural and tribal areas. Simple statistical tools are employed to analyze the data and draw conclusions from the patterns of usage of toilets and sustainability of the scheme. Pre- and post-adoption behavior of the people are also considered for the purpose of the study.

**Results and Findings:**

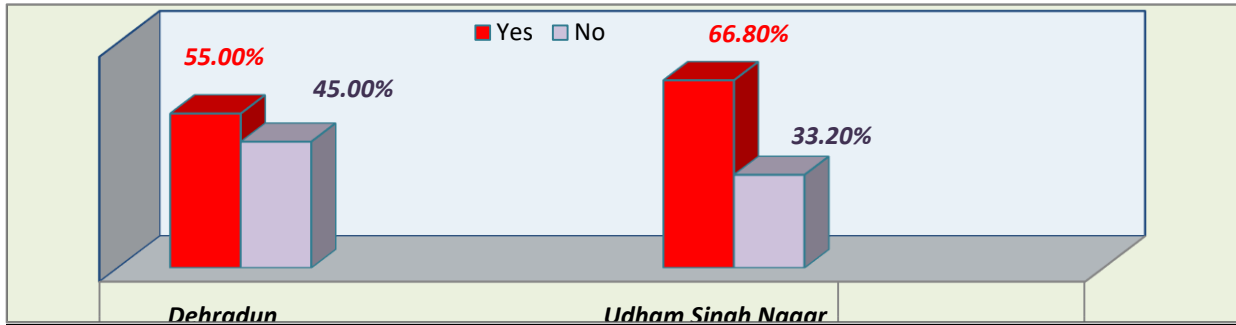
The pre adoption phase and post adoption phase revealed behavioral change where generation is awakening towards negative effects of open defecation.

**Findings-** Many states have achieved 100% ODF and IHHL coverage but still a major concentration is required for many states where real figure of not indicate 100% ODF.

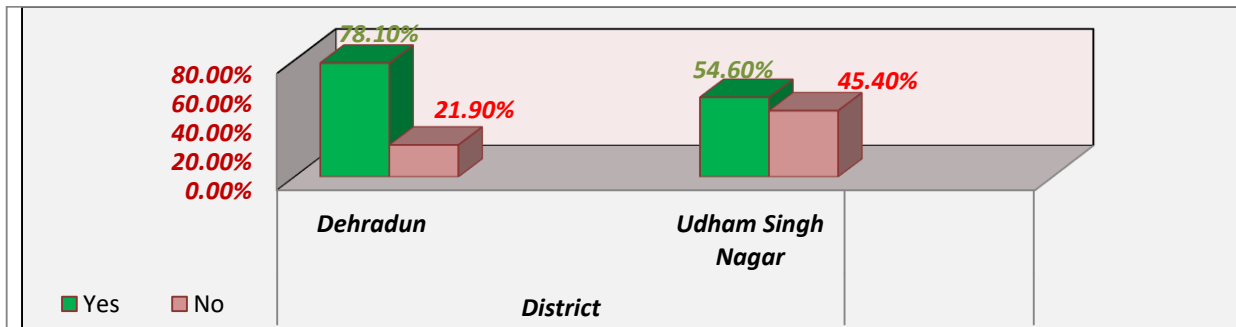
District	Do you think that this program needs to be continued and is efficient	
	Yes	No
Dehradun	55.00%	45.00%
Udham Singh Nagar	66.80%	33.20%

<sup>1</sup>Assistant Professor, Department of Sociology, M.B.Govt...P.G. College, Haldwani, Nainital (Uttarakhand)

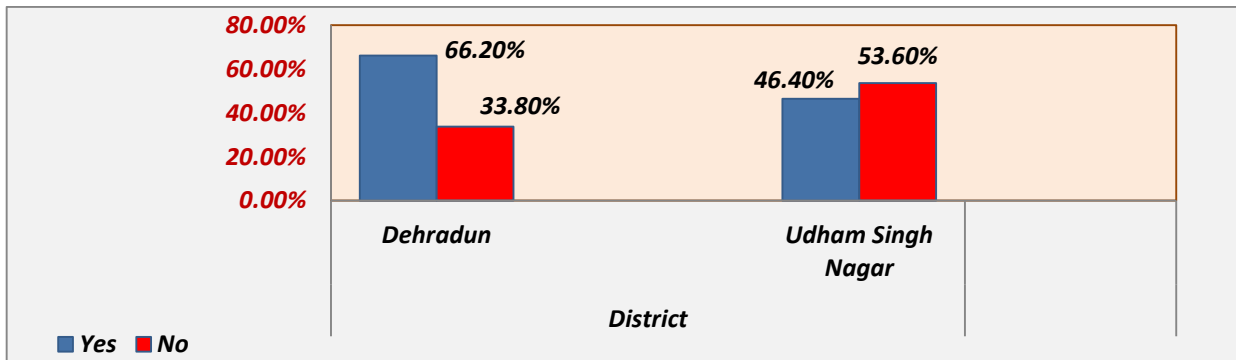
<sup>2</sup> Professor, Department of Sociology, M.B.Govt.P.G. College, Haldwani, Nainital (Uttarakhand)



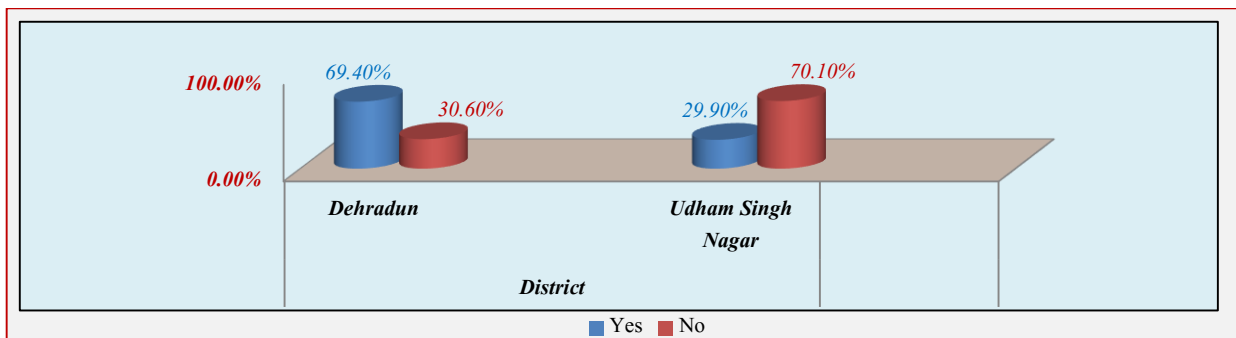
		Have beneficiaries have constructed their own toilets after awareness from SBM	
		Yes	No
District	Dehradun	78.10%	21.90%
	Udham Singh Nagar	54.60%	45.40%



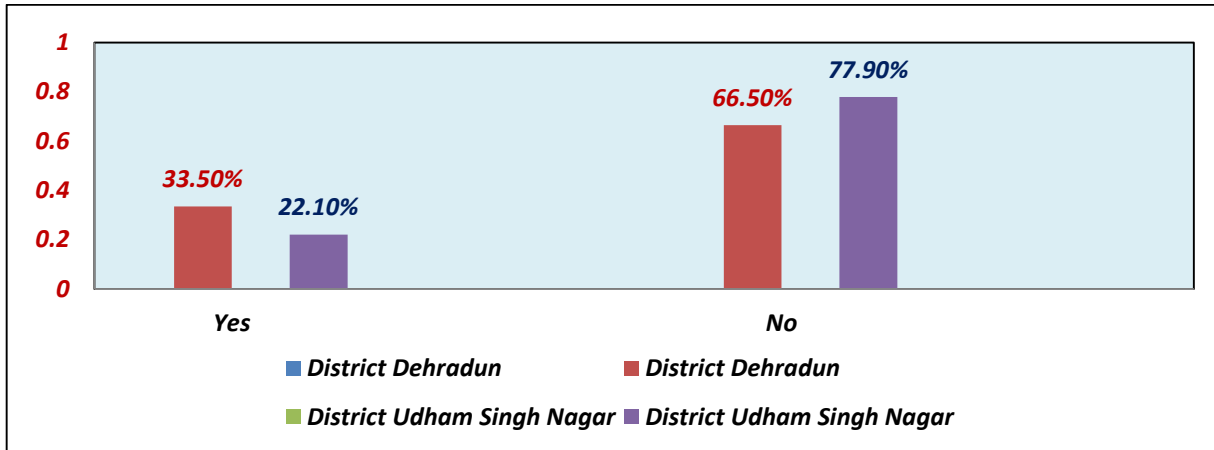
		Do you feel that SBM has fulfilled various social dimensions like social safety and social society specially in case of women	
		Yes	No
District	Dehradun	66.20%	33.80%
	Udham Singh Nagar	46.40%	53.60%



		How much do you feel that SBM have improved your daily chores of life	
		Yes	No
District	Dehradun	69.40%	30.60%
	Udham Singh Nagar	29.90%	70.10%



		Do SBM in any way help in economic empowerment	
		Yes	No
District	Dehradun	33.50%	66.50%
	Udham Singh Nagar	22.10%	77.90%



**Benefits of SBA**

Various new techniques should be utilized for effective disposal of waste and conduction of various programs for igniting respondents towards sanitation behavior.

The major aspect of the project was to investigate the sustainability of the SBM. In this reference analysis was done at two levels.

- Pre- adoption phase
- Post-adoption phase

**Estimation of Sustainability through TAM Model:**

**Instrument Reliability:**

The reliability analysis was conducted in order to check the internal validity and consistency of the items used for each factors by using SPSS as the analysis tool. The result of Reliability Analysis is presented in Table 2. Cronbach’s alpha scores were all above 0.8.

Factor	Item	Cronbach’s alpha
Perceived Usefulness (PU)	4	0.88
Perceived Ease of Use (PEOU)	3	0.87
Attitude(AT)	4	0.89
BehavioralIntention(BI)	3	0.82

**Correlation Analysis:**

After conducting the Reliability Analysis, the correlation coefficients were determined to discover the relationships between four factors and investigate the hypotheses of the research model (Table 3). The analysis tool was SPSS.

	Factor	PEOU	PU	AT	BI
PEOU	Pearson Correlation	01	0.539**	0.637**	0.495**
PU	Pearson Correlation	0.539**	01	0.727**	0.764**
AT	Pearson Correlation	0.637**	0.727**	01	0.692
BI	Pearson Correlation	0.495**	0.764**	0.692**	01

\*\*Correlation is significant at the 0.01 level (2-tailed).

**Table 3 reflects positive and significant correlations between the PEOU, PU, AT and BI are positive and significant. This confirms the original hypothesis made concerning the Technology Acceptance Model.**

Regression analysis was conducted to test the H1 and H2.

**H1:** PEOU has positive effect on Attitude towards Toilet use

**H2:** PU has positive effect on Attitude towards Toilet use

**Table 4 summarizes the result of regression shows below.**

Table- Predictors: PU &PEOU → Dependent Variable: AT

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.783 <sup>a</sup>	.613	.609	.50840

**Coefficient:**

Model	Unstandardized coefficient		Standardized Coefficient	T	Sig
	B	Std. Error	Beta		
(Content) PU	.284	.187		1.519	.130
	.327	.048	.346	6.763	.000
	.595	.056	.540	10.542	.000

As we can see from the table 4, the value of R square indicates that the two predictors (PU, PEOU) explained 61.3% of the variation in Attitudes to use. It means that this model is a rational model, although there are other unknown factors may impact on the users’ attitude to use toilets which are not accounted in this model. The standardized coefficients (β) shows that Perceived Usefulness (β = 0.540) have larger impact than the Perceived Ease of Use (β = 0.346). Also, the Sig indicates that both of the predictors had a significant and positive impact on AT scores at the 0.001 level. Subsequently, a linear regression model was also used to test H3 and H5 which are the impact of Perceived Usefulness and Attitude on users’ behavioral intention towards toilet usage.

**Table 5: Predictors: PU &AT → Dependent Variable: BI**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.789 <sup>a</sup>	.623	.619	.49837

a. Predictors: (Constant ), AT, PU

Model	Unstandardized coefficient		Standardized Coefficient	t	Sig
	B	Std. Error	Beta		
(Content)	.313	.178		1.755	.081
PU	.605	.068	.553	8.931	.000
	.288	.062	.290	4.673	.000

**a. Dependent Variable: BI**

As appears in Table 5, it confirmed the H3 that Perceived Usefulness (PU) had a significant effect on Behavioral Intention (BI), with  $\beta = 0.553$ , Sig = 0. While Attitude toward (AT) had a positive influence on dependent variable BI, with  $\beta = 0.290$ , Sig = 0. Finally, another linear regression model was determined to investigate the influence of Perceived Ease of Use (PEOU) on Perceived Usefulness (PU) (see Table 6 blow).  
 Predictors: PEOU → Dependent Variable: PU

**Model Summary:**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.539 <sup>a</sup>	.623	.619	.49837

**b. Predictors: (Contant ), PEOU**

Model	Unstandardized coefficient		Standardized Coefficient	t	Sig
	B	Std. Error	Beta		
(Content) PEOU	.313	.178		1.755	.081
	.605	.068	.553	8.931	.000
	.288	.062	.290	4.673	.000

**b. Dependent Variable: PU**

As seen, the R Square value (0.291) is low, thus indicating that PEOU explained only 29.1% of the variation in PU. Based on Standardized coefficient value ( $\beta = 0.290$ ), Perceived Ease of Use (PEOU) had significant impact on Perceived Usefulness (PU).

**Summary of hypothesis testing:**

Hypothesis	Specification	Results
H1	PEOU has positive impact on attitude	( $\beta = 0.346, p < 0.0001$ )
H2	PU has positive impact on attitude	( $\beta = 0.54, p < 0.0001$ )
H3	PU has positive influence on BI	( $\beta = 0.553, p < 0.001$ )
H4	PEOU has positive impact on PU	( $\beta = 0.559, p < 0.001$ )
H5	Attitude has positive impact on BI	( $\beta = 0.29, p < 0.001$ )

The results of linear regression analyses confirmed the five hypotheses. Perceived Usefulness (PU) had the strongest impact on Behavioral Intention (BI), followed by the influence of Perceived Usefulness (PU) on Attitude toward (AT) using Toilets. Perceived Ease of Use (PEOU) also had positive impact on users Attitude toward (AT) toilet usage, although the magnitude of the effect was moderate. Finally, Users' Attitude had small influence on their Behavioral Intention (BI).

**Conclusion:**

The study concludes that Swachh Bharat Abhiyan has contributed significantly to improving awareness and construction of toilets in selected districts. There is a behavioral change observed, as people are becoming aware of the ill effects of open defecation. However, sustainability is a major concern, as not all toilets are being used by people. In Dehradun, better results are observed in terms of awareness, satisfaction, social, and daily life improvements compared to Udham Singh Nagar districts. Inadequate funding, poor quality of construction, lack of water facilities, and acceptance of behavioral changes are affecting the sustainability of the Swachh Bharat Abhiyan program.

The statistical analysis reveals that PU and PEOU are the most important factors in determining the people's attitude and intention to use the toilet. In addition, the usefulness is more influential in determining the people's attitude compared to ease of use. The Swachh Bharat Abhiyan program is successful in terms of infrastructural development, and more needs to be done to ensure the sustainability of the program.

**Suggestions**

1. Increase the amount of subsidy for better construction of toilets.
2. Behavioral changes through awareness.
3. Regular water supply and maintenance of toilets.
4. Strengthen community participation and local involvement.
5. Monitoring for actual use of toilets rather than construction.
6. Give special focus to areas that are performing poorly.
7. More user-friendly and practical toilets.

**Reference**

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