**Indian Statistical Institute**

**BSDS: 2024-26**

**First Year: Semester – II**

**Economics-II**

**Practical Exercise 9**

10 April 2025

1. The size distribution of population by Per Capita Expenditure (PCE) in Indian rupees per 30 days estimated through the 38th round of NSS is given below. Compute (i) the Head Count Ratio (H), (ii) the Income Gap Ratio (I) and (iii) the Sen Index of Poverty (PS) from the data. Assume that the poverty line is Rs. 15 per 30 days at 1960-61 prices. The official Consumer Price Index (CPI) for agricultural laborers in all-India rural (base: 1960-61 = 100) is Rs. 511.

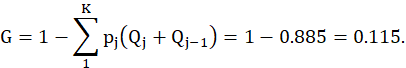
# **Table 1: The size distribution of population by PCE in Indian rupees per 30 days estimated through the 38th round of the Indian National Sample Survey (January – December 1983): the Rural Sector**

|  |  |  |
| --- | --- | --- |
| **PCE**  **(Rs./30 days)** | **Percentage of population** | **Average PCE**  **(Rs./30 days)** |
| 00 – 30 | 0.91 | 24.80 |
| 30 – 40 | 2.48 | 35.79 |
| 40 – 50 | 5.10 | 45.42 |
| 50 – 60 | 7.98 | 55.23 |
| 60 – 70 | 9.75 | 65.15 |
| 70 – 85 | 15.35 | 77.35 |
| … | … | … |

**Ans:** Poverty line in the 38th round is Rs. 15 5.11 = 76.65.



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **PCE**  **(Rs./30 days)** | **Percentage of population** | **Average PCE**  **(Rs./30 days)** | **Cumulative percentage** | **Col.(2)Col.(3)** |
| (1) | (2) | (3) | (4) | (5) |
| 00 – 30 | 0.91 | 24.80 | 0.91 | 22.568 |
| 30 – 40 | 2.48 | 35.79 | 3.39 | 88.759 |
| 40 – 50 | 5.10 | 45.42 | 8.49 | 231.642 |
| 50 – 60 | 7.98 | 55.23 | 16.47 | 440.735 |
| 60 – 70 | 9.75 | 65.15 | 26.22 | 635.213 |
| 70 – 85 | 15.35 | 77.35 | 41.57 |  |
| 70 – 76.65 | 38.7 – 26.22  = 12.48 | 73.325  = Mid value | 38.70 | 915.096 |
| Total | - | - | - | 2334.013 |



|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PCE**  **(Rs./30 days)** | **Proportion of population** | **Proportion of income** | **Cumulative proportion** | **Cumulative income** |  |
| (1) | (2) | (3) | (4) | (5) | (6) |
| 00 – 30 | 0.024 | 0.010 | 0.024 | 0.010 | 0.010 |
| 30 – 40 | 0.064 | 0.038 | 0.088 | 0.048 | 0.058 |
| 40 – 50 | 0.132 | 0.099 | 0.220 | 0.147 | 0.195 |
| 50 – 60 | 0.206 | 0.189 | 0.426 | 0.336 | 0.483 |
| 60 – 70 | 0.252 | 0.272 | 0.678 | 0.608 | 0.944 |
| 70 – 76.65 | 0.322 | 0.392 | 1.000 | 1.000 | 1.608 |
| **Total** | **1.000** | **1.000** | **-** | **-** |  |