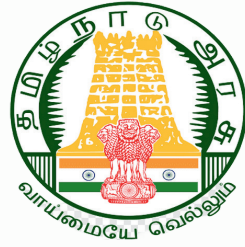
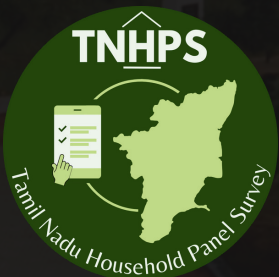


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# Tirunelveli



Tamil Nadu Household Panel Survey  
Pre-Baseline District Report 2018-19



**Tamil Nadu Household Panel Survey (TNHPS)  
Pre-Baseline Survey (PBS) District Report 2018-19**

***Tirunelveli District***

February 2024

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## Summary of PBS Findings

### *Demographic Indicators*

- Tirunelveli had a sample size of 8,178 households, of which 53.57 percent of households were from rural areas and 46.43 percent of households were from urban areas of the district.
- The district had a huge demographic dividend with more than 60 percent of the population aged between 6 and 45 years. Almost 30 percent of the population was between 26-45 years of age.
- The BC and SC social groups were the largest in number, together constituting almost 80 percent of the total households in the district.

### *Education*

- The PBS estimates showed that the literacy rate in the district had increased from 82.5 percent (Census 2011) to 86.98 percent in 2018 and was higher than the state average of 85.40 percent.
- A gender gap in literacy rate at 9.95 percent prevailed in the district in 2018, which was, however, lower than the state gender gap of 10.82 percent. The gender gap in literacy rate was higher in rural areas at 11.41 percent than in urban areas at 8.87 percent.
- While around 95 percent of the General category population in the district had received formal education, a little less than 80 percent of the SC population had done so.

### *Employment*

- The share of unemployed population in the district at 3.28 percent was similar to the state estimate of 3.50 percent. More than half the population at 53.42 percent was employed and the rest at 43.29 percent were not in the labour force.
- While around 70 percent of the male population was employed, the female work participation was only around 39 percent.
- Around 59 percent of the female population was not in the workforce, and among these, majority of them at about 72.11 percent were associated with attending to domestic duties as homemakers.
- Since Tirunelveli is largely an urban district, around 28 percent of the employed population depended on service sector for employment. The district provided employment opportunities in the service sector to more than 30 percent of the ST, BC, MBC, and DNC populations.

- Casual labour in the service sector was most common both in the rural and urban areas of the district.

### *Land Ownership and Assets*

- The percentage of households owning agricultural land in the district was higher than that at the state level estimate of 19.41 percent. SC and DNC category households were the predominant agricultural landholders in the district.
- The proportion of households having irrigated agricultural land was much higher in the district at 75.76 percent compared to the state estimate of 50.03 percent.
- 91.18 percent of the agricultural land-owning households in the district were holding marginal or small agricultural lands—less than two hectares.
- 18.09 percent of the households in Tirunelveli district owned at least one agricultural, allied agricultural or fishing asset. This estimate was lower than the state PBS estimate of 20.92 percent.
- More than 90 percent of the General, BC and DNC category households owned at least one household asset. The estimates also show that 11.55 percent of SC households and around 13 percent of MBC households did not even own a mobile phone.

### *Household Income*

- The mean annual household income of Tirunelveli district was ₹1,09,906, lower than the state PBS estimate of ₹1,42,752; in the urban areas it was ₹1,21,117 and in rural areas it was ₹94,478. Tirunelveli was ranked twentieth out of 32 districts with respect to this parameter.
- The mean household income was higher among the households with salaried income (₹2,20,071) and lower among the households that depended on allied agricultural activities (₹29,667).
- The Gini coefficient for income inequality in Tirunelveli district (0.579) was higher than the state estimate (0.563). Contrary to other districts' estimates, the income inequality across households in rural areas of the district (0.627) was higher than the urban areas (0.535).
- While more than two-thirds of the SC, MBC, DNC, and BC category households in Tirunelveli district expected an increase in their future income, comparatively only around half the general households expected the same.

### *Basic Infrastructure*

- Around 77 percent of the households in the district were living in their own house, which was higher than the state level estimate of 75.16 percent. In rural areas,

around 91.33 percent of households lived in an own house whereas in urban areas it was only around 66.07 percent.

- Of the 76.99 percent households that lived in an own house in the district, 9.27 percent of houses were built under a government scheme. SC and MBC households had the highest percentage of houses built under a government scheme compared to other social groups.
- More than three-quarters of the households in Tirunelveli district were living in pucca houses.
- The primary source of water for households in the state was piped water into the dwelling in urban areas and public tap/standpipe in rural areas. Likewise, in Tirunelveli district, public tap/standpipe was predominantly used in rural households and piped water into the dwelling in urban households of the district.
- The rate of growth of households with electricity was slightly higher in rural areas compared to the urban areas. The electrification status in the district at 98.43 percent was higher than the state estimate of 97.6 percent.
- The use of LPG as the primary cooking fuel had increased tremendously in the district from 2011 (Census 2011) to 2018 encompassing around 89 percent of the households. Around 14 percent of the SC and MBC households still used firewood as the primary cooking fuel.
- The percentage of households with latrine within the premises of the house had increased from 47.64 percent in 2011 (Census, 2011) to 80.53 percent in 2018. Tirunelveli district was positioned sixth in the state among the 32 districts in terms of this indicator.
- Around 22 percent of rural households and 30 percent of the SC households and more than a quarter of MBC households did not have a latrine within the house premises.
- The percentage of total households in the district following open defecation had declined considerably from 43.12 percent in 2011 (Census, 2011) to 13.84 percent in 2018.

## 1. Introduction

### 1.1 Profile of Tirunelveli District

Tirunelveli district in Tamil Nadu was formed in the year 1956. In the year 2019, Tirunelveli district was bifurcated into Tirunelveli and Tenkasi districts. However, this report only includes data for the erstwhile Tirunelveli district. It is in the southern region of the state bordering Virudhunagar district in the north, Thoothukudi district in the east, Kanniyakumari district and Bay of Bengal in the south, and Kerala state in the west.

According to Census (2011), Tirunelveli had a total population of 30.77 lakhs, accounting for approximately 4.27 percent of Tamil Nadu's total population, which was 7.21 crores. The district comprised 8.16 lakh households, with 50.6 percent residing in rural areas. The male population was 49.42 percent, and the female population was 50.58 percent. Tirunelveli demonstrated a child-sex ratio of 959.63 compared to the state average of 943.27. Within the social groups, 18.5 percent of the population belonged to the Scheduled Castes, while 0.3 percent belonged to the Scheduled Tribes. The literacy rate in Tirunelveli district stood at 82.5 percent, compared to the state's average of 80.09 percent. The male literacy rate was reported to be 89.24 percent, while the female literacy rate was reported to be 75.98 percent.

In the fiscal year 2018-19, Tirunelveli's Net District Domestic Product was ₹52,49,437 lakhs, ranking at eleventh among all districts. The district's per capita Net District Domestic Product was recorded at ₹1,56,633, ranking it at seventeenth among districts. Nonetheless, the per capita Net District Domestic Product of the district was below the Tamil Nadu average of ₹1,83,884 (Department of Economics and Statistics, 2023). In terms of sectoral distribution, the primary sector (agriculture and allied) contributes approximately eight percent to its domestic income, while the secondary (industry) and tertiary (service) sectors contribute approximately 34 percent and 58 percent, respectively (Department of Economics and Statistics, 2017).

According to the Tamil Nadu State Planning Commission (2017a), Tirunelveli ranked seventh in terms of the Human Development Index with a score of 0.802, pointing to an above-average performance in overall development. It ranked twenty-first in the Gender Inequality Index with a score of 0.084, which is a moderate score. In terms of the Child Development Index, the district ranked eighteenth with a score of 0.645, indicative of an average performance in developing the youth. Additionally, Tirunelveli ranked tenth in terms of the Multidimensional Poverty Index with a score of 0.46, pointing to a relatively good performance in the eradication and prevention of poverty.

Tirunelveli district showcases a robust economy, ranking high in Net District Domestic Product and per capita income. The district demonstrates commendable progress in human development and poverty reduction, while continued efforts in child development and gender equality could further enhance its overall well-being.

### *1.2 About the TNHPS and Pre-Baseline Survey (PBS)*

The Tamil Nadu Household Panel Survey (TNHPS) has been designed as a longitudinal survey, beginning with a Pre-Baseline Survey or the PBS—an extensive household listing activity—followed by a Baseline Survey (Wave 1) and subsequent periodic surveys (Wave 2, Wave 3 etc.). The TNHPS aims to analyze the patterns of change in various socio-economic indicators, including households' income, occupational structures and living conditions.

The PBS collected data on a comprehensive set of socio-economic indicators for the period 2018-19 with the results providing district-level estimates for these indicators and informing the sampling design and the associated sampling frame for the first wave of the TNHPS. As Census 2021 has not yet commenced, the PBS estimates act as a valid benchmark for the Government of Tamil Nadu in terms of socio-economic development since 2011. The PBS surveyed around 2,12,282 households in the erstwhile 32 districts of Tamil Nadu across 1476 Primary Sampling Units—684 rural PSUs and 792 urban PSUs.

This report analyzes data from the PBS for the Tirunelveli district and presents the findings. Wherever possible, the report compares the district PBS estimates with the most recent census data of Tirunelveli (Census, 2011) and the state PBS estimates (TNHPS-PBS, 2021) to assess the socio-economic development of Tirunelveli district. The sample size for the district was 8,178 households, among which 4,381 households were from rural areas and 3,797 households were from urban areas. The blocks covered during the survey were: Cheranmahadevi, Kadayam, Kalakadu, Kuruvikulam, Manur, Melaneelithanallur, Nanguneri, Palayamkottai, Pappakudi, Tenkasi, and Valliyur.

## 2. Survey Response

For the Pre-Baseline Survey (PBS) 2018-19, a total of 9,791 households were selected in Tirunelveli district using a multi-stage stratified sampling design<sup>1</sup>. The final sample size for PBS was 8,178 households, of which 53.57 percent of households were from rural areas and 46.43 percent of households were from urban areas of the district. The area-wise distribution of the total sample as well as the survey response is given in Table 2.1.

*Table 2.1 Distribution of Sample Households – Response-wise*

Response of Households	Area Type					
	Rural		Urban		Total	
	Number of HHs	Percentage	Number of HHs	Percentage	Number of HHs	Percentage
Response	4,381	82.03	3,797	85.33	8,178	83.53
Non-Response	88	1.65	96	2.16	184	1.88
Non-sample	872	16.33	557	12.52	1,429	14.60
<b>Total</b>	<b>5,341</b>	<b>100</b>	<b>4,450</b>	<b>100</b>	<b>9,791</b>	<b>100</b>

Tirunelveli district had a lower response rate—willingness of households to participate in the TNHPS-PBS—of 83.53 percent compared to the state response rate of 96.5 percent. Around 1.88 percent of households were not willing to participate in the survey. About 14.60 percent of the selected samples were removed as they were not considered as households as per the definition used in the PBS<sup>2</sup>.

<sup>1</sup> Detailed explanation of the Sampling Methodology is available in the TNHPS-PBS State Report (see TNHPS-PBS, 2021).

<sup>2</sup> A household is defined as a group of persons normally living together and taking food from a common kitchen. The category called non-sample consisted of institutions, houses of NRIs and other buildings where there was no kitchen.

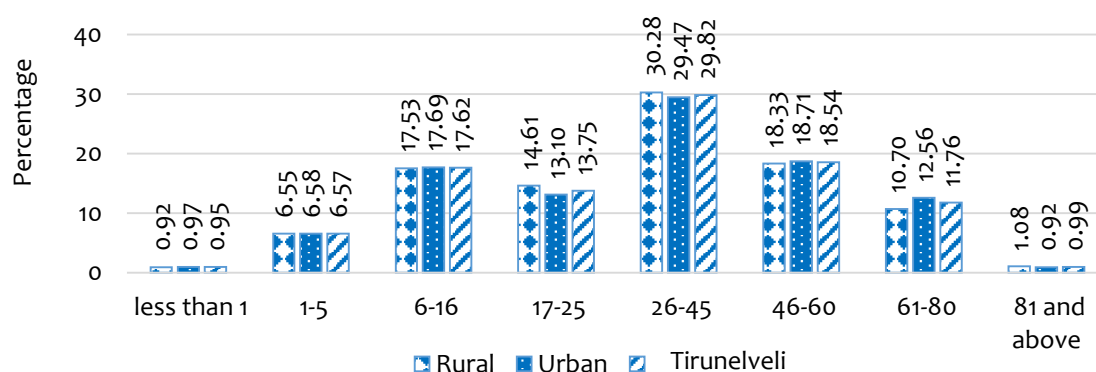
### 3. Key Findings

#### 3.1 Demographic Indicators

As per the PBS estimates, the average household size<sup>3</sup> in the district had reduced from 3.78 in 2011 (Census, 2011) to 3.39 in 2018. As per the PBS estimates, 47.09 percent of the population in the district were male, and 52.91 percent of the population were female. Around 23.97 percent of the households in Tirunelveli district were headed by females, which was higher than the state estimate of 18.93 percent (TNHPS-PBS, 2021).

Chart 3.1 shows the age-wise distribution of the population in Tirunelveli district.

Chart 3.1 Age-wise Distribution of Population



As per the PBS estimates, the proportion of the population in the 17 to 45 years' age bracket in the district at 43.57 percent was lower than the state estimates of 48 percent (TNHPS-PBS, 2021). The proportion of senior citizens—above 60 years—in Tirunelveli district's population at 12.75 percent was higher than that at the state level estimate of 11 percent (TNHPS-PBS, 2021).

The percentage of currently married population was higher in urban areas at— 72.96 percent — compared to the rural areas—at 70.75 percent— of the district. A higher percentage of males — at 75.07 percent—were currently married compared to females— at 69.43 percent. The widowed female population at 18.37 percent was notably higher than the widowed male population at 2.92 percent.

The religion-wise distribution of the households in the district as per the PBS estimates shows that 82.94 percent of the households practiced Hinduism, 10.91 percent practiced

<sup>3</sup> Household size is defined as the number of family members currently living in the household during the PBS survey.

Islam and 6.15 percent followed Christianity.

Table 3.1 shows the social group-wise distribution of the households in the district.

*Table 3.1 Social Group-wise Distribution of Households*

Social Group	Percentage
SC	14.26
ST	0.04
BC	64.61
MBC	10.91
Denotified Communities (DNC)	7.84
General	2.24
DK/RF	0.11
<b>Total</b>	<b>100</b>

As per the PBS estimates, the highest percentage of households in Tirunelveli district belonged to the BC category. The percentages of SC and ST households in the district were 14.26 percent and 0.04 percent in 2018.

It is important to note that the percentage of ST category households in Tirunelveli district was only 0.04 percent and only thirteen ST households were sampled in the district. Hence, the results pertaining to this social group that are discussed in the report must be interpreted in this context.

### *3.2 Development Indicators*

In this section we discuss the PBS estimates on various development indicators such as literacy rate and employment status in Tirunelveli district.

#### *3.2.1 Education*

The change in literacy rate of Tirunelveli district during the period 2011 and 2018 is given in Table 3.2. As per Census 2011, a person aged seven and above who can both read and write with understanding in any language, is treated as literate. In the PBS, literacy rate is measured including those that have formal schooling and those that can read and write a simple sentence.



Table 3.2 Literacy Rates between Census 2011 and PBS 2018

Gender	District-Rural		District-Urban		Tirunelveli		Tamil Nadu	
	2011	2018	2011	2018	2011	2018	2011	2018
Male	86.77	91.42	91.74	92.95	89.24	92.29	86.77	90.97
Female	71.80	80.01	80.23	84.08	75.98	82.34	73.40	80.15
<b>Total</b>	<b>79.17</b>	<b>85.36</b>	<b>85.9</b>	<b>88.2</b>	<b>82.50</b>	<b>86.98</b>	<b>80.09</b>	<b>85.40</b>

\*The represented trend should be understood under the context that Census does 100 percent enumeration whereas in the PBS, a sample is surveyed.

As per Census 2011, the literacy rate in Tirunelveli district at 82.50 percent was higher than the state average of 80.09 percent. The PBS estimates show that in the year 2018, the literacy rate in Tirunelveli district had increased to 86.98 percent, which continued to be higher than the state average of 85.40 percent. Nevertheless, Tirunelveli district registered only 4.48 percent growth in literacy rate in this period while the state had registered 5.31 percent growth. Among the then 32 districts, Tirunelveli was ranked twelfth in terms of literacy rate (TNHPS-PBS, 2021).

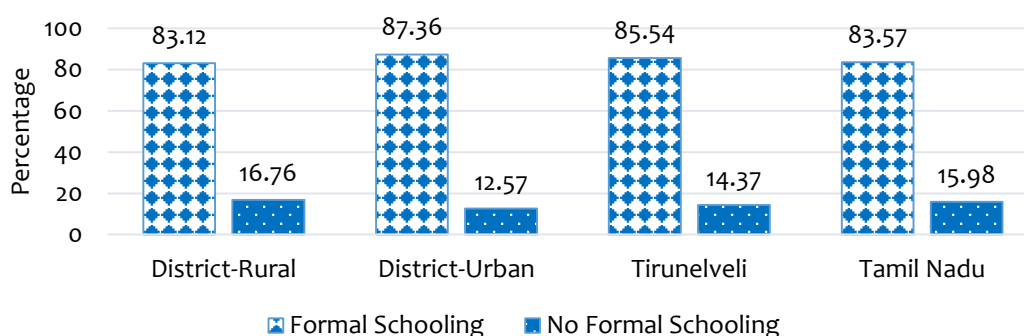
Both male literacy as well as female literacy in Tirunelveli district had recorded an increase during the period under consideration, though a wide gender gap prevailed. The gender gap in literacy rate had reduced from 13.26 percent in 2011 to 9.95 percent in 2018.

Both rural and urban literacy rates recorded an increase between 2011 and 2018, though the rural literacy rate was still 2.84 percent lower than the urban literacy rate in 2018. The gender gap in literacy rate was higher in rural areas at 11.41 percent than in urban areas at 8.87 percent.

### 3.2.2 Education Status of Population (Age 7 and above)

In this section we discuss the education status of the population aged seven and above in Tirunelveli district.

Chart 3.2 Formal Schooling of the Population – Area-wise Percentages



\*Others and Don't Know/Refuse to Answer categories are not included in any chart, unless their value is substantially high. Therefore, the total might not add up to 100 percent.

Chart 3.2 shows that around 86 percent of the specified population in the district had attended formal schooling, which was higher compared to the state estimate. The percentage of population with formal education in urban areas was much higher than in rural areas of the district.

*Chart 3.3 Formal Schooling of the Population– Gender-wise Percentages*

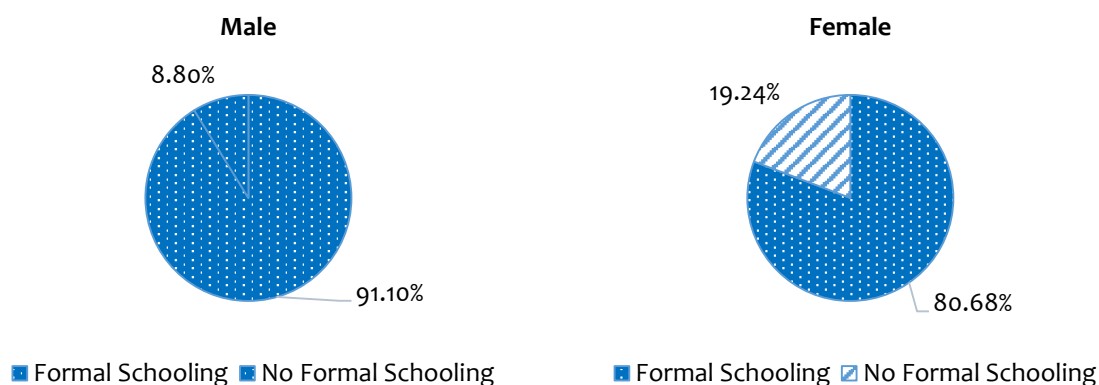


Chart 3.3 shows that the percentage of the population that had acquired formal education in the district was much higher among males compared to females, again denoting a wide gender gap, like in literacy.

A district level analysis of the PBS on education attainment status of various social groups is shown below.

*Table 3.3 Formal Schooling of Population - Social Group-wise Percentages*

Education Status	Social Group						
	SC	ST	BC	MBC	DNC	General	Tirunelveli
Formal Schooling	79.36	61.25	87.44	83.19	81.47	95.29	85.54
No Formal Schooling	20.53	38.75	12.47	16.78	18.41	4.48	14.37
Others and DK/RF	0.11	0.00	0.09	0.03	0.12	0.24	0.09
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Table 3.3 shows a wide variation across social groups in attainment of formal schooling. While around 95 percent of the General category population in the district had received formal education, a little less than 80 percent of the SC population had done so.

To take this analysis further, Table 3.4 gives detailed information on the current highest level of formal educational attainment of the population that had received formal education.

*Table 3.4 Highest Formal Educational Attainment of Population - Area-wise Percentages*

Educational Attainment	Area Type		
	Rural	Urban	Tirunelveli
Primary (I to V)	34.23	29.44	31.44
Middle School (VI to VIII)	23.45	21.77	22.47
High School (IX to X)	18.01	19.63	18.96
Higher Secondary (XI to XII)	12.91	12.52	12.68
Bachelor's degree	5.88	9.33	7.89
Diploma Degree	3.88	4.05	3.98
Post Graduate Degree	1.50	3.16	2.47
Other Higher Education	0.00	0.02	0.01
Others/DK/RF	0.14	0.08	0.11
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

The percentage of the population that was either pursuing or had completed tertiary education—bachelor’s degree, diploma, or post graduate degree and above was 14.35 percent, which was slightly lower than the state estimate of 20.02 percent. Also, this figure was higher for urban areas than rural areas of the district.

*Table 3.5 Highest Formal Educational Attainment of Population – Gender-wise Percentages*

Educational Attainment	Gender of the Member		
	Male	Female	Tirunelveli
Primary (I to V)	28.45	34.39	31.44
Middle School (VI to VIII)	22.46	22.48	22.47
High School (IX to X)	22.06	15.89	18.96
Higher Secondary (XI to XII)	11.21	14.14	12.68
Bachelor's degree	7.61	8.17	7.89
Diploma Degree	5.95	2.03	3.98
Post Graduate Degree	2.13	2.80	2.47
Other Higher Education	0.02	0.00	0.01
Others/DK/RF	0.11	0.10	0.11
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

Table 3.5 shows a largely similar pattern of schooling levels being pursued or completed by males and females in the specified population in the district. In tertiary education, a higher percentage of females had completed post-graduate degree compared to males, whereas the case with respect to diploma degree percentages was the reverse.

*Table 3.6 Highest Formal Educational Attainment of Population - Social Group-wise Percentages*

Educational Attainment	Social Group						
	SC	ST	BC	MBC	DNC	General	Tirunelveli
Primary (I to V)	29.91	61.66	32.25	31.40	30.59	19.04	31.44
Middle School (VI to VIII)	22.29	10.86	22.51	22.38	24.31	17.13	22.47
High School (IX to X)	18.36	27.48	18.54	20.92	21.03	18.53	18.96
Higher Secondary (XI to XII)	14.22	0.00	12.26	12.72	12.15	18.38	12.68
Bachelor's degree	7.83	0.00	7.82	7.44	6.89	15.41	7.89
Diploma Degree	4.96	0.00	3.99	3.32	3.01	4.42	3.98
Post Graduate Degree	2.29	0.00	2.53	1.70	1.87	6.83	2.47
Other Higher Education	0.00	0.00	0.00	0.09	0.00	0.00	0.01
Others/DK/RF	0.14	0.00	0.10	0.04	0.14	0.25	0.11
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

The social group-wise analysis in Table 3.6 shows that most of the SC population in the district were either pursuing or had completed only primary and secondary school. The percentage of population with tertiary education—bachelor’s degree and above—was quite high among the General category at 26.66 percent, followed by the BC category at 14.34 percent. Similar to the national and state level trend, the percentage of population with higher educational qualification in the district was lower among SC category households. The results for the ST category must be interpreted in the context of their sample size, as discussed in Section 3.1.

About 14.37 percent of the population had not received formal education in Tirunelveli district (refer Chart 3.2); the PBS investigated the ability of those who could read and write a simple sentence with understanding or functional literacy.

*Table 3.7 Functional Literacy of Population with No Formal Schooling – Area-wise Percentages*

Functional Literacy	Area Type		
	Rural	Urban	Tirunelveli
Yes	13.36	6.68	10.02
No	86.60	93.08	89.84
DK/RF	0.04	0.24	0.14
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

Table 3.7 shows the functional literacy status of the population with no formal schooling in the district. Only 10.02 percent of the population without formal schooling had functional literacy. The specified population group in rural areas of the district had a much better functional literacy than the rural areas.

*Table 3.8 Functional Literacy of Population with No Formal Schooling - Social Group-wise Percentages*

Functional Literacy	Social Group						
	SC	ST	BC	MBC	DNC	General	Tirunelveli
Yes	13.47	0.00	8.90	7.58	12.16	20.86	10.02
No	86.46	100	90.89	92.42	87.74	79.14	89.84
DK/RF	0.07	0.00	0.21	0.00	0.10	0.00	0.14
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Table 3.8 shows the functional literacy status of the population with no formal schooling, across various social groups. Though functional literacy was low across all social groups, the General category had the highest percentage population with functional literacy at 20.86 percent, followed by SC category population at 13.47 percent. The results for the ST category must be interpreted in the context of their sample size, as discussed in Section 3.1.

### 3.2.3 Employment Status

This section looks at the employment status of the household members, types of employment that they are engaged in, the unemployment rate at the district level and comparison of these findings with the state PBS estimates. In the PBS, the population aged 14 years and above has been classified as employed, unemployed and not in the labour force<sup>4</sup>.

The employed category—population aged 14 years and above—includes the following:

- (i) People who are self-employed in agriculture,
- (ii) People who are self-employed in allied agricultural activities,
- (iii) People who are self-employed in non-agricultural activities,
- (iv) People who worked as casual labourers in agriculture,
- (v) People who worked as casual labourers in industry,
- (vi) People who worked as casual labourers in the service sector,
- (vii) People who worked as casual labourers in other domains,
- (viii) People who worked as salaried employees in the government sector,

<sup>4</sup> Percentage of population employed = (Number of employed persons 14 years and above/Total population of the district 14 years and above) \*100

Percentage of population unemployed = (Number of unemployed persons 14 years and above/Total population of the district 14 years and above) \*100

Percentage of population not in the labour force = (Number of persons 14 years and above not in workforce/Total population of the district 14 years and above) \*100

- (ix) People who worked as salaried employees in the private sector,
- (x) People who are involved in multiple occupations, and
- (xi) People who are involved in other types of work.

The unemployed category includes those aged 14 years and above, who did not work but were actively seeking and/or available for work.

The not in the labour force category consists of the following:

- (i) People who attended educational institutions,
- (ii) People who attended domestic duties only,
- (iii) Rentiers, pensioners, remittance recipients, etc.,
- (iv) People who are not able to work due to disability and
- (v) Others (including begging, etc.).

*Chart 3.4 Employment Status of Population (Age 14 years and above) – Area-wise Percentages*

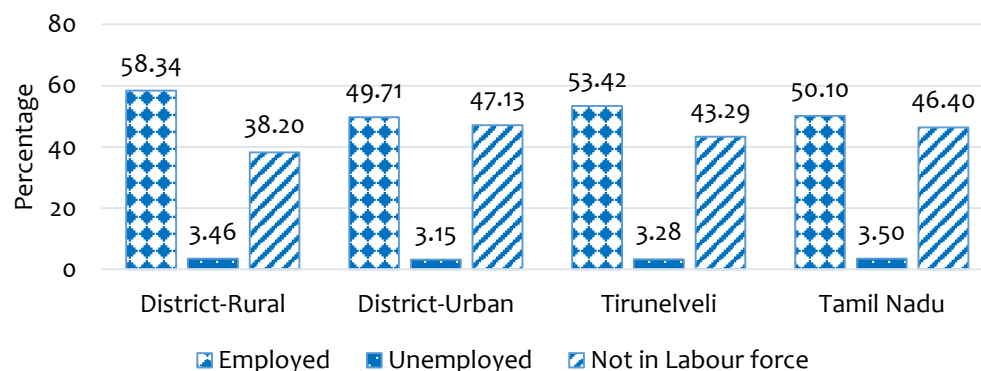


Chart 3.4 shows that the overall percentage of employed population—14 years and above—in the district was higher than the state estimate. The share of unemployed population in the district was similar to the state estimate. The percentage of population that was employed was much higher in rural parts of the district than the urban. The unemployment status in rural areas of the district at 3.46 percent and the district urban unemployment status at 3.15 percent was lower than the state’s rural PBS estimate and the state urban estimates of 3.6 percent and 3.3 percent respectively. Tirunelveli district was ranked ninth among all districts in Tamil Nadu in terms of employed population and ranked twelfth lowest in terms of the unemployed population (TNHPS-PBS, 2021).

Chart 3.5 Employment Status of the Population – Gender-wise Percentages

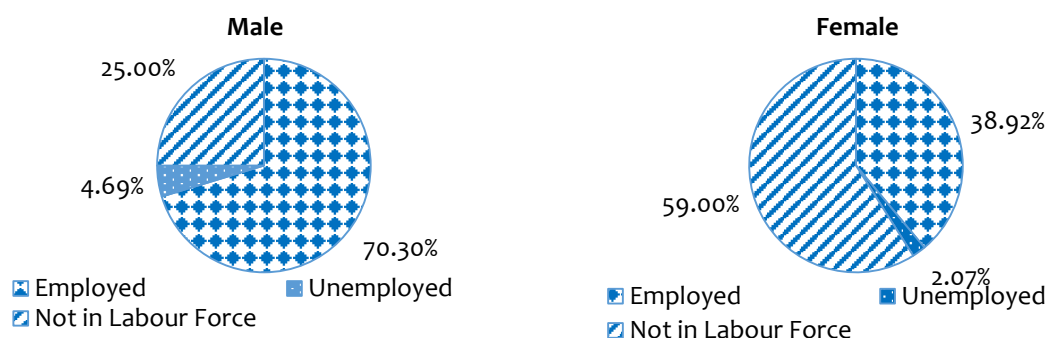


Chart 3.5 shows the gender-wise employment status of the population aged 14 years and above. While around 70 percent of the male population was employed, the female work participation was only around 39 percent. Decreased female labour force participation has been well documented at the national level (Das et al., 2015; Desai, 2017; Desai & Joshi, 2019). The district female work participation was higher than both the national average of 23.3 percent in 2017-18 (National Statistical Office, 2019) and the state estimate (29.96 percent). Around 59 percent of the female population was not in the workforce, and among these, majority of them at about 72.11 percent were associated with attending to domestic duties as homemakers (see Chart 3.7). Tirunelveli district was ranked third in terms of employed female population and ranked thirteenth lowest in terms of female unemployment.

Table 3.9 Work type of Employed Population – Area-wise Percentages

Work Type	Area Type		
	Rural	Urban	Tirunelveli
Self Employed Agriculture	11.04	4.28	7.46
Self Employed Non-Agriculture	13.31	19.76	16.73
Self Employed Allied Agriculture	2.01	0.71	1.32
Casual Labourer Agriculture	16.21	3.83	9.65
Casual Labourer Industry	14.33	9.96	12.01
Casual Labourer Service	24.68	31.22	28.15
Casual Labourer (Others)	5.08	11.15	8.30
Salaried Worker Government	2.61	4.87	3.81
Salaried Worker Private	8.44	13.05	10.89
Multiple Occupation	2.07	0.87	1.44
Other	0.20	0.28	0.24
DK/RF	0.02	0.01	0.01
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

Since Tirunelveli is largely an urban district, around 28 percent of the employed population depended on service sector for employment. While the greatest proportion of the working population in the state were salaried workers in the private sector at 21.82 percent, as per the state PBS estimates (TNHPS-PBS, 2021), majority of the working population in

Tirunelveli district were casual labourers in the service sector. Casual labour in the service sector was most common in rural and urban areas of the district.

*Table 3.10 Percentage of Employed Population Engaged in Different Types of Livelihood Activities – Social Group-wise Percentages*

Work Type	Social Group						
	SC	ST	BC	MBC	DNC	General	Tirunelveli
Self Employed Agriculture	12.91	0.00	5.99	8.34	8.44	4.49	7.46
Self Employed Non-Agriculture	8.19	20.32	19.38	16.24	11.98	17.69	16.73
Self Employed Allied Agriculture	1.63	0.00	1.26	1.03	1.69	0.90	1.32
Casual Labourer Agriculture	24.05	27.02	4.18	14.59	21.52	1.76	9.65
Casual Labourer Industry	9.52	0.00	13.93	9.53	4.84	10.79	12.01
Casual Labourer Service	21.58	31.52	30.31	26.28	26.87	24.05	28.15
Casual Labourer (Others)	5.93	2.93	9.00	7.94	9.08	2.82	8.30
Salaried Worker Government	3.67	0.00	3.71	3.56	3.37	11.74	3.81
Salaried Worker Private	11.09	18.21	10.82	10.54	7.67	25.60	10.89
Multiple Occupation	1.37	0.00	1.11	1.52	4.43	0.16	1.44
Other	0.05	0.00	0.29	0.41	0.03	0.00	0.24
DK/RF	0.00	0.00	0.01	0.00	0.09	0.00	0.01
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Tirunelveli being an urbanised district provided employment opportunities in the service sector to more than 30 percent of the ST, BC, MBC, and DNC populations. The SC population was predominantly engaged in casual labour in the agricultural sector at 24 percent, significantly lesser than the state PBS estimates of 33.33 percent of SC population in the same occupation (TNHPS-PBS, 2021). Next to service sector, self-employed in non-agriculture sector was the most opted employment by BC, and MBC population in the district. Those belonging to the General category were predominantly involved in salaried work in the private sector. The results for the ST category must be interpreted in the context of their sample size, as discussed in Section 3.1.

*Chart 3.6 Composition of Population Not in the Labour Force – Area-wise Percentages*

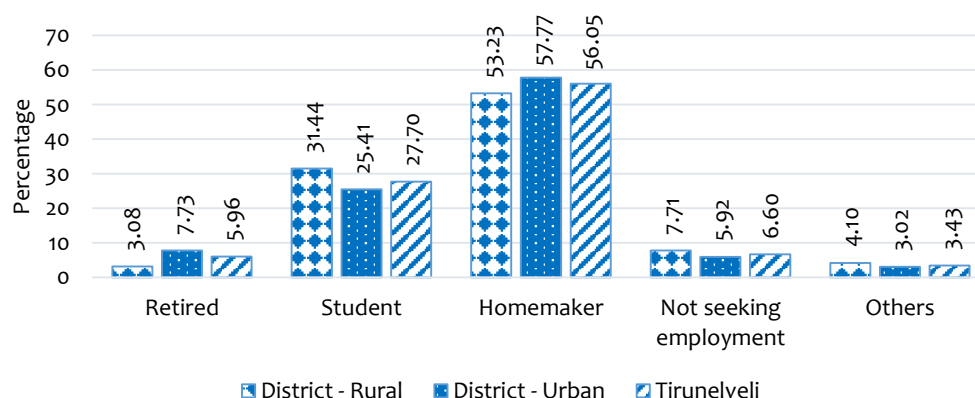
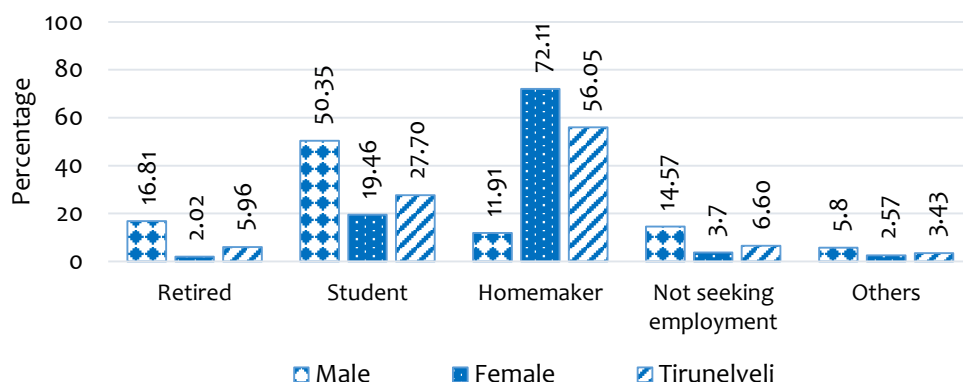


Chart 3.6 shows that, similar to the state level trend (TNHPS-PBS, 2021), more than half the population that was not in the labour force in the district comprised of homemakers



involved in unpaid domestic duties of the household, followed by students. The proportions of the population that were not seeking employment or were students, were higher in rural areas than urban areas, whereas the percentages of retired people and homemakers were higher in urban areas than rural areas.

*Chart 3.7 Composition of Population Not in the Labour Force – Gender-wise Percentages*



The gender-wise distribution of the population currently not in the labour force aged 14 and above is given in Chart 3.7. While Chart 3.3 represents the lower female involvement in formal education, Chart 3.7 shows the staggeringly lower female involvement in higher education compared to men as only 19.46 percent of the female not-in-labour-force population were students. Similar to the state trend, majority of the male not-in-labour-force population were students, whereas a majority of females were homemakers. It must be noted that the study did not capture unpaid domestic labour or any other form of unpaid labour carried out by women.

*Table 3.11 Composition of the Population Not in the Labour Force – Social Group-wise Percentages*

Current Status	Social Group						
	SC	ST	BC	MBC	DNC	General	Tirunelveli
Retired	5.74	0.00	6.24	4.15	4.29	13.20	5.96
Student	31.60	18.39	27.67	26.07	26.49	22.00	27.70
Homemaker	51.44	77.13	55.94	59.54	57.62	58.92	56.05
Not seeking employment	7.82	4.48	6.41	6.91	6.78	4.04	6.60
Others	3.19	0.00	3.54	2.69	4.45	1.84	3.43
DK/RF	0.21	0.00	0.20	0.63	0.37	0.00	0.26
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Table 3.11 shows that within all social groups, the percentage of homemakers was the largest compared to other categories in the district. The SC category had a higher percentage of not-working population as students compared to the other social groups. Although majority of the employed SC, MBC and DNC population were casual labourers (see Table 3.10), the not-working population belonging to the student category was high

for these social groups, probably suggesting increasing awareness on the importance of education. The results for the ST category must be interpreted in the context of their sample size, as discussed in Section 3.1.

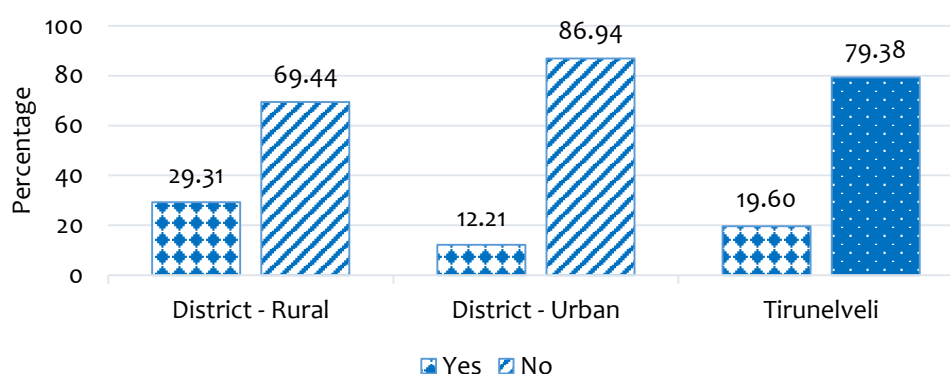
### 3.3 Socio-Economic Indicators

The PBS estimates for various socio-economic indicators of Tirunelveli district such as ownership of agricultural land, household assets and income are shown in this section.

#### 3.3.1 Ownership of Agricultural Land

The PBS estimates of ownership of agricultural land at the household level in the rural and urban areas of Tirunelveli district is given in Chart 3.8. The TNHPS PBS definition of land ownership does not include leased-in land or other forms of holdings. Data were collected on the ownership of agricultural land only. The fourth round of National Family Health Survey (NFHS, 2015-16) was a secondary source of data that followed the same definition for ownership of agricultural land.

Chart 3.8 Ownership of Agricultural Land



Although Tirunelveli is an urbanized district, it also has a robust agricultural sector. The percentage of households owning agricultural land in the district at 19.60 percent was close to the state level estimate of 19.41 percent. The district was ranked seventeenth in the state in terms of agricultural land ownership (TNHPS-PBS, 2021). Area-wise comparison shows that a higher proportion of households in rural and urban areas of the district owned agricultural land compared to the respective state level rural and urban estimates of 29 percent and 8.61 percent respectively (TNHPS-PBS, 2021).

Table 3.12 shows the percentage of agricultural land-owning households in the district that depended on irrigation or rain.

*Table 3.12 Type of Agricultural Land Owned by the Households – Area-wise Percentages*

Type of Agricultural Land	Area Type		
	Rural	Urban	Tirunelveli
Only Irrigated Agriculture Land	69.41	87.36	75.76
Only Unirrigated Agriculture Land	21.73	5.79	16.09
Both Irrigated and Unirrigated Agriculture Land	6.41	5.30	6.01
DK/RF	2.46	1.56	2.14
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

Table 3.12 shows that the proportion of households having irrigated agricultural land was much higher in the district at 75.76 percent compared to the state estimate of 50.03 percent. As per the PBS estimates, around 16 percent of the households that owned agricultural land in Tirunelveli district depended on rain-fed irrigation alone. Of the 12.21 percent of urban households that owned land, a higher percentage owned irrigated agricultural land compared to the rural households in the district. Dug and tube wells, and tanks are the major sources of irrigation in Tirunelveli district (Tamil Nadu State Planning Commission, 2017b).

An analysis of the social group-wise ownership of agricultural land by households in Table 3.13 showed that SC and DNC category households were the predominant agricultural landholders in the district. The results for the ST category must be interpreted in the context of their sample size, as discussed in Section 3.1.

*Table 3.13 Ownership of Agricultural Land - Social Group-wise Percentages*

Agricultural Land Ownership	Social Group						
	SC	ST	BC	MBC	DNC	General	Tirunelveli
Yes	28.16	0.00	17.68	18.80	24.39	8.07	19.60
No	71.54	100	81.44	77.95	75.16	91.73	79.38
DK/RF	0.30	0.00	0.88	3.25	0.45	0.20	1.03
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Based on the size of agricultural land, the PBS classified the land owned by the households into marginal, small, semi-medium, medium, and large. Of the households that owned agricultural land, the percentage of households under each size category is given in Table 3.14.

*Table 3.14 Size of Agricultural Land Owned by the Households – Area-wise Percentages*

Size of Agricultural Land (in Hectares)	Area Type		
	Rural	Urban	Tirunelveli
Marginal (0.01 - 0.99)	81.23	84.58	82.29
Small (1 - 1.99)	9.47	7.62	8.89
Semi Medium (2 - 3.99)	4.83	5.36	5.00
Medium (4 - 9.99)	1.19	0.54	0.98
Large (10 and above)	3.27	1.90	2.84
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

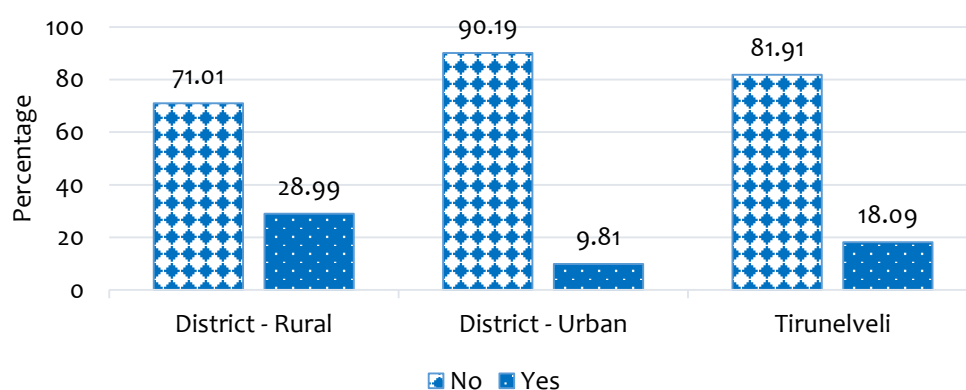
Table 3.14 shows that 91.18 percent of the agricultural land-owning households in the district were holding marginal or small agricultural lands—less than or equal to two hectares. This figure is higher than the state level estimate of 89.33 percent. While the share of medium landholdings was lesser at 0.98 percent than that of the state estimate at 2.26 percent, the share of large landholdings at 2.84 percent was much higher than that of the state estimate at 0.77 percent.

### 3.3.2 Ownership of Agricultural, Allied agricultural and Fishing Assets

In this section, we discuss the ownership of agricultural, allied agricultural and fishing assets such as tractor, pump set, dairy animals, poultry birds, mechanized and non-mechanized boats, amongst the households of Tirunelveli district.

Chart 3.9 shows that 18.09 percent of the households in Tirunelveli district owned at least one agricultural, allied agricultural or fishing asset. This estimate was lower than the state estimate of 20.92 percent (TNHPS-PBS, 2021). Predictably, the ownership of such assets was higher in rural areas than in urban areas. However, comparatively, the district rural asset ownership pattern was lower than that of the state rural estimate of 32.69 percent and the ownership pattern was higher in urban areas of the district than that of the state urban estimate of 7.67 percent (TNHPS-PBS, 2021).

Chart 3.9 Ownership of Agricultural, Allied agricultural and Fishing Assets – Area-wise Percentages

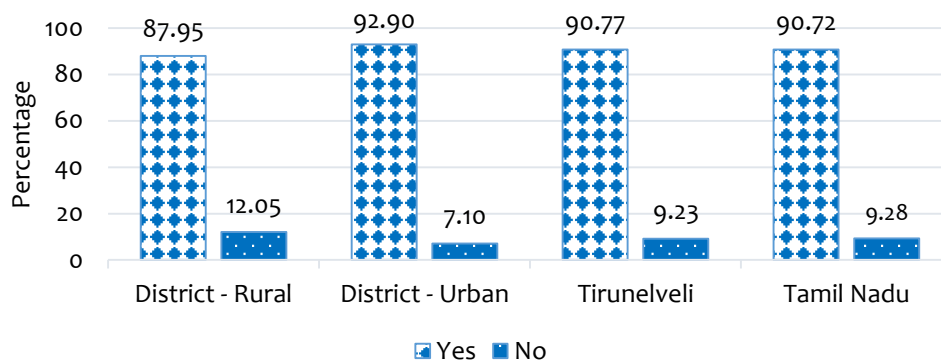


### 3.3.3 Presence of Household Assets

Chart 3.10 shows the percentage of households in Tirunelveli district that own at least one household asset. Household assets include Air Conditioner (AC), refrigerator, two-wheeler, four-wheeler, and mobile phones. The state PBS estimates found that the combination of mobile phone and two-wheeler were the predominantly owned assets in

rural areas whereas a combination of refrigerator, two-wheeler and mobile phone was largely owned in the urban areas.

Chart 3.10 Ownership of at least one Household Asset – Area-wise Percentages



The percentage of households owning at least one household asset in Tirunelveli district was similar to the state estimate. Within the district, the urban areas had a higher percentage of households owning at least one household asset compared to the rural areas.

Table 3.15 Presence of at least one Household Asset - Social Group-wise Percentages

Presence of Household Asset	Social Group						
	SC	ST	BC	MBC	DNC	General	Tirunelveli
Yes	88.45	67.47	91.86	86.89	90.08	95.81	90.77
No	11.55	32.53	8.14	13.11	9.92	4.19	9.23
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

The PBS estimates shows that more than 90 percent of the General, BC and DNC category households owned at least one household asset. However, the estimates show that 11.55 percent of SC households and around 13 percent of MBC households did not even own a mobile phone. The results for the ST category must be interpreted in the context of their sample size, as discussed in Section 3.1.

### 3.3.4 Possession of Ration Card

Possession of a ration card can be treated as a determinant of socio-economic status at the household level. It plays a vital role in inclusion—or exclusion—of households from the government welfare schemes such as the availability of subsidized items from public distribution system and subsidized LPG connection, for instance. The percentage of households that possessed ration card in rural, urban, and overall area of Tirunelveli district are given in Chart 3.11.

Chart 3.11 Possession of Ration Card

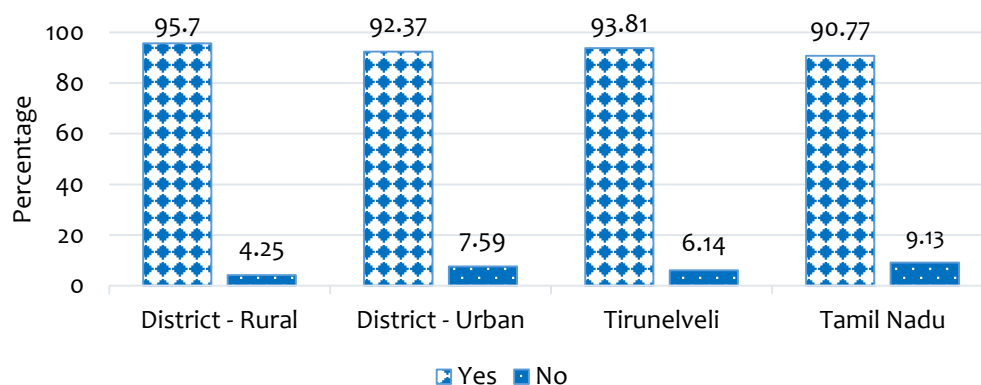


Chart 3.11 shows that the percentage of households that possessed a ration card in the district was higher than the state estimate. Within the district, a higher percentage of rural households possessed ration cards compared to the urban households.

Table 3.16 Possession of Ration Card at the Household Level - Social Group-wise Percentages

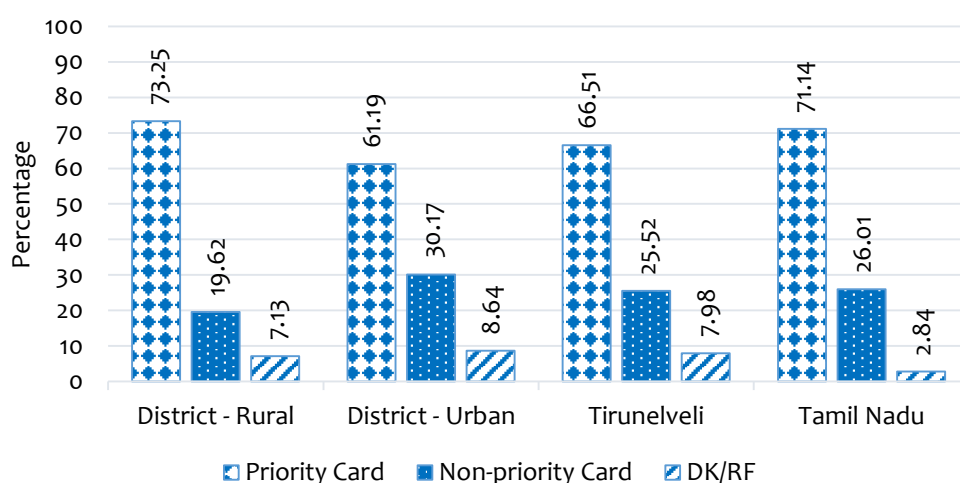
Possession of Ration Card	Social Group						
	SC	ST	BC	MBC	DNC	General	Tirunelveli
Yes	93.84	90.57	94.23	92.92	91.92	92.98	93.81
No	6.10	9.43	5.71	7.04	8.08	7.02	6.14
DK/RF	0.06	0.00	0.05	0.04	0.00	0.00	0.05
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Social group-wise estimates on the possession of ration card at the household level is shown in Table 3.16. More than 90 percent of households belonging to all social groups possessed ration cards in the district. The results for the ST category must be interpreted in the context of their sample size, as discussed in Section 3.1.

### 3.3.5 Type of Ration Card

According to the National Food Security Act (NFSA) 2013, ration cards are broadly categorized into Priority Households (PHH) and Non-Priority Households (NPHH). Households with priority ration card are the target group of various social welfare schemes such as Antyodaya Anna Yojana (AAY) among others. The percentages of households possessing priority and non-priority ration cards in rural and urban areas of Tirunelveli district are given in Chart 3.12.

Chart 3.12 Type of Ration Card at the Household Level



The percentage of households possessing priority ration cards in the district was lesser compared to the state level estimate. A higher percentage of rural households possessed priority cards than urban households. A large fraction of households, especially in the urban areas, refused to answer this question.

### 3.4 Household Income

#### 3.4.1 Annual Household Income from Various Sources in the year 2017-2018

In this section we analyze the annual income of households in Tirunelveli district from various sources in the year 2017-2018. The sources of income are income earned from activities such as agriculture, allied agriculture, salaried work, self-employed, wage labour and other sources. The category 'other sources' consists of other income sources such as pension, remittances, investments, and other mixed categories. Table 3.17 shows the mean income of households that depend on various sources of income in Tirunelveli district.

Table 3.17 Mean Annual Household Income from Different Sources in the FY 2017-2018 (INR)

Source	District-Rural	District- Urban	Tirunelveli	Tamil Nadu
Agriculture	52,817	58,219	54,430	61,830
Allied Agriculture	28,820	31,726	29,668	38,576
Salaried	2,48,540	2,05,780	2,20,072	2,29,857
Self Employed	1,05,454	90,528	94,980	1,47,403
Wage Labour	38,601	43,814	41,380	47,734
Other Sources	70,330	1,24,451	1,08,112	97,646
<b>Income from all Sources</b>	<b>94,478</b>	<b>1,21,118</b>	<b>1,09,906</b>	<b>1,42,752</b>

The mean household income was higher among the households with salaried income and lower among the households that depended on allied agricultural activities. On the whole, the mean annual household income of Tirunelveli district was 23.01 percent lesser than the state estimates of ₹1,42,752. Among the then 32 districts, Tirunelveli was ranked twentieth in terms of mean annual household income (TNHPS-PBS, 2021).

In rural areas of Tirunelveli district, the mean household income was ₹94,478.32, which was higher than the state rural estimate of ₹92,765 (TNHPS-PBS, 2021). The working population engaged in salaried work and self-employment were the reasons for higher rural mean household income of the district. Lower mean income was reported among the households that engaged in allied agriculture activities as a source of income.

In urban areas of Tirunelveli district, the mean household income was ₹1,21,117.90, which was lower than the state urban estimate of ₹1,99,629 (TNHPS-PBS, 2021) and the district rural estimate of ₹94,478.33. The mean household income was higher among the households that depended on salaried income. Lower mean income was reported among the households that depended on allied agriculture and wage labour.

### 3.4.2 Income Inequality in Tirunelveli District

The Gini coefficient measures inequality levels in income or wealth where the coefficient value of 0 denotes perfect equality and 1 denotes perfect inequality (across households). The income inequality in Tirunelveli district (0.579) was higher than the state estimate (0.563)<sup>5</sup>. Contrary to other districts' estimates, the income inequality across households in rural areas of the district (0.627) was found to be higher than the urban areas (0.535).

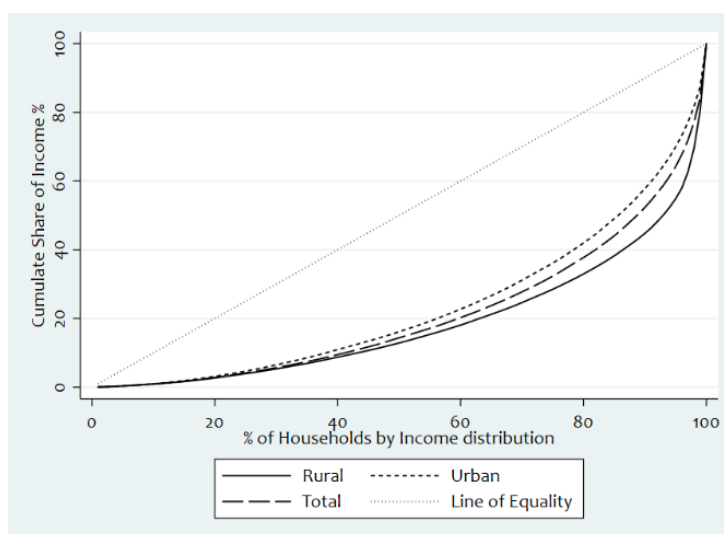
Table 3.18 Gini Coefficient of Income Inequality- Area wise

Area	Gini coefficient
Rural	0.627
Urban	0.535
Tirunelveli	0.579
<b>Tamil Nadu</b>	<b>0.563</b>

<sup>5</sup> Other studies have estimated the Gini coefficient for Tamil Nadu, for instance - Chandrasekhar et al. (2021) estimated the Gini coefficient of income inequality for Tamil Nadu as 0.378 in 2018-19 using data from the Periodic Labour Force Survey (PLFS) (2018-19).



Chart 3.13 Lorenz Curve and Income Inequality



The Lorenz curve is a graphical representation of inequality in the distribution of income or wealth of households. Chart 3.13 shows that in Tirunelveli, the bottom 60 percent of the households held around 20 percent of the total income; the bottom 80 percent of households held close to 40 percent of the total income and the top 20 percent of households held around 65 percent of total income. Both Chart 3.13 and Table 3.18 show that income inequality was higher in rural areas compared to the urban areas of the district.

### 3.4.3 Households' Expectation of Change in their Income in the Next 5 Years

Besides the present income of the households (in the year 2017-18), the PBS also investigated the households' expectation of change in income in the next five years. The expectation of a household head on the change in the household's income in the future depends on various factors such as probability of a household member's entry (or exit) to (or from) the labour market, expected possession of financial and non-financial assets and so on. These variables can capture the level of optimism—or pessimism—that each household has about their future economic status.

Table 3.19 Households' Expectation of Change in Income in the Next 5 Years – Area-wise Percentages

Expectation of Change in Household Income	Area Type			
	District-Rural	District-Urban	Tirunelveli	Tamil Nadu
Higher	69.41	70.55	70.05	50.06
Lower	4.42	3.51	3.90	8.17
About the same	23.73	21.24	22.32	31.66
DK/RF	2.44	4.70	3.73	10.11
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

While a majority of the urban households in the district expected their income to increase in the following five years, the percentage of households expecting a decline in their future income was higher in rural areas compared to urban areas. Less than a quarter of the households in the district anticipated their future income to remain the same.

*Table 3.20 Households' Expectation of Change in Income in the Next 5 Years - Social Group-wise Percentages*

Expectation of Change in Household Income	Social Group						
	SC	ST	BC	MBC	DNC	General	Tirunelveli
Higher	66.19	85.40	72.34	68.61	64.60	56.11	70.05
Lower	4.63	0.00	3.38	6.27	3.67	3.58	3.90
About the same	26.48	5.18	20.17	23.74	27.45	33.03	22.32
DK/RF	2.70	9.43	4.11	1.38	4.27	7.28	3.73
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

While more than two-thirds of the SC, MBC, DNC, and BC category households in Tirunelveli district expected an increase in their future income, only around half the general households expected the same. The SC and MBC category households also expected a relatively high percentage of decreased future income. The results for the ST category must be interpreted in the context of their sample size, as discussed in Section 3.1.

### 3.5 Basic Infrastructure

In this section we discuss the PBS estimates of variables such as ownership and type of houses, electrification status, drinking water and sanitation.

#### 3.5.1 House Ownership Status

The area wise percentage of households that have own house, stay at rented houses and other houses are given in Chart 3.14.

*Chart 3.14 Ownership Status of the Households' Dwelling/ House – Area-wise Percentages*

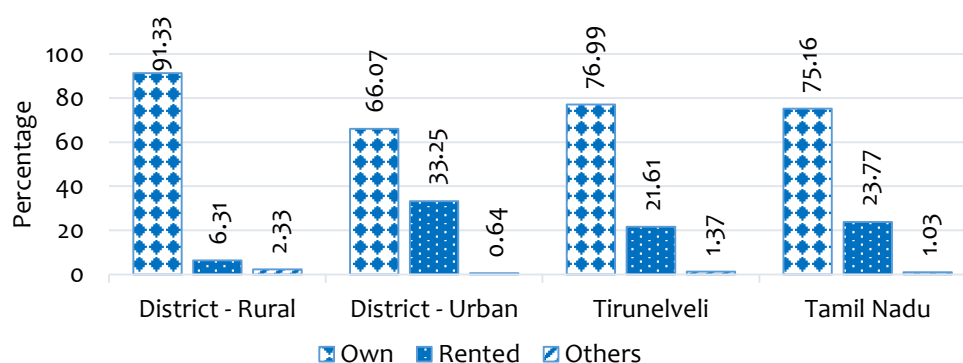


Chart 3.14 shows that the proportion of households living in their own house in the district

was higher than the state level estimate. Tirunelveli district was ranked eighteenth among the then 32 districts of Tamil Nadu in terms of percentage of households living in their own house (TNHPS-PBS, 2021). While most of the households in rural areas lived in their own house, a large proportion of urban households were relying on rented houses for their stay. Around one percent of households were living in other houses such as relative's house, encroachments etc. This data does not capture the ownership of a house in a different geographical location.

*Table 3.21 Ownership Status of the Households' Dwelling/House - Social Group-wise Percentages*

Ownership Status	Social Group						
	SC	ST	BC	MBC	DNC	General	Tirunelveli
Own	90.34	93.36	73.96	75.98	83.95	60.13	76.99
Rented	8.88	6.64	24.36	23.13	15.39	38.39	21.61
Others	0.70	0.00	1.68	0.89	0.66	1.48	1.37
DK/RF	0.08	0.00	0.00	0.00	0.00	0.00	0.03
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Table 3.21 shows that more than 90 percent of SC and 83.95 percent of DNC households in the district lived in their own house, while only around 60 percent of the General category households were doing the same. The results for the ST category must be interpreted in the context of their sample size, as discussed in Section 3.1.

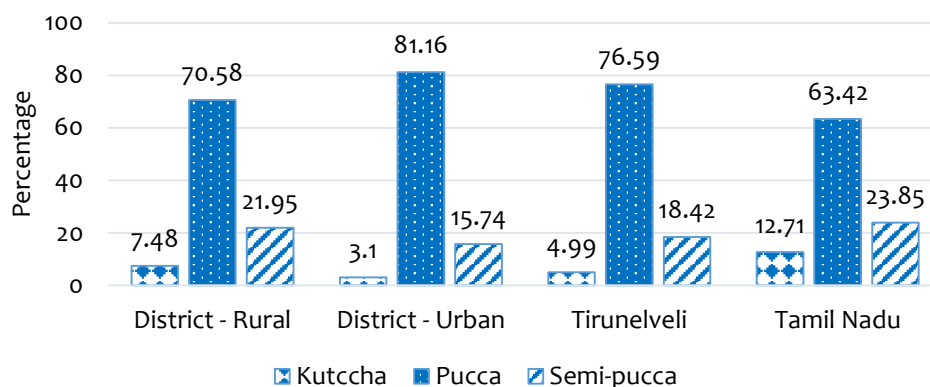
A detailed analysis of ownership of houses showed that out of the 76.99 percent households (see Chart 3.14) that lived in an own house in the district, 9.27 percent of houses were built under a government scheme, which was lower than the state estimate of 14.12 percent (TNHPS-PBS, 2021). The social group-wise analysis of this parameter is given below.

*Table 3.22 House Constructed Under a Government Scheme - Social Group-wise Percentages*

House Constructed under Government Scheme	Social Group						
	SC	ST	BC	MBC	DNC	General	Tirunelveli
Yes	30.03	0.00	3.97	10.01	7.36	4.25	9.27
No	69.73	100	96.02	89.90	92.64	95.75	90.68
DK/RF	0.24	0.00	0.01	0.09	0.00	0.00	0.06
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

In Tirunelveli district, SC followed by MBC households had the highest percentage of houses built under a government scheme compared to other social groups. The results for the ST category must be interpreted in the context of their sample size, as discussed in Section 3.1.

### 3.5.2 House Type



Based on the material used for wall/roof or quality of houses, the PBS classify the houses as Kutccha, Pucca and Semi-pucca. The percentage of houses that come under each type are given below.

*Chart 3.15 Type of House – Area-wise Percentages*

Chart 3.15 shows that more than three-quarters of the households in Tirunelveli district were living in pucca houses. The district estimates on households living in pucca houses was higher than the state estimate. The percentage of urban households living in pucca houses in the district was much higher than rural households, and higher than the state urban estimate of 75.22 percent (TNHPS-PBS, 2021).

### 3.5.3 Primary Drinking Water Source

In this section we discuss on the PBS findings on primary source of drinking water of the households in Tirunelveli district. The primary sources<sup>6</sup> of water are - bottled water, piped water into dwelling, piped water to yard or plot, public tap or standpipe, tube well or borehole. Other water sources include protected well, unprotected well, rainwater collection and surface water (tank/pond/river/dam).

<sup>6</sup> Primary source - Water that is availed for the greater part of the year

Chart 3.16 Primary Source of Drinking Water of Households

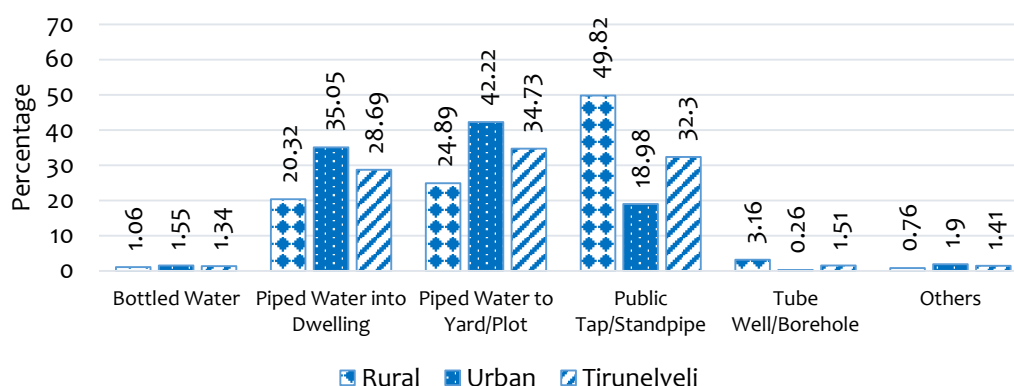


Chart 3.16 shows that 32.3 percent of households in Tirunelveli district were using public tap or standpipe as their primary source of drinking water, which is slightly lower than the state estimate of 32.84 percent (TNHPS-PBS, 2021). The state PBS estimates showed that piped water into the dwelling in urban areas at 37.02 percent and public tap/standpipe in rural areas at 44.51 percent were the primary water sources of households (TNHPS-PBS, 2021). Likewise, in Tirunelveli district, public tap/standpipe was predominantly used in rural households and piped water into the dwelling in urban households of the district.

### 3.5.4 Electricity

Tamil Nadu had witnessed mass electrification during the last decade. A comparison of households with an electricity connection between Census (2011) and the state PBS estimates in 2018 (TNHPS-PBS, 2021) showed that the state was close to achieving complete electrification in case of urban areas. The electrification status had improved in rural areas as well.

Chart 3.17 Comparison of Households with Electricity between Census (2011) and PBS 2018

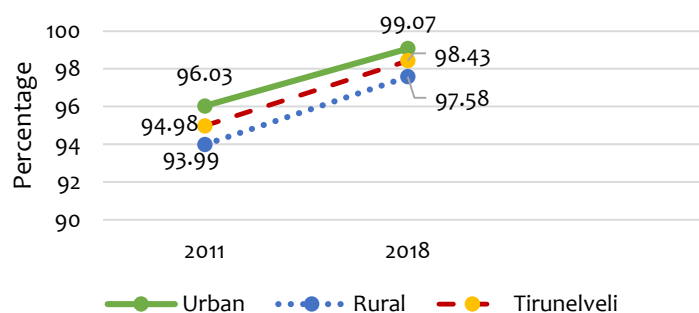


Chart 3.17 shows the electrification status of households in Tirunelveli district, along with a comparison to the electrification status during Census (2011). There was rapid

electrification in rural areas of Tirunelveli district between 2011-2018. The rate of growth of households with electricity was slightly higher in rural areas compared to the urban areas. The electrification status in the district at 98.43 percent was higher than the state estimate of 97.6 percent (TNHPS-PBS, 2021).

### 3.5.5 Primary Cooking Fuel

A comparison of Census (2011) and the PBS estimates on the main fuel<sup>7</sup> used for cooking by the households in the district is given in Chart 3.18.

Chart 3.18 Comparison of Primary Cooking Fuel - Tirunelveli and Tamil Nadu

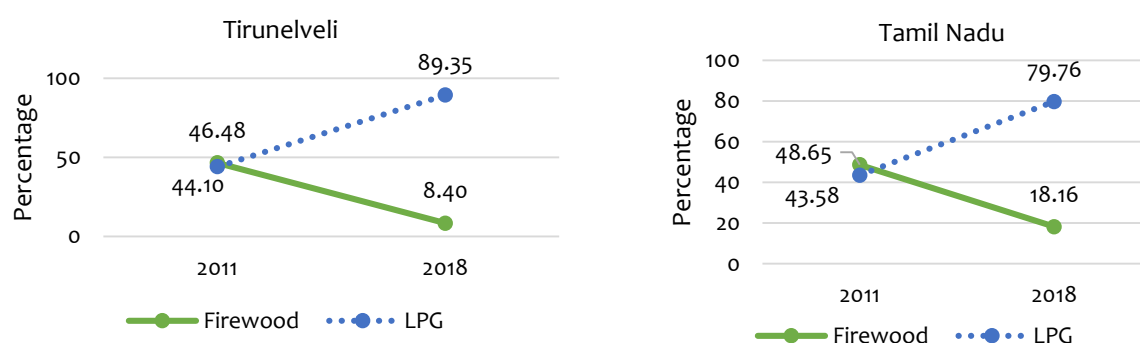
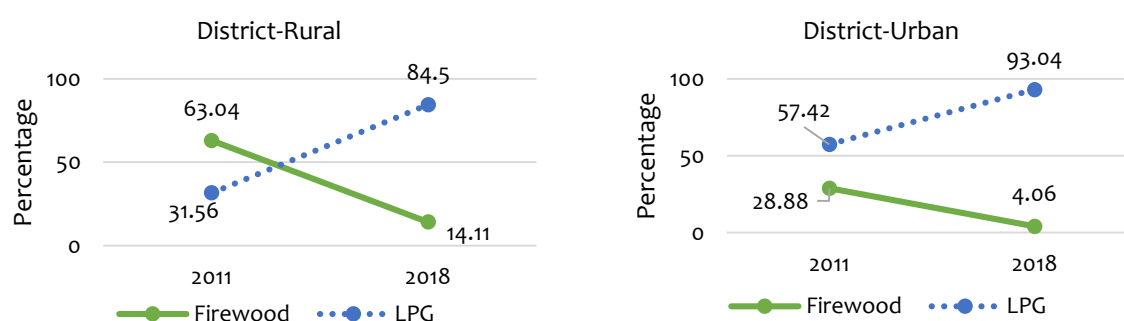


Chart 3.18 shows that, although the use of LPG as the primary cooking fuel had increased tremendously in the district from 2011 (Census 2011) to 2018 encompassing around 89 percent of the households, firewood was still used by less than 10 percent of the households. Compared to other districts of Tamil Nadu, Tirunelveli district was ranked sixth in terms of LPG use and ranked fifth lowest in terms of firewood use as primary cooking fuel (TNHPS-PBS, 2021).

Chart 3.19 Comparison of Primary Cooking Fuel – Rural and Urban



<sup>7</sup> Main Fuel: Fuel that is used for the greater part of the year

Chart 3.19 shows that the predominant fuel in rural areas in the district had changed drastically from firewood to LPG in the period 2011-18. LPG uptake had increased further in urban areas, and that of firewood had dropped drastically during the same period.

*Table 3.23 Primary Cooking Fuel in Household - Social Group-wise Percentages*

Primary Cooking Fuel	Social Group						
	SC	ST	BC	MBC	DNC	General	Tirunelveli
Firewood	14.72	41.95	5.99	14.38	10.49	0.18	8.40
Kerosene	0.87	0.00	1.64	0.98	0.81	1.81	1.39
LPG	84.02	58.05	91.22	84.18	88.63	98.01	89.35
Others	0.21	0.00	0.93	0.46	0.06	0.00	0.68
DK/RF	0.18	0.00	0.22	0.00	0.00	0.00	0.17
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

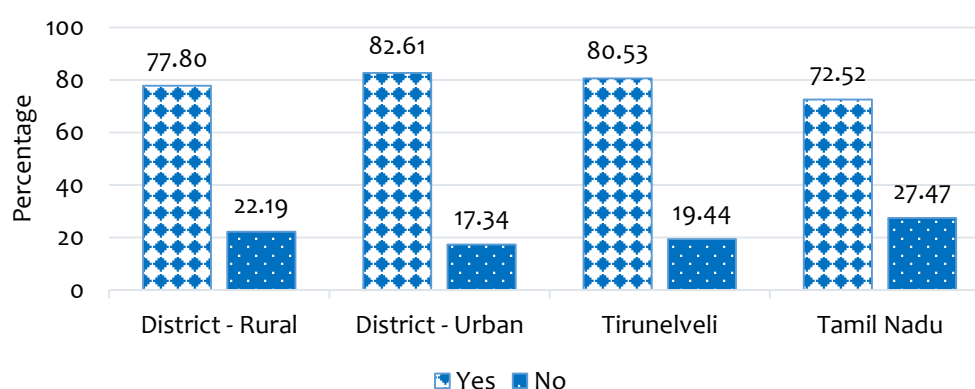
\*Others Include Electricity, Gobar Gas, Solar Energy, etc.

Table 3.23 shows that, while majority of General category households used LPG as the primary cooking fuel, around 14 percent of the SC and MBC households still used firewood as the primary cooking fuel. The results for the ST category must be interpreted in the context of their sample size, as discussed in Section 3.1.

### 3.5.6 Sanitation

The PBS estimates on households with and without latrine is given in Chart 3.20.

*Chart 3.20 Presence of Latrine within the Premises of the Household*



The percentage of households with latrine within the premises of the house had increased from 47.64 percent in 2011 (Census, 2011) to 80.53 percent in 2018 as per the PBS estimates. Tirunelveli district was positioned sixth in the state among the 32 districts in terms of this indicator (TNHPS-PBS, 2021). The percentage of households equipped with latrine facilities in the district was higher than the state level estimate. It is pertinent to note that almost a

quarter of the rural households did not have access to a latrine within their house premises.

*Table 3.24 Presence of Latrine within the premises of the Household - Social Group-wise Percentages*

Latrine within House Premises	Social Group						
	SC	ST	BC	MBC	DNC	General	Tirunelveli
Yes	70.38	50.47	83.56	72.08	81.10	97.59	80.53
No	29.62	49.53	16.39	27.92	18.90	2.41	19.44
DK/RF	0.00	0.00	0.04	0.00	0.00	0.00	0.03
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Table 3.24 shows the presence of latrine within the premises of the household across various social groups. The percentages of BC, DNC, and MBC households with latrine access in the district were higher than their respective state level estimates of 83.56 percent, 81.10 percent and 72.08 percent respectively (TNHPS-PBS, 2021). Yet, around 30 percent of the SC households and more than a quarter of MBC households did not have a latrine within the house premises.

The presence of latrine facilities in the premises of households residing in different types of houses in the rural and urban areas of Tirunelveli district are compared in Chart 3.21.

*Chart 3.21 Presence of Latrine in the Premises of Different Type of Houses – Area wise*

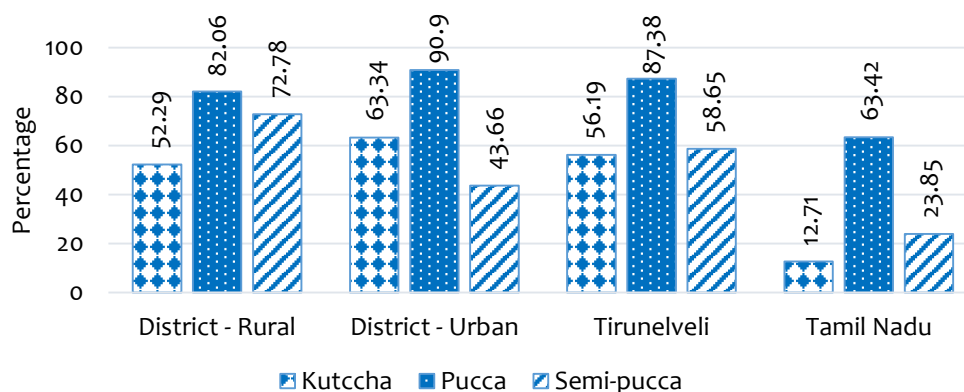


Chart 3.21 shows that the percentage of pucca houses with latrine facilities was higher than for semi-pucca and kutccha houses in the district. The percentages of latrine facilities in kutccha, pucca and semi-pucca houses in the district were higher than their respective state estimates. A higher number of pucca houses in urban areas in the district had latrine facilities than rural areas, but interestingly, the percentage of semi-pucca houses with a latrine was higher in rural areas than urban areas of the district.

The percentage of total households in the district following open defecation had declined considerably from 43.12 percent in 2011 (Census, 2011) to 13.84 percent in 2018 (TNHPS-PBS,



2021). The alternative practices of defecation followed by 19.44 percent of the district's households (see Chart 3.20) that did not have a latrine within the premises of the house is shown in Chart 3.22.

Chart 3.22 Alternate Practices of Defecation by the Households without Latrine

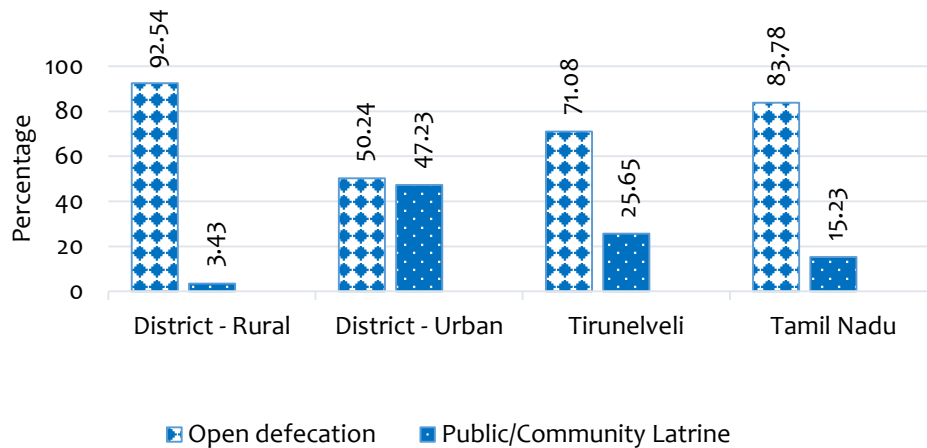


Chart 3.22 shows that 71.08 percent of households without latrine within the premises of the house in the district were following open defecation, which was lower than the state level estimate. The practice of open defecation by these households was significantly higher in rural areas compared to urban areas of the district. As per the state PBS report, Tirunelveli district was ranked twenty-fourth in terms of the percentage of total households following open defecation.

## 4. Conclusions and Recommendations

The Pre-Baseline Survey (PBS) 2018-19 of Tirunelveli district was conducted from the sample of 8,178 households in the district who were willing to participate in the survey. The survey focused on five major indicators: i) demographic indicators, ii) development indicators, iii) socio-economic indicators, iv) household income and v) basic infrastructure.

The literacy rate of Tirunelveli district was higher than the state estimate. Among the then 32 districts, Tirunelveli was ranked twelfth in terms of literacy rate. Tirunelveli district was ranked third in terms of female work participation and ranked twentieth in terms of the percentage of female unemployed population. The percentage of total households owning agricultural land in the district was similar to the state estimate. The proportion of households having irrigated agricultural land was much higher in the district compared to the state estimate. The percentage of households living in their own house was slightly higher than the state estimate. The percentage of households owning at least one household asset in Tirunelveli district was similar to the state estimate. The district estimate on the percentage of households living in pucca houses was higher than the state estimate. While majority of the households in the state were using public tap and stand pipe, majority of households in the district were using piped water into yard/plot as their primary source of drinking water. Compared to the other districts of Tamil Nadu, Tirunelveli district was ranked seventh in terms of electrification; ranked sixth in terms of LPG usage and ranked sixth in terms of the presence of latrine facilities within the premises of the house. Since the percentage of households with latrine within house premises was higher, the percentage of households following open defecation was lower than the state estimates.

There are certain indicators in the district that require further development. the overall percentage of employed population—14 years and above—in the district was lesser than the state estimate. Given that Tirunelveli has both urban and rural characteristics, skill development initiatives should aim at strengthen skilling in both sectors. The district estimates on the percentage of households owning at least one agricultural, allied agricultural and fishing asset was also lesser than the state estimate. The mean annual household income of Tirunelveli district was lower than the state estimate. Among the then 32 districts, Tirunelveli was ranked twentieth in terms of mean annual household income. Gini coefficient and Lorenz curve measured that income inequality was higher in the district compared to the state estimate. Income inequality was especially higher in rural areas compared to the urban areas of the district. Amongst households that owned a house, the percentage of houses constructed under a government scheme was lesser in the district compared to the state estimate.

Although the district is equipped with better educational infrastructure, a strategic plan is required to improve the literacy rate further as the growth in literacy rate between 2011 and 2018 in the district was lower than the state estimate. Around 14 percent of the SC and MBC households still used firewood as the primary cooking fuel. Policies should be drawn to ensure that all households are equipped with LPG connection which will reduce the usage of firewood as the primary cooking fuel. Open Defecation was much higher in rural Tirunelveli than urban areas. Attention should also be given to increase the availability of latrine facilities at the household level or encourage community latrine usage in order to eradicate open defecation.

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**A collaborative project between  
Department of Economics and Statistics &  
Madras Institute of Development Studies**

The Tamil Nadu Household Panel Survey (TNHPS) is designed as a longitudinal survey where a set of sample households in Tamil Nadu will be surveyed at specific intervals to analyse the change in their socio-economic conditions over time. The TNHPS aims to analyse how individuals, families, communities, and society are transforming in Tamil Nadu. Understanding this transformation is important for informed policy-making and for society in today's modern world where open links with other states and countries lead to enormous movement of people, ideas, technology, capital, and goods and services. The Pre-Baseline Survey (PBS) elicited information from 2,12,282 households across different districts of Tamil Nadu on a comprehensive set of socio-economic indicators. This serves as the sampling frame for the Baseline Survey (BLS) of subsequent rounds of comprehensive surveys of 7,45,653 individuals in the state.

Based on the information collected during the PBS 2018-19, this report provides a baseline on key socio-economic and demographic indicators of the district along with brief notes on the methods and processes followed in collecting, processing and analysis of data. As the first state-level initiative for collecting comprehensive household panel data through digital data collection methods, TNHPS emerges as an important source of information for evidence-based policymaking in the state.



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