



SOCIAL INEQUALITIES IN HOUSEHOLD INFRASTRUCTURE DEVELOPMENT: A CASE STUDY OF SOLAPUR DISTRICT IN MAHARASHTRA

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ABSTRACT

The present study examines the social inequalities in household infrastructures development of the selected social groups in Solapur district, Maharashtra state in India. Adverse effects of inadequate household infrastructures facilities on people efficiency, standard of living as well as human development. Infrastructure makes life superior, economies more competitive, and while being constructed, offers jobs to the value chain. However, infrastructure also massively consumes cement and increases emissions. It is one of the most gender-unequal labor markets. Infrastructure entails risks of non-prior or informed consent by the populations directly affected. It has had a consistently difficult relationship with human life, taxation, transparency, and social and environmental safeguards and norms. Good housing, sanitation facility, drinking water, electricity, etc. are the basic household infrastructural needs of each and every people for sustain their life.

KEYWORDS: Household Infrastructure, Household Infrastructure Index, Social Inequality, Standard of living.

1. INTRODUCTION

Infrastructure plays a vital role for not just the country's economic growth but also its progress in human development. Rural areas account for a higher segment of the geographical area in India. Census 2011 reports that there are 6.4 lakh villages in India, which living quarters more than two-third of the country's population. Providing of basic household infrastructure facilities for this large segment of the population spread across 3.28 million square kilometer of the country's geographical area has been a major challenge. The housing conditions in rural India have not better. As per the Census 2011, nearly 20.7% of the total 20.6 crore occupied rural houses are with thatched roofs. These houses are not safe for living, highly vulnerable to rainfall, wind blow, fire and many other accidents. [1]

Supply of safe drinking water to every household should be one of the basic policy priorities. However, the Census 2011 reports a mere 30.0% of rural area being covered with tapped water supply. The poor sanitation facilities in the rural belt have been an equally challenging issue for the government. In the Context of India, there are 69.3% of rural households still resorts to open defecation. Hence,

provisioning of safe drinking water and sanitation facilities in rural areas need to be a first priority for the government now. [2]

Household Infrastructure crucial aspects of Human life, the human wellbeing and decent standard of living depend on various household infrastructures i.e. housing condition, bathing and drainage facility, safe drinking water, access of electricity as well as cooking fuel, etc. Also, the household infrastructures development is one of the major indicators of the Human Development and it have positive impact on overall development process. [3]

2. OBJECTIVES

The major objective of this study is to find out (i) the social inequalities in Household Infrastructures Development in study area of Satara district (ii) To assessment of the Household Infrastructures Development Index of selected social groups in Solapur district (iii) To suggest measures for improvement if necessary of the study area.



3. RESEARCH METHODOLOGY AND DATA BASE

This present study depends on multistage proportional sampling methods. Methodology of sample selection of the study area is as follow-

i) Data Source

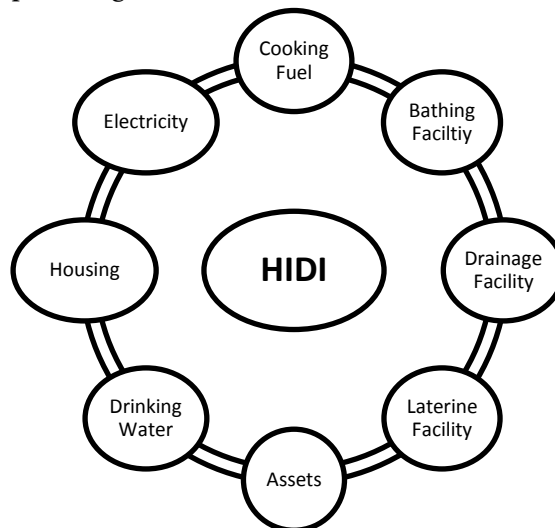
This study is purely based on primary data; the data collected through structured schedule and filed observations from selected blocks and villages in Solapur district. Duration of the primary data is limited to the period of 2018.

ii) Selection of Samples

This present study Solapur district have selected purposefully. Total 5 block/tehsils out of 11 have selected by cluster sampling method. On the

basis of cluster sampling approach the total blocks of Solapur district were grouped in to two clusters, i.e. border and middle. As well second step of selection of sample villages total 26 villages out of 608 villages in selected five sample blocks have selected through the proportional sampling method. Also, last step of the selection of respondent household, the researchers have selected total 415 household includes 170 Scheduled Caste, 150 Vimukta Jati/Nomadic Tribes (VJ/NT) and 95 Minority social groups household through proportionate sampling method in Solapur district.

- Selection of sample Villages and Households:



$$n = \frac{N}{1+N(e)^2} \quad \text{----- (1) [4]}$$

Whereas;

- n = Sample size required of Villages/Households
- N = Number of Village /households for particular community
- e = Error

• Statistical Analysis and Index Calculation:

The present research study focused on social inequalities in household infrastructures development through modified Household Infrastructure Index of selected social groups in Solapur district of Maharashtra. Calculation of the HIDI of the selected social groups is divided into two steps first is calculate indicator index and second calculate HIDI through the indicators index. Calculation of the HIDI of selected social groups is as;

• About Indictors of HIDI:

Household Infrastructures Index is made by eight indicators it divided into two categories i.e. six

positive and two negative respectively. Here, the positive indicators viz. Pucca house, access of electricity, latrine facility, availability of safe drinking water, bathing and drainage facility, both which have positive impact on human development. Similarly, the two negative indicators that are household using firewood and household with No Assets, which have negative impact on human development. Both, positive and negative indicator essential to each household as well as individual to improve their standard of living and it is also important measures of the poverty. To avoid absolute Zero or One as an index value; minimum value taken 10% less than the



observed minimum value and maximum value should [5]
be taken 10% more than observed maximum value.

$$A) \text{ Positive Indicator Index} = \frac{(Actual\ Value - Minimum\ Value)}{(Maximum\ Value - Minimum\ Value)} \text{ --- (2)}$$

$$B) \text{ Negative Indicator Index} = \frac{(Maximum\ Value - Actual\ Value)}{(Maximum\ Value - Minimum\ Value)} \text{ --- (3)}$$

C) Household Infrastructure Index =

$$\frac{(I_{house} + I_{electricity} + I_{cooking\ fuel} + I_{bathing} + I_{drainage} + I_{Latrine} + I_{Assets} + I_{drinking\ water})}{1/8} \text{ --- (4)}$$

Whereas; (*I*= Index of)

- | | | | | | |
|---------------------------------|---|------------------------------|-----------------------------------|---|---|
| <i>I_{house}</i> | = | <i>Pucca house</i> | <i>I_{drainage}</i> | = | <i>Drainage facility</i> |
| <i>I_{electricity}</i> | = | <i>Access of electricity</i> | <i>I_{Latrine}</i> | = | <i>Latrine Facility</i> |
| <i>I_{cooking Fuel}</i> | = | <i>Use of Firewood</i> | <i>I_{Assets}</i> | = | <i>Household with No assets</i> |
| <i>I_{bathing}</i> | = | <i>Bathing Facility</i> | <i>I_{drinking water}</i> | = | <i>Safe drinking water (30 Minutes)</i> |

4. DATA ANALYSIS AND RESULT

The present study detailed analyzed various indicators of the household infrastructure, which have

positive impact on human development. Also it study highlighting status, social inequalities in household infrastructure in Solapur district as follow-

Table - 01: Social Group wise Housing Condition of Solapur District

Type	Frequency			Percentage		
	SC	VJ/NT	MTY	SC	VJ/NT	MTY
Pucca	84	81	64	49.4	54.0	67.4
Kuccha	85	66	31	50.0	44.0	32.6
Other	01	03	00	0.6	2.0	0.0
Total	170	150	95	100.0	100.0	100.0

Source: Felid Survey/2018 (Note: SC: Scheduled Caste, VJ/NT: Vimukta Jati/Nomadic Tribes, MTY: Minority)

Table -01 observed that that the housing condition of selected social groups in the Solapur district. The situation of the household having Pucca house of the Minority social group was highest that is 67.4% and lowest was SC that is 49.4%. Whereas, the VJ/NT social group was recorded 54.0% in the

Solapur district in 2018. While, the condition of household having Kuccha house of the SC cast was reported 50.0%, it was higher than the VJ/NT (44.0%) and Minority (32.6%) social groups in Solapur district in 2018.

Table - 02: Social Group wise Household Using Drainage facility of Solapur District

Use	Frequency			Percentage		
	SC	VJ/NT	MTY	SC	VJ/NT	MTY
Yes	58	22	62	34.1	14.7	65.3
No	112	128	33	65.9	85.3	34.7
Total	170	150	95	100.0	100.0	100.0

Source: Felid Survey/2018 (Note: SC: Scheduled Caste, VJ/NT: Vimukta Jati/Nomadic Tribes, MTY: Minority)

Table -02 reveals that that the selected social groups wise condition of household using draining facility in the Solapur district. The household using draining facility of the Minority social group was highest 65.3% and lowest VJ/NT that is only 14.7%.

But, the SC social group was recorded 34.1% in the Solapur district in 2018. While, the household not using drainage facility of the VJ/NT was reported highest 85.3% and Minority social group was counted 34.7% in Solapur district in 2018.

**Table - 03: Social Group wise Household Using Latrine facility of Solapur District**

Use	Frequency			Percentage		
	SC	VJ/NT	MTY	SC	VJ/NT	MTY
Yes	141	95	77	82.9	63.3	81.1
No	29	55	18	17.1	36.7	18.9
Total	170	150	95	100.0	100.0	100.0

Source: Felid Survey/2018 (Note: SC: Scheduled Caste, VJ/NT: Vimukta Jati/Nomadic Tribes, MTY: Minority)

Table -03 observed that that the selected social groups wise household using latrine facility in the Solapur district. The household using latrine facility of the SC was highest that is 82.9% and lowest VJ/NT that is 63.3% respectively. Where, the household using latrine facility of Minority social

group was noted 81.1% at second rank in the Solapur district. Although, the household not using latrine facility of the VJ/NT was stated highest that is 36.7% as well as SC and Minority social group were counted nearby that are 17.1% and 18.9% respectively in Solapur district in 2018.

Table - 04: Social Group wise Household Using Bathing Facility of Solapur District

Use	Frequency			Percentage		
	SC	VJ/NT	MTY	SC	VJ/NT	MTY
Yes	139	78	81	81.8	52.0	85.3
No	31	72	14	18.2	48.0	14.7
Total	170	150	95	100.0	100.0	100.0

Source: Felid Survey/2018 (Note: SC: Scheduled Caste, VJ/NT: Vimukta Jati/Nomadic Tribes, MTY: Minority)

Table -04 shows that that the selected social groups wise household using bathing facility in the Solapur district. Household using bathing facility of Minority social group was highest 85.3% and lowest VJ/NT that is 52.0% respectively. As well household using bathing facility, the SC was recorded 81.8%, it was second rank in Solapur district in study period.

While, household not using bathing facility of VJ/NT was specified highest that is 48.0%, it was seen very highest. Also, the situation of household not using bathing facility of SC and Minority social group were calculated 18.2% and 14.7% respectively in Solapur district in 2018.

Table - 05: Social Group wise Households Sources of Drinking Water of Solapur District

Sources of Drinking Water	Frequency			Percentage		
	SC	VJ/NT	MTY	SC	VJ/NT	MTY
Tap (Untreated)	09	07	08	5.3	4.7	8.4
Tap (Treated)	00	00	01	0.0	0.0	1.1
Well (Uncovered)	80	73	29	47.1	48.7	30.5
Hand Pump	09	01	02	5.3	0.7	2.1
Bore/Tube Well	10	18	04	5.9	12.0	4.2
Government Scheme	62	51	51	36.5	34.0	53.7
Total	170	150	95	100.0	100.0	100.0

Source: Felid Survey/2018 (Note: SC: Scheduled Caste, VJ/NT: Vimukta Jati/Nomadic Tribes, MTY: Minority)

Table -05 observed that social group wise households various sources of drinking water of Solapur district. The VJ/NTs nearby 48.7% household were using uncovered well source water.

As well SCs and Minority social groups household were stated 47.1 and 30.5% respectively. It is also treated that the all these social groups majority of household are using uncovered well (unsafe) water



for drinking purpose. While, the household using water of government water supply scheme is that the minority and SC social group were counted highest

53.7 and 36.5% respectively. It is second largest source of drinking water of all these social groups in Solapur district in 2018.

Table - 06: Social Group wise Households Energy Sources of Lighting of Solapur District

Energy Sources of Lighting	Frequency			Percentage		
	SC	VJ/NT	MTY	SC	VJ/NT	MTY
Kerosene	19	21	4	11.2	14.0	4.2
Electricity	148	127	90	87.1	84.7	94.7
Other Oil	02	02	01	1.2	1.3	1.1
LPG (Gas)	01	00	00	0.6	0.0	0.0
Other	00	00	00	0.0	0.0	0.0
Total	170	150	95	100.0	100.0	100.0

Source: Felid Survey/2018 (Note: SC: Scheduled Caste, VJ/NT: Vimukta Jati/Nomadic Tribes, MTY: Minority)

Table -06 observed that social group wise households various sources of drinking water of Solapur district. It is also reveal that the major energy source of lighting is electricity of all these social group's majority households. The household using electricity for lighting of minority was recorded

highest 94.7% and a lower VJ/NT social group that is 84.7% in the Solapur district. On the other hand, the VJ/NT social group was nearby 14.0% household using Kerosene for the lighting. It was higher than the SC and Minority social groups in Solapur district in 2018.

Table - 07: Social Group wise Households Energy Sources of Cooking of Solapur District

Energy Sources of Cooking	Frequency			Percentage		
	SC	VJ/NT	MTY	SC	VJ/NT	MTY
Kerosene	02	03	00	1.2	2.0	0.0
Firewood	105	100	31	61.8	66.7	32.6
Coal	00	00	00	0.0	0.0	0.0
LPG (Gas)	63	47	63	37.1	31.3	66.3
Electricity	00	00	01	0.0	0.0	1.1
Total	170	150	95	100.0	100.0	100.0

Source: Felid Survey/2018 (Note: SC: Scheduled Caste, VJ/NT: Vimukta Jati/Nomadic Tribes, MTY: Minority)

Table -07 described that social group wise various sources of cooking fuel of the Solapur district. It is also seen that the major energy source of cooking is firewood of except minority social group households. The situation of household using firewood for cooking of VJ/NT was recorded highest

94.7% and a lowest Minority social group that is 32.6% in the Solapur district. On the other hand, the household using of LPG for cooking of Minority social group was calculated 66.3% it was higher than the SC and VJ/NT social groups in Solapur district in 2018.

Table - 08: Social Group wise Households with No Assets of Solapur District

Assets	Frequency			Percentage		
	SC	VJ/NT	MTY	SC	VJ/NT	MTY
Yes	58	51	31	34.1	34.0	32.6
No	112	99	64	65.9	66.0	67.4
Total	170	150	95	100.0	100.0	100.0

Source: Felid Survey/2018 (Note: SC: Scheduled Caste, VJ/NT: Vimukta Jati/Nomadic Tribes, MTY: Minority)



Table -08 provides information related to social group wise household having assets or not i.e. Two and Four Wheeler, TV, Refrigerator, etc. in Solapur district. It is also mostly seen that the majority of household of i.e. SC, VJ/NT and Minority social group were nearby without assets that are 65.9, 66.0 and 67.4% respectively. Conversely, the

situation of household having assets of SC, VJ/NT and Minority social groups were recorded nearby 34.1, 34.0 and 32.6% respectively. It is also reveals that majority of household of all these social groups suffering without household assets in the Solapur district in 2018.

Table – 6.9: Selected Social Group wise Household Infrastructure Index of Solapur District: 2018

Sr. No	Household Infrastructure Indicators	Type	Social Group			
			SC	VJ/NT	MTY	
1	Household with Pucca House	+ve	Value	49.4	54.0	67.4
		Index	0.167	0.322	0.773	
2	Household with bathing facility	+ve	Value	81.8	52.0	85.3
		Index	0.744	0.111	0.819	
3	Household with latrine facility	+ve	Value	82.9	63.3	81.1
		Index	0.758	0.185	0.703	
4	Household with drainage facility	+ve	Value	34.1	14.7	65.3
		Index	0.357	0.025	0.889	
5	Household with safe drinking water	+ve	Value	47.6	46.7	61.1
		Index	0.224	0.185	0.757	
6	Household with access of electricity	+ve	Value	87.1	84.7	94.7
		Index	0.388	0.302	0.662	
7	Household with using firewood	-ve	Value	61.8	66.7	32.6
		Index	0.263	0.152	0.926	
8	Household with No Assets	-ve	Value	65.9	66.0	67.4
		Index	0.555	0.547	0.455	
Household Infrastructure Index				0.432	0.229	0.748

Source: Table 01 to 08 (Note: SC: Scheduled Caste, VJ/NT: Vimukta Jati/Nomadic Tribes, MTY: Minority)

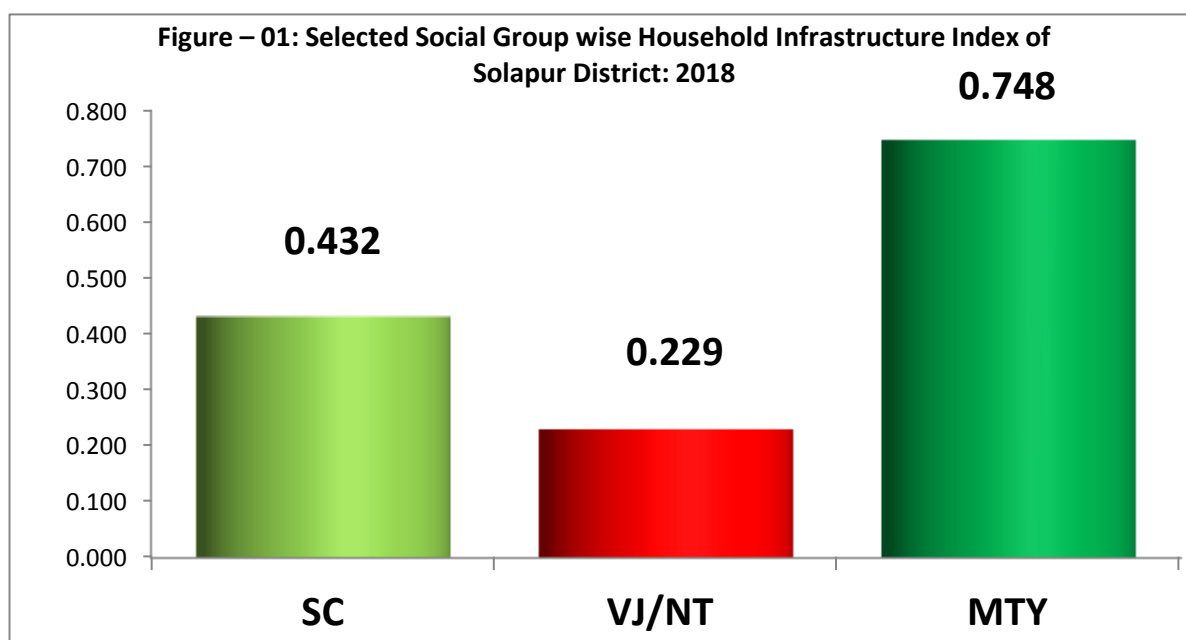




Table – 6.9 and Figure – 01, shows that the selected social group wise household infrastructure index of Solapur district in Western Maharashtra of Maharashtra state. The Household Infrastructure Index of the VJ/NT social group was recorded lowest that is 0.229 under the category of very low development as compare to SC and Minority social groups. It is also under the category of very low development due to the majority households of VJ/NT social group were lack of bathing, drainage and latrine facility, lack of safe drinking water as well as lack of modern cooking fuel i.e. LPG in Solapur district.

However, the Household Infrastructure Index of the Minority social groups was 0.748, comes under the category, it was also recorded highest as compare to SC and VJ/NT social groups. As well Household Infrastructure Index of SCs was counted that is 0.434 come under the category of low development in the Solapur district in 2018.

5. FININGS AND CONCLUSION

The current situation more than 50.0% of household of VJ/NT and SC social group are lacking of 'Pucca housing' facility. As well VJ/NT and SC social group's household were 85.3 and 65.9% deficient of drainage facility in Solapur district. Also the VJ/NT social groups was 66.7% household using of Firewood for cooking, it is higher than the SC and Minority social groups. However, all these social groups above 30.0% of households needed safe drinking water in the Solapur district in 2018.

Further, the major finding of the present study the Household Infrastructure Development Index of the Minority social group was calculated 0.746 comes under the category of high development, it was also higher than the VJ/NT and SCs. The HIDI of the SCs was recorded 0.432 under the category of low development. Conversely, the HIDI of the VJ/NTs was reported 0.229 under the category of very low development in the Solapur district in 2018.

Finally, this study concluded the HIDI of selected social groups in Solapur district is concern, it has exposed that the major gap or high social inequalities in household infrastructure development in Solapur district during the study period.

6. REFERENCES

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