Educational Institutions, enrolment, the pupil-teacher-ratio, the pupil-school-ratio, the teachers, female teachers, teachers' salaries and such other factors have been examined for a comparative study of the educational progress in the four States of Maharashtra, Gujarat, Bihar and Orissa. But this comparative method does not make it absolutely clear which of the states is ahead of the others because of the wide disparities existing between the achievement of one State and the other. To make up this deficiency in evaluation, one more comparative method is now being made use of. This method is completely based on the population in each of these States.

Method :-

(i) First of all, the total population of all the four States is taken into account. Thus, the population of Orissa is \( (P)_{s_1} \), that in Gujarat \( (P)_{s_2} \), in Maharashtra \( (P)_{s_3} \), and in Bihar \( (P)_{s_4} \). The total, then comes to,

\[
T_j = \sum_{j=1}^{k} (P)_{s_j}
\]
(ii) The index of population in each state for 1961-71 was arrived at with the help of the following formula:

\[
(X)_{sj} = \frac{(P)_{sj}}{T_j} \times 100
\]

(Where: \( j = 1, 2, 3, 4 \)).

(iii) To examine the three main variables at every level of education in a comparative manner, an index was determined for each of them. (a) Institutional index (b) Enrollment index and (c) Expenditure index.

(iv) At every level, the difference between the index of the above mentioned variables and that of the population was found out and the ranking for each State was decided upon.

Most of the experts on this subject have concurred that this method was quite adequate in evaluating the States' achievement and in deciding the rankings.

Distribution of Population among the Four States:

(Population Index: \( (X)_{sj} \))

It can be observed from Table 47 that the population index in 1960-61 was 13 for Orissa, 17 for Gujarat, 32 for Maharashtra and 38 for Bihar. In 1970-71 this index was 14 for Orissa, 17 for Gujarat, 33 for Maharashtra and 36 for Bihar.
TABLE 47

POPULATION INDEX OF THE FOUR STATES

<table>
<thead>
<tr>
<th>State (S_j)</th>
<th>1960-61</th>
<th>1970-71</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Population (lakh)</td>
<td>Population Index</td>
</tr>
<tr>
<td>Orissa</td>
<td>157.49</td>
<td>13</td>
</tr>
<tr>
<td>Gujarat</td>
<td>206.33</td>
<td>17</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>395.52</td>
<td>32</td>
</tr>
<tr>
<td>Bihar</td>
<td>464.56</td>
<td>38</td>
</tr>
</tbody>
</table>

\[
T_j = \sum_{j=1}^{k} (P_{S_j}) = 1223.92 \quad 100 \quad 1594.07 \quad 100
\]

\[
X_{S_j} = \frac{P_{S_j}}{T_j} \times 100
\]
### TABLE 48-A

**INEQUALITY AMONG THE FOUR STATES AT PRIMARY LEVEL**

<table>
<thead>
<tr>
<th>State</th>
<th>Population Index $X_j$</th>
<th>Institutions Index $Y_j$</th>
<th>Institutions Diff. $Y_j$</th>
<th>Enrolment Index $Z_j$</th>
<th>Enrolment Diff. $Z_j$</th>
<th>Expenditure Index $D_j$</th>
<th>Expenditure Diff. $D_j$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orissa</td>
<td>13</td>
<td>21.8</td>
<td>+10</td>
<td>14.1</td>
<td>0</td>
<td>206.1</td>
<td>13</td>
</tr>
<tr>
<td>Gujarat</td>
<td>17</td>
<td>12.0</td>
<td>-5</td>
<td>20.3</td>
<td>+2</td>
<td>287.9</td>
<td>18</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>32</td>
<td>25.4</td>
<td>-6</td>
<td>39.4</td>
<td>+5</td>
<td>693.0</td>
<td>42</td>
</tr>
<tr>
<td>Bihar</td>
<td>38</td>
<td>37.3</td>
<td>+1</td>
<td>31.8</td>
<td>-8</td>
<td>1443.0</td>
<td>27</td>
</tr>
</tbody>
</table>

**Year: 1960-61**

| Orissa       | 14                     | 27.7                     | +10                     | 19.3                  | -1                     | 1001.0                 | 21                     |
| Gujarat      | 17                     | 10.8                     | -7                      | 30.8                  | +3                     | 528.7                  | 11                     |
| Maharashtra  | 33                     | 28.5                     | -8                      | 58.4                  | +6                     | 2056.7                 | 42                     |
| Bihar        | 36                     | 46.8                     | +5                      | 42.1                  | -8                     | 1248.2                 | 26                     |

**Year: 1970-71**

| Orissa       | 14                     | 27.7                     | +10                     | 19.3                  | -1                     | 1001.0                 | 21                     |
| Gujarat      | 17                     | 10.8                     | -7                      | 30.8                  | +3                     | 528.7                  | 11                     |
| Maharashtra  | 33                     | 28.5                     | -8                      | 58.4                  | +6                     | 2056.7                 | 42                     |
| Bihar        | 36                     | 46.8                     | +5                      | 42.1                  | -8                     | 1248.2                 | 26                     |

**Note:**

1. $(y_j) = (y_p) - (X_j)$
2. $(z_j) = (z_p) - (X_j)$
3. $(d_j) = (d_p) - (X_j)$

The inequalities in educational situations among various categories in different States have been examined here by the various differences.
INEQUALITY AMONG THE FOUR STATES
IN THE FIELD OF EDUCATION

AT PRIMARY LEVEL

1861

1911

POPULATION

EXPENDITURE

MINNESOTA

MISSOURI

ILLINOIS

OHIO

CHART 1: ONE
INEQUALITY AMONG THE FOUR STATES AT PRIMARY STAGE OF EDUCATION

Table 48-A provides comparative figures for the development at the primary level of education in each of these four States under study.

Primary Education Institution Index \((Y_p)\) : 

\[
\text{Index} = \frac{\text{Primary Education Institutions}}{\text{Population Index}}
\]

In 1960-61 the primary institution index was 23 for Orissa, 12 for Gujarat, 26 for Maharashtra and 39 for Bihar. In 1970-71 the index was 24 for Orissa, 10 for Gujarat, 25 for Maharashtra and 41 for Bihar.

Rank According to \((Y_p)\):

Keeping in mind the difference between the population index and institutional index, of the State at Primary level of education, in 1960-61, Orissa ranked first (with +10), followed by Bihar (with +1), Gujarat (-5) and Maharashtra (-6) in that order. In 1970-71, the ranking remained the same the difference figures being +10, for Orissa, +5 for Bihar, -7 for Gujarat, and -3 for Maharashtra.

Thus, keeping in view the population index, Orissa was in an advantageous position in respect of the facilities for primary schools. In Bihar the evaluation was positive. But in the other two States, the evaluation was negative i.e. the proportion of primary schools in respect of population indices was less than that in Orissa & Bihar.
Enrolment Index \( (Z_p) \) := \[
\begin{array}{c}
\text{From the study of the enrolment index provided in the above table 48-1, it is seen that in 1960-61, the index was} \\
13 \text{ for Orissa, 19 for Gujarat, 39 for Maharashtra and} \\
30 \text{ for Bihar. In 1970-71, this index was 13 for Orissa,} \\
20 \text{ for Gujarat, 39 for Maharashtra and 23 for Bihar.} \\
\end{array}
\]

Rank according to the \( (z_p) \) :=

According to the difference between the enrolment index for primary level of education and population index of the State, in 1960-61 Maharashtra (with +6) ranked first, and Gujarat ranked second, followed by Orissa (with 0), and Bihar (with -6) in that order. In 1970-71 Maharashtra ranked first (with +6), Gujarat second (with +3), Orissa third (with -1), and Bihar last (with -3). Thus in the decade 1961-71, Maharashtra and Gujarat were clearly in advance of the other two States of Orissa and Bihar, while Bihar clearly lagged behind in respect of enrolment during the same period at the primary level of education.

Expenditure Index \( (D_p) \) := \[
\begin{array}{c}
\text{It was seen from the above table, that in 1960-61, index of educational expenditure at primary level of education was} \\
13 \text{ in Orissa, 18 in Gujarat, 42 in Maharashtra and 27 in Bihar,} \\
\text{while in 1970-71 it was 21 in Orissa, 11 in Gujarat, 42 in} \\
\text{Maharashtra and 26 in Bihar.} \\
\end{array}
\]
With respect to the difference between population and expenditure indices, in 1960-61 Maharashtra ranked first (with +10), Gujarat second (with +1), Orissa third (with 0) and Bihar fourth. In 1970-71 with the difference-figures of +9, +7, -6 and -10 respectively Maharashtra, Orissa, Gujarat and Bihar ranked in that order.

If the enrolment index was taken as a base instead of population index, according to the difference between the expenditure index and enrolment index at primary level of education, Maharashtra was clearly well ahead of other States, but in Bihar, the position was quite opposite during the decade 1961-71. In Orissa the proportion of primary schools was greater than that in Gujarat but the expenditure did not give it any advantageous position. The case of Orissa proves that the greater number of schools does not necessarily involve higher expenditure.

INEQUALITY AMONG FOUR STATES AT MIDDLE STAGE OF EDUCATION: (See, Graph : 2)

Table 43-B gives figures of all the three variables of (1) Educational Institutions, (2) Enrolment and (3) Expenditure at the Middle school level of education.
### Table 48-B

**Inequality Among the Four States at Middle Level**

<table>
<thead>
<tr>
<th>State</th>
<th>Population Index</th>
<th>Institutions No.</th>
<th>Index</th>
<th>Diff</th>
<th>Enrollment No.</th>
<th>Index</th>
<th>Diff</th>
<th>Expenditure</th>
<th>Index</th>
<th>Diff</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( x_{sj} )</td>
<td>( y_{m sj} )</td>
<td>( y_{mj} )</td>
<td>( y_{m j} )</td>
<td>( z_{m sj} )</td>
<td>( z_{mj} )</td>
<td>( z_{m j} )</td>
<td>( E_{m s j} )</td>
<td>( E_{m j} )</td>
<td>( \Delta_{m} )</td>
</tr>
<tr>
<td>Orissa</td>
<td>13</td>
<td>13.0</td>
<td>6</td>
<td>-0.7</td>
<td>10.7</td>
<td>0.7</td>
<td>-7</td>
<td>62.8</td>
<td>4</td>
<td>-9</td>
</tr>
<tr>
<td>Gujarat</td>
<td>17</td>
<td>61.6</td>
<td>30</td>
<td>+13</td>
<td>33.6</td>
<td>6.6</td>
<td>+5</td>
<td>455.8</td>
<td>27</td>
<td>+10</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>32</td>
<td>94.4</td>
<td>4.8</td>
<td>+12</td>
<td>7.2</td>
<td>2.8</td>
<td>+10</td>
<td>237.3</td>
<td>74</td>
<td>+22</td>
</tr>
<tr>
<td>Bihar</td>
<td>36</td>
<td>44.0</td>
<td>20</td>
<td>-18</td>
<td>23.8</td>
<td>3.8</td>
<td>-8</td>
<td>263.6</td>
<td>15</td>
<td>-23</td>
</tr>
</tbody>
</table>

**Year: 1960-61**

| Orissa      | 14               | 41.9             | 11    | -3   | 32.3           | 10    | -4   | 359.00      | 5     | -9   |
| Gujarat     | 17               | 105.6            | 26    | +9   | 72.4           | 21    | +4   | 1875.8      | 26    | +9   |
| Maharashtra | 33               | 167.5            | 42    | +9   | 144.8          | 43    | +10  | 4149.4      | 59    | +25  |
| Bihar       | 36               | 81.3             | 21    | -15  | 87.2           | 26    | +10  | 731.4       | 11    | +25  |

**Year: 1970-71**

Note: \( (1) \) \( y_{p sj} = \left( x_{p sj} \right) \); \( (2) \) \( z_{p sj} = \left( x_{m sj} \right) \); \( (3) \) \( \Delta_{p sj} = \left( x_{p sj} \right) \)

The inequalities in educational situations among various categories in different states have been examined here by the various differences.
INEQUALITY AMONG THE FOUR STATES
IN THE FIELD OF EDUCATION
[AT MIDDLE LEVEL]

ORISSA GUJARAT

MAHARASHTRA: BIHAR

PIE-CHART: TWO
Institutional Index: \( (Y_m) \) 

The above table shows that at the middle school level, the institutional index in 1960-61 was 6 for Orissa, 30 for Gujarat, 44 for Maharashtra and 20 for Bihar. In 1970-71, this index was 11 for Orissa, 26 for Gujarat, 42 for Maharashtra and 21 for Bihar.

Rank according to the \( (Y_m) \):

On the basis of the difference \( (Y_m) \) in 1960-61, Maharashtra ranked first (with +13), followed by Gujarat (with +12), Orissa (with -7) and Bihar (with -18) in that order.

In 1970-71 Maharashtra & Gujarat with an identical (+9) ranked joint first followed by Orissa (with -3) and Bihar (with -15) in that order.

Thus, in the decade 1961-71 in respect of the middle school facilities Maharashtra & Gujarat were appreciably ahead of the other two States of Orissa and Bihar.

Enrolment Index: \( (Z_m) \)

The study of the enrolment indices provided in the above table for 1960-61 gives the indices of 6 to Orissa, 22 to Gujarat, 42 to Maharashtra, and 30 to Bihar. In 1970-71, the indices changed to 10 in Orissa, 21 in Gujarat, 43 in Maharashtra, & 26 in Bihar.
Rank according to the $(a_i)_{S_d}$

The difference between the enrolment index and population index of the State in 1960-61 gives the first rank to Maharashtra (with +10 diff.). It is followed by Gujarat (with +5), Orissa (with -7) & Bihar (with -8) in that order. In 1970-71, the difference figure was +10 for Maharashtra, +5 for Gujarat, -4 for Orissa & -10 for Bihar. This shows a 4 percent improvement in Orissa in respect of progress index and a 2 per cent reduction in Bihar comparatively.

Expenditure Index : $(d_i)_{S_d}$

The above table also shows that in 1960-61 the expenditure index was 4 for Orissa, 27 for Gujarat, 53 for Maharashtra and 15 for Bihar. In 1970-71, it was 5 for Orissa, 26 for Gujarat, 53 for Maharashtra and 11 for Bihar.

Rank according to the $(d_i)_{S_d}$

On the basis of the difference between the expenditure and population index in 1960-61, Maharashtra ranked first (with +22), Gujarat second (with +10), Orissa third (with -9) and Bihar/fourth (with -23). In 1970-71 the ranking was unchanged i.e., Maharashtra (+25), first, followed by Gujarat (+9), Orissa (-9) and Bihar (-25) in that order.

It is clear that the imbalance in the expenditure indices in 1960-61 was really very wide. This conclusion is reached when the progress is examined in respect of
the enrolment index. This imbalance continues to be quite wide even in 1970-71. Thus, during the decade between 1961-1971, Maharashtra and Gujarat were quite visibly ahead of the remaining two States of Orissa and Bihar from the viewpoint of all the three main variables.

INEQUALITY AMONG THE FOUR STATES AT SECONDARY LEVEL OF EDUCATION (See, Graph 3).

Table 4.9 gives figures showing the progress at the secondary level of education.

Institutional Index ($y_i')$ :-

The above table gives the institutional index for each of the four States under study. In 1960-61, the index figure was 9 for Orissa, 21 for Gujarat, 22 for Maharashtra, and 29 for Bihar. In 1970-71, these figures were 14 for Orissa, 19 for Gujarat, 24 for Maharashtra, and 23 for Bihar.

Rank according to the ($y_i)$ :-

On the basis of the difference between the institutional index and population index in 1960-61, Maharashtra ranked first (with +9), followed by Gujarat (+4), Orissa (-4) and Bihar (-9) in that order. In 1970-71, the ranking remained unchanged though Maharashtra had the difference figure of +1, Gujarat +2, Orissa 0, and Bihar -13.
### TABLE 49

INEQUALITY AMONG THE FOUR STATES AT SECONDARY STAGE

<table>
<thead>
<tr>
<th>State</th>
<th>Population Index</th>
<th>Institutions</th>
<th>Enrolment</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$X_{s_j}$ (\text{'000})</td>
<td>$Y_{s_j}$</td>
<td>$Z_{s_j}$</td>
<td>$E_{s_j}$ (Lakh)</td>
</tr>
<tr>
<td>Orissa</td>
<td>13</td>
<td>4.5</td>
<td>9</td>
<td>44.7</td>
</tr>
<tr>
<td>Gujarat</td>
<td>17</td>
<td>10.9</td>
<td>21</td>
<td>171.1</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>32</td>
<td>21.9</td>
<td>41</td>
<td>338.5</td>
</tr>
<tr>
<td>Bihar</td>
<td>38</td>
<td>15.4</td>
<td>29</td>
<td>328.1</td>
</tr>
</tbody>
</table>

**Year: 1960-61**

| Orissa       | 14               | 16.6        | 14        | 180.8       | 9          | -5        | 616.9     | 9          | -5          |
| Gujarat      | 17               | 22.6        | 19        | 416.3       | 21         | +4        | 1557.6    | 22         | +5          |
| Maharashtra  | 33               | 52.0        | 44        | 861.1       | 43         | +10       | 4077.3    | 58         | +25         |
| Bihar        | 36               | 25.9        | 23        | 582.0       | 27         | -9        | 804.4     | 11         | -25         |

**Year: 1970-71**

Note: 
1. $(Y_{p_s}) - (X_{s_j})$; 
2. $(Z_{p_s}) - (X_{s_j})$; 
3. $(D_{p_s}) - (X_{s_j})$

The inequalities in educational situations among various categories in different states have been examined here by the various differences.
INEQUALITY AMONG THE FOUR STATES IN THE FIELD OF EDUCATION

STATE OF KANSAS

[Diagram showing various pie charts and data points related to education spending and population distribution.]
Keeping in mind the difference \( (y^*_s)_j \), it can be said that in the period between 1961 and 1971, there was an improvement in the indices of all the four States under study though there is a noticeable lag in the case of Bihar from the point of comparison with the other three States under study.

**Enrolment Index : \( (Z^*_s)_j \)**

The above table also gives the enrolment indices for all the four States under study. The enrolment index in 1960-61 was 6 for Orissa, 19 for Gujarat, 38 for Maharashtra and 37 for Bihar. In 1970-71 it was 9 for Orissa, 21 for Gujarat, 43 for Maharashtra and 27 for Bihar.

**Rank according to the \( (Z^*_s)_j \)**

On the basis of the difference between the enrolment index and population index, in 1960-61 Maharashtra ranked first (with +6) followed by Gujarat (with +2), Bihar (with -1) and Orissa (with -7) in that order. In 1970-71, Maharashtra and Gujarat continued to hold the first two positions with the difference figures of +10 and +4 respectively. In that year Orissa (with -5) was ahead of Bihar ( -9).

Keeping in mind the difference between the enrolment index and the population index, it can be concluded that during the decade 1961-71, there was no appreciable improvement.
in enrolment in Bihar and Orissa in comparison with that in Maharashtra and Gujarat. The other point that should be noted is that Bihar which stood third in 1960-61 lost its rank to Orissa in 1970-71.

Expenditure Index \( (D_s) \):

Table shows that the index for educational expenditure in 1960-61 was 5 for Orissa, 21 for Gujarat, 56 for Maharashtra and 18 for Bihar. In 1970-71, the figure changed to 9 for Orissa, 22 for Gujarat, 58 for Maharashtra and 11 for Bihar.

Rank according to the \( (d_s) \):

On the basis of the difference between the expenditure index and the population index in 1960-61 Maharashtra ranked first (with +24), followed by Gujarat (with +4), Orissa (with -8) and Bihar (with -25) in that order.

On the basis of the difference between the expenditure index and the enrolment index, Maharashtra ranked first, Gujarat second, Orissa third and Bihar fourth. Thus, it is clear that Bihar is also lagging behind the other three States in respect of the enrolment of students at the secondary level of education.
INEQUALITY AMONG THE FOUR STATES AT HIGHER LEVEL OF EDUCATION:

Comparative figures for all the four States under study in respect of higher education are given in the following Table 50.

Institutional Index \((Y_h)\):

These figures show that in 1960-61, the index for Orissa was 10, for Gujarat 17, Maharashtra 46 and for Bihar 27. In 1970-71, it was 8 for Orissa, 20 for Gujarat, 45 for Maharashtra and 27 for Bihar.

Rank according to the \((Y_h)\):

On the basis of the difference between the institutional index and the population index in 1960-61, Maharashtra (with +14) ranked first, Gujarat (with 0) and stood second, Orissa (with -3) was third and Bihar (with -14) came last. In 1970-71, the rankings remain unchanged with the difference figures +12 for Maharashtra, +3 for Gujarat, -6 for Orissa and -9 for Bihar respectively.

Enrolment Index \((Z_h)\):

The same table gives the indices of enrolment at the higher level of education. They show that in 1960-61, the index was 6 for Orissa, 18 for Gujarat, 42 for Maharashtra and 34 for Bihar. In 1970-71, the index-figures were 7, 19, 47, and 27 for Orissa, Gujarat, Maharashtra and Bihar respectively.
### TABLE : 50

**INEQUALITY AMONG THE FOUR STATES AT HIGHER EDUCATION LEVEL**

<table>
<thead>
<tr>
<th>States</th>
<th>Population Index $x_{sj}$</th>
<th>Institutions Index $y_{sj}$</th>
<th>Diff. $(y_{sj}) - (y_{h})_{sj}$</th>
<th>Enrolment Index $z_{sj}$</th>
<th>Diff. $(z_{sj}) - (z_{h})_{sj}$</th>
<th>Expenditure Index $a_{sj}$</th>
<th>Diff. $(a_{sj}) - (a_{h})_{sj}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orissa</td>
<td>13</td>
<td>55</td>
<td>-10</td>
<td>14.5</td>
<td>6</td>
<td>7.6</td>
<td>6</td>
</tr>
<tr>
<td>Gujarat</td>
<td>17</td>
<td>97</td>
<td>0</td>
<td>48.9</td>
<td>18</td>
<td>32.1</td>
<td>24</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>32</td>
<td>259</td>
<td>+14</td>
<td>112.7</td>
<td>142</td>
<td>66.4</td>
<td>21</td>
</tr>
<tr>
<td>Bihar</td>
<td>38</td>
<td>151</td>
<td>-11</td>
<td>92.3</td>
<td>34</td>
<td>28.1</td>
<td>21</td>
</tr>
</tbody>
</table>

**Year 1970-71:**

<table>
<thead>
<tr>
<th>States</th>
<th>Population Index $x_{sj}$</th>
<th>Institutions Index $y_{sj}$</th>
<th>Diff. $(y_{sj}) - (y_{h})_{sj}$</th>
<th>Enrolment Index $z_{sj}$</th>
<th>Diff. $(z_{sj}) - (z_{h})_{sj}$</th>
<th>Expenditure Index $a_{sj}$</th>
<th>Diff. $(a_{sj}) - (a_{h})_{sj}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orissa</td>
<td>14</td>
<td>109</td>
<td>-6</td>
<td>58.3</td>
<td>7</td>
<td>53.8</td>
<td>8</td>
</tr>
<tr>
<td>Gujarat</td>
<td>17</td>
<td>275</td>
<td>+3</td>
<td>175.1</td>
<td>19</td>
<td>162.2</td>
<td>25</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>33</td>
<td>615</td>
<td>+12</td>
<td>429.1</td>
<td>47</td>
<td>300.3</td>
<td>46</td>
</tr>
<tr>
<td>Bihar</td>
<td>36</td>
<td>356</td>
<td>-9</td>
<td>248.3</td>
<td>27</td>
<td>138.4</td>
<td>21</td>
</tr>
</tbody>
</table>

Note: (1) $(y_{pj}) = (y_{pj}) - (x)_{sj}$; (2) $(z_{pj}) = (z_{pj}) - (x)_{sj}$; (3) $(a_{pj}) = (a_{pj}) - (x)_{sj}$

The Inequalities in educational situations among various categories in different States have been examined here by the various differences.
Rank according to the (d) :-

On the basis of the difference between the enrolment index and the population index in 1960-61, Maharashtra ranked first (with +10). It was followed by Gujarat (with +1), Bihar (with -4), and Orissa (with -7) in that order.

In 1970-71, the rankings were Maharashtra (+4), Gujarat (+2), Orissa (-7), and Bihar (-9) in that order.

With respect to the increase in enrolment during the decade 1961-71, Maharashtra, Gujarat, Orissa, and Bihar ranked in that order. Bihar, which stood third in 1960-61 in respect of enrolment, slipped to the last position in 1970-71.

Expenditure Index (D) :-

The expenditure index figures for higher education given in the above table show that in 1960-61, the index was 6 for Orissa, 4 for Gujarat, 49 for Maharashtra, and 21 for Bihar. In 1970-71, it was 8 for Orissa, 25 for Gujarat, 46 for Maharashtra, and 21 for Bihar.

Rank according to the (d) :-

After examining the index of population and educational expenditure, the difference of these two was stated by ranks. Thus, these ranks show Maharashtra first, followed by Gujarat, Orissa, and Bihar in that order in 1961 and also in 1971.
On the basis of the differences between expenditure index and enrolment index, in 1960-61 Maharashtra (with +17) ranked first, followed by Gujarat (with +6), Orissa (with 0) and Bihar (with -13) in that order. In 1970-71, Gujarat (with +6) went ahead followed by Orissa (with +1), Maharashtra (-1) and Bihar (with -6) in that order.

INEQUALITY AMONG THE FOUR STATES IN THE FIELD OF EDUCATION:- (See Graph 5).

The following Table 5 gives figures of educational institutions, enrolment and expenditure at all levels of education in all the four States under study.

<table>
<thead>
<tr>
<th>Institutional Index ($X_w$)</th>
<th>$s_j$</th>
</tr>
</thead>
</table>

The institutional indices given in the above table show that in 1960-61, Orissa had the figure of 19, Gujarat 16, Maharashtra 30, and Bihar 35. In 1970-71, it was 20 for Orissa, 15 for Gujarat, 31 for Maharashtra and 34 for Bihar.

Rank according to the ($Y_w$) $s_j$.

According to the difference between institutional index and population index of all the four States in 1960-61, Orissa (with +6) was the first. It was followed by Gujarat (with +1), Maharashtra (with -2) and Bihar (with -3), in that order. In 1970-71, the difference between the institutional index and the population index was negative in the States of Maharashtra, Gujarat and Bihar, it was positive only in Orissa.
TABLE : 51
INEQUALITY AMONG THE FOUR STATES IN THE FIELD OF EDUCATION (AS A WHOLE )

<table>
<thead>
<tr>
<th>State</th>
<th>Institutions</th>
<th>Enrolment</th>
<th>Total Expenditure</th>
<th>Direct Expenditure</th>
<th>Indirect Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$x_{ij}$</td>
<td>$y_{ij}$</td>
<td>$z_{ij}$</td>
<td>$s_{ij}$</td>
<td>$t_{ij}$</td>
</tr>
<tr>
<td></td>
<td>Index</td>
<td>Diff.</td>
<td>Index</td>
<td>Diff.</td>
<td>Index</td>
</tr>
<tr>
<td>Orissa</td>
<td>19</td>
<td>+6</td>
<td>11</td>
<td>-2</td>
<td>7</td>
</tr>
<tr>
<td>Gujarat</td>
<td>16</td>
<td>-1</td>
<td>20</td>
<td>+3</td>
<td>20</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>30</td>
<td>-2</td>
<td>38</td>
<td>+6</td>
<td>50</td>
</tr>
<tr>
<td>Bihar</td>
<td>35</td>
<td>-3</td>
<td>31</td>
<td>-7</td>
<td>23</td>
</tr>
</tbody>
</table>

Year : 1960-61

<table>
<thead>
<tr>
<th>State</th>
<th>Institutions</th>
<th>Enrolment</th>
<th>Total Expenditure</th>
<th>Direct Expenditure</th>
<th>Indirect Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$x_{ij}$</td>
<td>$y_{ij}$</td>
<td>$z_{ij}$</td>
<td>$s_{ij}$</td>
<td>$t_{ij}$</td>
</tr>
<tr>
<td></td>
<td>Index</td>
<td>Diff.</td>
<td>Index</td>
<td>Diff.</td>
<td>Index</td>
</tr>
<tr>
<td>Orissa</td>
<td>20</td>
<td>+6</td>
<td>11</td>
<td>-3</td>
<td>10</td>
</tr>
<tr>
<td>Gujarat</td>
<td>15</td>
<td>-2</td>
<td>20</td>
<td>+3</td>
<td>21</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>31</td>
<td>-2</td>
<td>42</td>
<td>+9</td>
<td>52</td>
</tr>
<tr>
<td>Bihar</td>
<td>34</td>
<td>-2</td>
<td>27</td>
<td>-9</td>
<td>17</td>
</tr>
</tbody>
</table>

Year : 1970-71

Note: (1) $(y_{ij}) = (i_{ij}) - (X)_{ij}$
(2) $(z_{ij}) = (z_{ij}) - (X)_{ij}$
(3) $(v_{ij}) = (d_{ij}) - (X)_{ij}$
(4) $(t_{ij}) = (t_{ij}) - (X)_{ij}$
(5) $(u_{ij}) = (I_{ij}) - (X)_{ij}$

The inequalities in educational situations among various categories in different States have been examined here by the various differences.
INEQUALITIES AMONG THE FOUR STATES
IN THE FIELD OF EDUCATION
AS A WHOLE
Enrolment Index : \( (Z_n)_{s_j} \)

The figures in the same table shows that in 1960-61, the enrolment index was 11 for Orissa, 20 for Gujarat, 38 for Maharashtra and 31 for Bihar. In 1970-71, the index was 11 for Orissa, 20 for Gujarat, 42 for Maharashtra and 27 for Bihar.

Rank according to the \( (Z_n)_{s_j} \):

On the basis of the difference between enrolment and population indices in the States in 1960-61, Maharashtra (with +6) ranked first, Gujarat (with +3) second, Orissa (with -2) third and Bihar (with -7) fourth. In 1970-71, the rankings remained unchanged, the difference figures being +9 for Maharashtra, +3 for Gujarat, -3 for Orissa and -9 for Bihar.

Thus, during the decade of 1961-71 Maharashtra ranked first, followed by Gujarat, Orissa and Bihar in that order even in respect of enrolment (progress) increase.

Expenditure Index : \( (T)_{s_j} \)

A study of the total expenditure index provided in the same table shows that in 1960-61, the index was 11 for Orissa, 20 for Gujarat, 38 for Maharashtra and 31 for Bihar. In 1960-61, it was 10 for Orissa, 21 for Gujarat, 52 for Maharashtra and 17 for Bihar.
Rank according to the \((t)_{s_j}\) :-

On the basis of the difference between the total expenditure index and the population index of the States in 1960-61, Maharashtra (with +6) ranked first, followed by Gujarat (with +3), Orissa (with -2) and Bihar (with -7) in that order. In 1970-71, the rankings remained the same, the difference figures being +19 for Maharashtra, +4 for Gujarat, -4 for Orissa and -19 for Bihar.

Direct Expenditure Index \((D_{w})_{s_j}\) :-

It has also been seen from the above that the direct expenditure index in 1960-61 was 51 for Maharashtra, 21 for Gujarat, 7 for Orissa and 17 for Bihar. In 1970-71, this figure was 10 for Orissa, 22 for Gujarat, 52 for Maharashtra and 16 for Bihar.

Rank according to the \((d_{w})_{s_j}\) :-

Thus, in respect of the total direct expenditure index in relation to population index, Maharashtra ranked first followed by Gujarat, Orissa and Bihar in that order during the period 1961 to 1971.

Indirect Expenditure Index \((I_{w})_{s_j}\) :-

In 1960-61, the index for indirect expenditure on education was 9 for Orissa, 14 for Gujarat, 49 for Maharashtra and 28 for Bihar. The ranking on the basis of the difference between the indirect expenditure index and population index was unchanged during the decade.