



# ASSOCIATION OF SOCIO-ECONOMIC CHARACTERISTICS OF HOUSEHOLDS AND ACCESS TO WATER, SANITATION AND HYGIENE FACILITIES: AN ANALYSIS BASED ON NATIONAL SAMPLE SURVEY 2018

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Article DOI: <https://doi.org/10.36713/epra9680>  
DOI No: 10.36713/epra9680

## ABSTRACT

*Using the 76th round of the National Sample Survey (NSS) Drinking Water, Sanitation, Hygiene, and Housing Condition survey, this article demonstrates that there is significant interstate disparity in access to individual and combined WASH facilities. According to the findings, the odds of a household having access to WASH facilities increase if it is headed by a female and the household head has a higher level of education.*

## 1. INTRODUCTION

According to official reports, India has seen a tremendous improvement in the provision of WASH facilities as a result of significant investments and policies like the Swachh Bharat Mission (SBM) and the National Rural Drinking Water Program (NRDWP) (Iyer, 2019; UNICEF India, 2019). In fact, on the 150th anniversary of Mahatma Gandhi's birth in 2019, India declared itself to be open defecation-free (The Hindu, 2019). India's impressive progress is also highlighted in the recent Joint Monitoring Programme report (2020), which states that between 2015 and 2020, India increased basic sanitation coverage by 15 percentage points while decreasing open defecation by 14 percentage points. However, according to the same report, only 46% of India's population has access to safely managed sanitation services. It also states that, while open defecation has decreased significantly across all Indian states and union territories, regional inequality in open defecation persists. Furthermore, according to the report, approximately 38% of the population does not have access to basic hygiene services, and approximately 34% of the population does not have access to a water source on-premises. Despite huge investments and claims of the government, several articles and scholars working in the field have expressed concern about the prevailing WASH situation in the nation (Gupta et al., 2020; Hindustan Times 2021; Down To Earth 2021). The 76th round of the National Sample Survey further added fuel to these fears.

Clean water, sanitation, and hygiene are critical for human health, well-being, and development. According to studies, a lack of proper WASH facilities is responsible for approximately 90% of diarrhea deaths in India

(Gaonconnection, 2021). Inadequate access to WASH is estimated to cost India a total of 53.8 billion dollars, accounting for a 48-dollar per capita annual loss in 2006 (WSP, 2011). From a gender perspective, water and sanitation provision has been argued as a means of reducing violence against women and empowering them (Sommer et al., 2014; Dickin et al., 2021). Because of its sheer importance, the United Nations General Assembly explicitly recognized it as a fundamental human right (Russell & Azzopardi, 2019), and targets 6.1 and 6.2 of the Sustainable Development Goals have been designated for it (Dickin et al., 2020).

Given the current state of COVID-19, it is becoming increasingly important to maintain good hygiene and appropriate WASH practices (Das et al., 2020; World Bank, 2020.) As a result, from a policy standpoint, assessing the country's WASH status becomes critical. The following article provides an overview of the household WASH facilities. Furthermore, an attempt has been made to comprehend the impact of socioeconomic characteristics on household WASH practices.

## 2. EXAMINING INTERSTATE DISPARITIES IN HOUSEHOLDS WASH STATUS

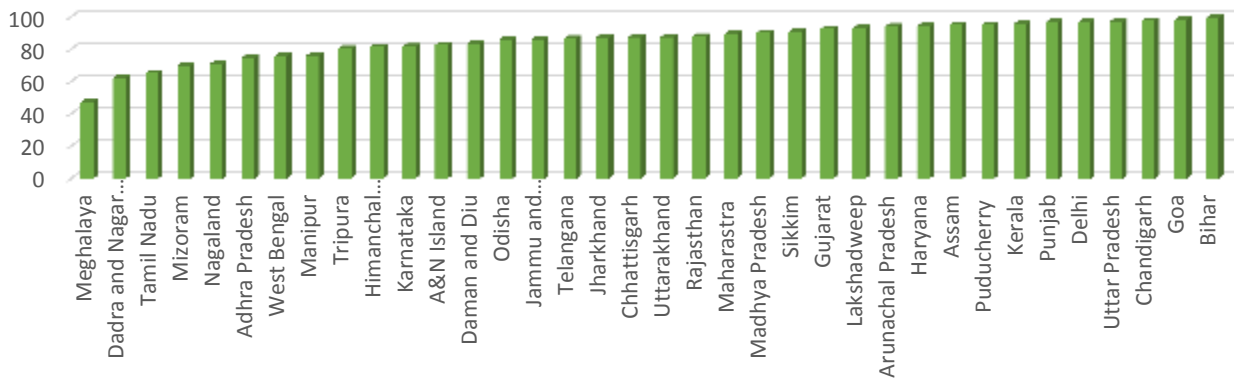
The data used here comes from the 76<sup>th</sup> round of Drinking Water, Sanitation, Hygiene and Housing Condition survey conducted by National Sample Survey (NSS) in the year 2018. Following the study of Ahmed et al., (2021) basic water, sanitation and hygiene facilities at household level were identified as follows:



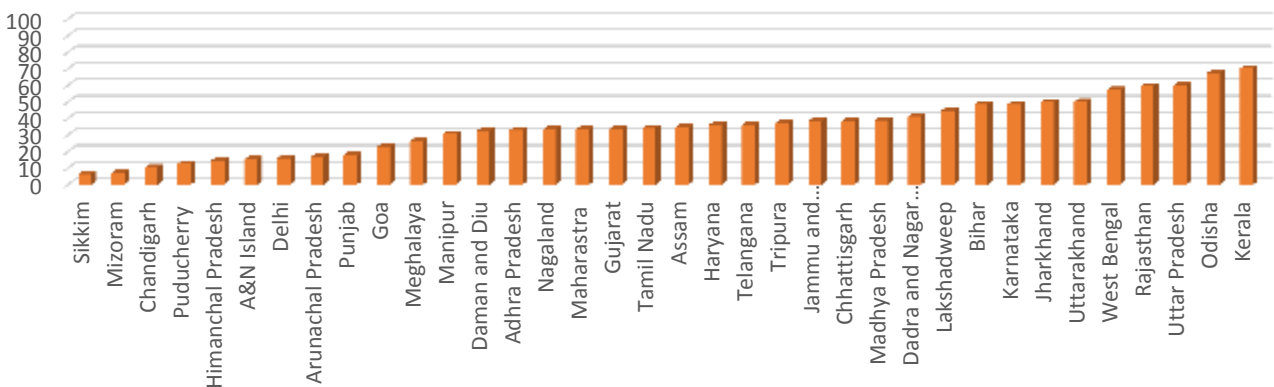
- **Basic Water:** Households have access to improved water sources as defined by WHO, as long as the round-trip collection time is less than 30 minutes.
- **Basic Sanitation:** Households have exclusive access to either of the following sanitation facilities, i.e., flush/pour-flush to: piped sewer system, septic tank, ventilated improved latrines, pit latrine with slab, and composite latrine.
- **Basic Hygiene:** Members of the household regularly wash their hands with water and soap/detergent after defecation.
- **Combined WASH:** Percentage of households that have access to basic water, sanitation and hygiene facilities.

Figures 1–3 show that coverage of basic WASH facilities at the household level varies significantly across Indian states. According to data, the prevalence of basic water facilities is highest in Meghalaya and lowest in Bihar. Sikkim has the highest proportion of households with basic sanitation, while Kerala has the lowest. Basic hygiene was highest in the state of Chandigarh and lowest in Tamil Nadu. In terms of combined WASH facilities, Figure 4 clearly demonstrates the country's stark interstate disparity. The state of Meghalaya had the highest overall combined WASH facility coverage, while Bihar had the lowest.

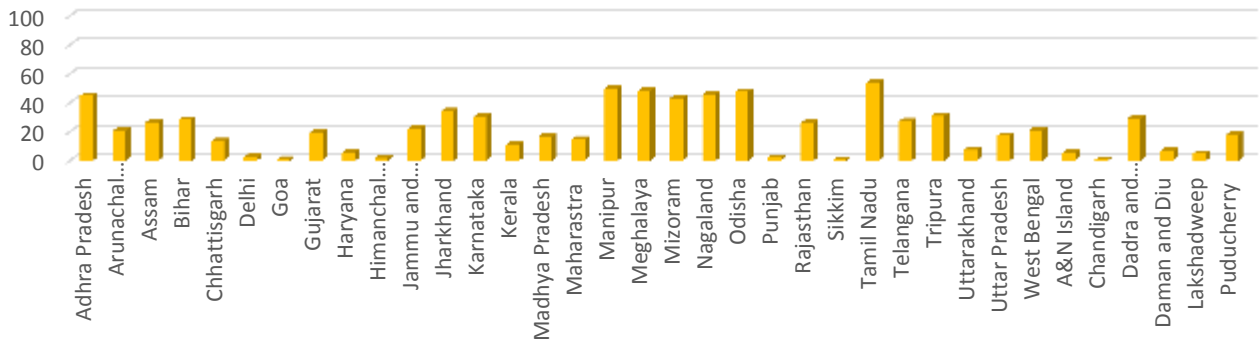
**Fig 1: Percentage of household not having access to basic water**



**Fig 2: Percentage of household not having access to basic sanitation**

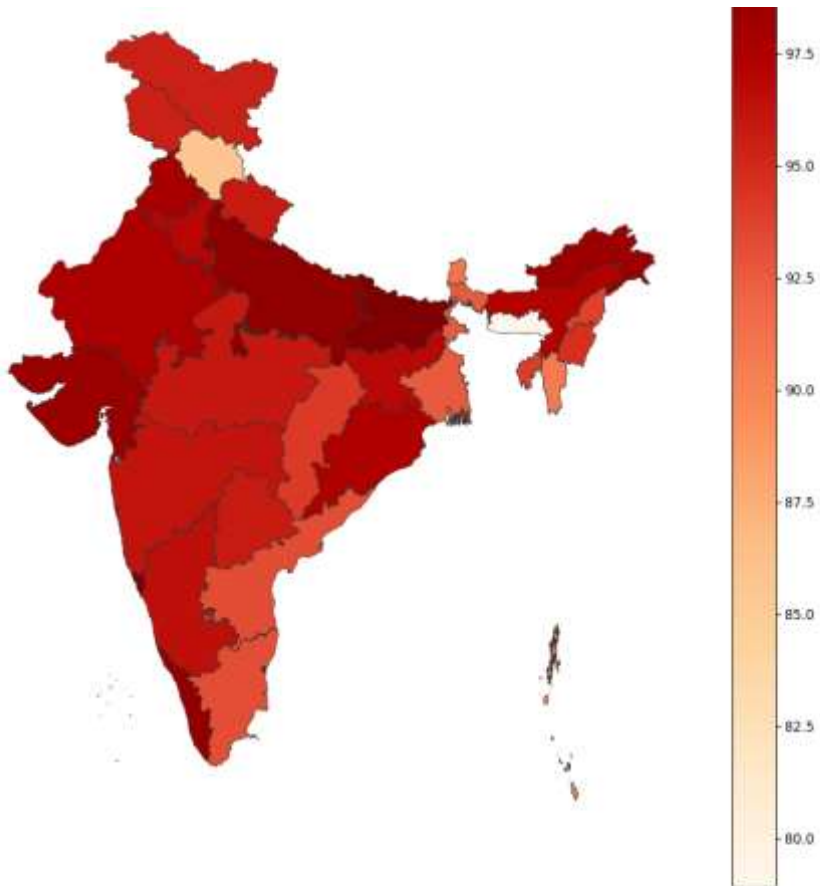


**Fig 3: Percentage of household not having access to basic hygiene**



Source: Author calculation from NSS

**Figure 4: Households not having access to combined WASH facilities**



Source: Author construction in Python



### 3. HOUSEHOLDS' SOCIO-ECONOMIC CHARACTERISTICS AND WASH STATUS

Table 1 shows the relationship between socioeconomic characteristics and the accessibility of individual and combined WASH facilities. As can be seen, having a higher number of working members in the household is positively associated with access to basic water facilities. The likelihood of having basic sanitation increases with household income level. In addition, the education level of the household head and belonging to the so-called upper caste increase the

likelihood of having basic sanitation facilities. Education of the household head, overall education level of the households, increase in income, belonging to the so-called upper caste, and living in urban areas all increases the odds of having accessibility to basic hygiene. The likelihood of having combined WASH facilities increases as the household head's education level rises. It is also worth noting that male-headed households are less likely than female-headed households to have individual and combined WASH facilities.

**Table 1: Logistic Regression result of socio-economic characteristic and household's access to basic water, sanitation and hygiene facilities.**

	Dependent Variables			
	Access to basic water	Access to basic sanitation	Access to basic hygiene	Access to combined WASH
	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
Gender of household head	0.64	0.42	0.61	0.38
Education level of household head	0.97	1.04	1.04	1.01
Number of working members	1.09	0.93	0.88	0.91
Highest level of education of household	0.34	2.07	2.67	0.46
Income (MPCE)	1	1	1	1
Residency	0.69	0.85	1.31	0.26
Caste	0.95	1.02	1.08	0.95

Source: Author calculation in STATA

### 4. CONCLUSION

According to the findings, there are significant interstate disparities in access to basic WASH facilities. Overall, the state of Bihar has the lowest coverage of combined WASH facilities. According to the study, households headed by females and with higher education attainment of the household head have a higher likelihood of having access to combined WASH facilities. Only access to basic hygiene facilities appears to be affected by caste, income, and place of residence. Access to basic sanitation facilities was also found to be influenced by caste. However, when it comes to combined WASH status, being of a higher caste, having a higher income, or even residing in urban areas did not increase the chances of having access to it.

This implies that focusing solely on disadvantaged households, i.e., those from rural areas, of the so-called lower caste, with low income and education, will not result in an increase in access to WASH facilities. With the Covid-19 pandemic emphasising the importance of WASH facilities, a policy intervention spanning socioeconomic backgrounds is critical if India is to improve its people's health, well-being, and development.

#### Notes:

- ❖ For this study the following codes have been used:
  - i) 0-Female-headed households; 1- Male-headed households
  - ii) 1-Rural; 2-Urban
  - iii) Social group: 1-ST; 2-SC; 3-OBC;9-Others

- iv) 0- Not having access to basic water; 1-otherwise
- v) 0- Not having access to basic sanitation; 1-otherwise
- vi) 0- Not having access to basic hygiene; 1-otherwise
- vii) 0- Not having access to combined WASH; 1-otherwise

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