CHAPTER IV

METHODOLOGY AND CONCEPTS USED IN THE STUDY

Research is an original contribution to the existing stock of knowledge making for its advancement. It is the pursuit of truth with the help of study, observation, comparison and experiment. It is the systematic approach concerned with finding of problem, formulating hypotheses, collecting the facts or data, analysing the facts and reaching certain conclusion either in the form of solutions towards concerned problem or in certain generalizations for some theoretical formulation. The present study tries to explore the primary educational status of Tamil Nadu state in general and Virudhunagar District in particular.

This chapter consists of two sections. The first section deals with methodology adopted by the researcher in the present study. The second section deals with concepts used in this study.

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SECTION I

Methodology of the Study

Several steps have been involved in methodology of this study is as follows:

1. Selection of the study area,

2. Selection of the sample schools,

3. Method of collection of data and

4. Framing of statistical tools for the analysis of data.

1. Selection of the Study Area

Virudhunagar district in Tamil Nadu state has been selected as the study area for several specific reasons. This district is considered to be one of the backward districts in the state not only in terms of economic well being of the people but also of literacy of the people in this district. Though this district is the forerunner in various aspects of school education among the districts of Tamil Nadu state, still one fifth of the people living in this district are being illiterate. The block wise literacy rate in this district is presented in Table 4.1. As per the
Census 2011\textsuperscript{74} (Provisional) data, literacy rate of this district was only 80.70 and it was 88.50 and 73.10 in the case of male and female literacy rate respectively. Therefore it is understood that still this district has to go for a long way to make this district as cent per cent literacy district though it has secured the first place in pass rate in public examinations conducted by the School Education Department of the state for more than twenty five years successively. The role of primary schools is inevitable to achieve this goal. Therefore the researcher has chosen Virudhunagar district as the study area to analyse the various aspects of the primary school education.

\textsuperscript{74} Sarva Shiksha Abhiyan, Virudhunagar District, \textit{Annual Work Plan and Budget 2013-14}, Tamil Nadu State Mission of Education For All, District Project Office, Virudhunagar, Tamil Nadu. P.17.
Table 4.1

Educational Block Wise Literacy Rate in Virudhunagar District in 2008 and 2011

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aruppukottai</td>
<td>79.22</td>
<td>63.69</td>
<td>71.46</td>
<td>95.86</td>
<td>84.48</td>
<td>90.17</td>
</tr>
<tr>
<td>2</td>
<td>Kariapatti</td>
<td>59.12</td>
<td>47.41</td>
<td>53.27</td>
<td>90.86</td>
<td>77.48</td>
<td>84.17</td>
</tr>
<tr>
<td>3</td>
<td>Narikkudi</td>
<td>65.66</td>
<td>40.17</td>
<td>52.92</td>
<td>72.86</td>
<td>52.48</td>
<td>62.67</td>
</tr>
<tr>
<td>4</td>
<td>Thiruchuli</td>
<td>70.98</td>
<td>50.19</td>
<td>60.59</td>
<td>81.86</td>
<td>67.48</td>
<td>74.67</td>
</tr>
<tr>
<td>5</td>
<td>Sattur</td>
<td>72.44</td>
<td>54.23</td>
<td>63.34</td>
<td>91.86</td>
<td>77.98</td>
<td>84.92</td>
</tr>
<tr>
<td>6</td>
<td>Sivakasi</td>
<td>74.12</td>
<td>58.33</td>
<td>66.23</td>
<td>89.86</td>
<td>75.28</td>
<td>82.57</td>
</tr>
<tr>
<td>7</td>
<td>Srivilliputhur</td>
<td>75.35</td>
<td>57.72</td>
<td>66.54</td>
<td>91.86</td>
<td>75.18</td>
<td>83.52</td>
</tr>
<tr>
<td>8</td>
<td>Rajapalayam</td>
<td>74.53</td>
<td>58.29</td>
<td>66.41</td>
<td>95.86</td>
<td>79.48</td>
<td>87.67</td>
</tr>
<tr>
<td>9</td>
<td>Vembakottai</td>
<td>69.42</td>
<td>49.23</td>
<td>59.33</td>
<td>87.86</td>
<td>71.68</td>
<td>79.77</td>
</tr>
<tr>
<td>10</td>
<td>Virudhunagar</td>
<td>77.54</td>
<td>63.40</td>
<td>70.47</td>
<td>94.86</td>
<td>78.28</td>
<td>86.57</td>
</tr>
<tr>
<td>11</td>
<td>Watrap</td>
<td>66.65</td>
<td>47.28</td>
<td>56.97</td>
<td>79.86</td>
<td>64.28</td>
<td>72.07</td>
</tr>
<tr>
<td>District Total</td>
<td></td>
<td>71.37</td>
<td>53.63</td>
<td>62.50</td>
<td>88.50</td>
<td>73.10</td>
<td>80.70</td>
</tr>
</tbody>
</table>


** Sarva Shiksha Abhiyan, Virudhunagar District, Annual Work Plan and Budget 2013-14, Tamil Nadu State Mission of Education For All, District Project Office, Virudhunagar, Tamil Nadu. P.17.
Educational Administrative Structure of the Study Area

For the educational administrative purpose, Virudhunagar revenue district is bifurcated into two educational districts such as Aruppukottai Educational District and Virudhunagar Educational District. Moreover, this bifurcation made into trifurcation as adding one more educational district namely Srivilliputhur Educational District in the year 2009-10. This new educational district is formed only for administrating the secondary and higher secondary schools rather than primary schools in Virudhunagar district.

As this study is concerned about only the primary school education, it is attempted to analyse various objectives of the study only at two educational districts level namely Aruppukottai Educational District and Virudhunagar Educational District and its sub-units such as “educational blocks” with reference to educational development that has taken place in the recent past. The name of eleven educational blocks in two educational districts of the study area, Virudhunagar district is given in Table 4.2. Educational block wise maps of the two educational districts were also given.
Figure 4.1
Aruppukottai Educational District Map – Educational Block Wise
(Educational District – 1)

Figure 4.2
Virudhunagar Educational District Map - Educational Block Wise
(Educational District – II)
Table 4.2

Name of the Educational Blocks of Two Educational Districts in Virudhunagar District

<table>
<thead>
<tr>
<th>Name of the Educational District</th>
<th>Name of the Educational Blocks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aruppukottai Educational District (Educational District-I)</td>
<td>1. Aruppukottai</td>
</tr>
<tr>
<td></td>
<td>2. Kariapatti</td>
</tr>
<tr>
<td></td>
<td>3. Narikkudi</td>
</tr>
<tr>
<td></td>
<td>4. Thiruchuli</td>
</tr>
<tr>
<td></td>
<td>5. Sattur</td>
</tr>
<tr>
<td>Virudhunagar Educational District (Educational District-II)</td>
<td>6. Sivakasi</td>
</tr>
<tr>
<td></td>
<td>7. Srivilliputhur</td>
</tr>
<tr>
<td></td>
<td>8. Rajapalayam</td>
</tr>
<tr>
<td></td>
<td>9. Vembakottai</td>
</tr>
<tr>
<td></td>
<td>10. Virudhunagar</td>
</tr>
<tr>
<td></td>
<td>11. Watrap</td>
</tr>
</tbody>
</table>

Source: - Sarva Shiksha Abhiyan, Virudhunagar District, Annual Work Plan and Budget (various years), Tamil Nadu State Mission of Education For All, District Project Office, Virudhunagar, Tamil Nadu.

Table 4.2 had shown that in Aruppukottai Educational District there are five educational blocks namely Aruppukottai, Kariapatti, Narikkudi, Thiruchuli and Sattur. Similarly, Virudhunagar Educational District consists of six educational blocks namely Sivakasi, Srivilliputhur, Rajapalayam, Vembakottai, Virudhunagar and Watrap. Thus the entire study area is taken into consideration in this study in the form of two educational districts namely Aruppukottai and Virudhunagar educational district. For the sake of
convenience and for the purpose of easy readability and understanding, hereafter the Aruppukottai Educational District is referred to as Educational District-I and the Virudhunagar Educational District as the Educational District-II.

Pilot Study

A research should be carried out towards to find or analyse the specific problems and to suggest the ways to get rid of these problems. In this manner it is very essential for a researcher to understand about his research problem. The formulation of a research problem is the first step in a scientific enquiry. It is in need of some preliminary knowledge in a particular research problem. The researcher got this knowledge from the available literature on “Economics of Education” particularly the school education.

To understand the structure of the school education and prevailing condition of primary school education in the study area, a pilot study was carried out prior to the main field survey. The researcher visited various schools in the study area to find out the possibility of conducting this study. The researcher met some of the
Headmasters and Headmistress, retired teachers, teachers in-service, staff of the school education departments namely Chief Educational Officers, District Elementary Educational Officer, Assistant Elementary Educational Officers, various staffs and field workers under ‘Sarva Shiksha Abhiyan’ (SSA) scheme and Assistant Director of Statistics and discussed with them about the various aspects of the present study. These discussions led the researcher to take the decision on various possibilities of conducting this research. On the basis of the gathered knowledge the researcher came to the tentative conclusion about the status of the primary school education in the study area, Virudhunagar district.

**Number of Primary Schools in Virudhunagar District**

The number of primary schools located in this district is classified into four major categories. They are the lower primary schools which have I to V standard only, the upper primary schools or middle schools with primary sections that is I to VIII standards, high schools with primary and upper primary sections and the higher secondary schools with primary and upper primary sections. Number of primary schools includes, in this study, the number of either lower
primary schools or upper primary schools in above all mentioned four
categories of schools in all educational blocks of two educational
districts of the study area in the year 2009-10 and they are presented in
Table 4.3. These schools are classified into three categories on the
basis of the type of management of the school.
Table 4.3

**Number of Primary Schools in Virudhunagar District during 2009-10**

<table>
<thead>
<tr>
<th>Educational District</th>
<th>Name of Educational Block</th>
<th>Number of Primary Schools in different types of management</th>
<th>Block wise Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Gov’t and Local Body</td>
<td>Private aided</td>
</tr>
<tr>
<td>I</td>
<td>1. Aruppukottai</td>
<td>54</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>2. Kariapatti</td>
<td>111</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>3. Narikkudi</td>
<td>94</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>4. Thiruchuli</td>
<td>84</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>5. Sattur</td>
<td>81</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>424</strong></td>
<td><strong>145</strong></td>
</tr>
<tr>
<td>II</td>
<td>1. Sivakasi</td>
<td>101</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>2. Srivilliputhur</td>
<td>87</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>3. Rajapalayam</td>
<td>67</td>
<td>118</td>
</tr>
<tr>
<td></td>
<td>4. Vembakottai</td>
<td>79</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>5. Virudhunagar</td>
<td>103</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>6. Watrap</td>
<td>46</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>483</strong></td>
<td><strong>348</strong></td>
</tr>
</tbody>
</table>

**Virudhunagar District Total**

|                                | 907 | 493 | 187 | 1587 |

Source: - Sarva Shiksha Abhiyan, Virudhunagar District, Annual Work Plan and Budget (various years), Tamil Nadu State Mission of Education For All, District Project Office, Virudhunagar, Tamil Nadu.
The Table 4.3 has shown that there were 1587 primary schools in the study area in the year 2009-10. Among them the number of schools managed by government or local body, private aided and private aided management schools were 907, 493 and 187 respectively.
2. Selection of Sample Primary Schools

For the purpose of collection of primary data, the sample primary schools have to be selected from the entire population that is from the total number of primary schools in Virudhunagar district.

Universe of the Study

The universe of this study is the lower primary and upper primary schools located in eleven educational blocks in two educational districts of the study area – Virudhunagar District. The schools run by private unaided management are excluded and two types of management schools namely;

1. Government or local body schools and
2. Private aided management schools

are only taken for collecting primary data for this study.

The schools with I-V classes called as ‘lower primary schools’ and with I-VIII classes called as ‘upper primary schools’. There are some lower primary and upper primary classes in secondary and higher secondary schools. These schools were excluded for primary data collection in this study. That is the lower primary and upper primary schools as the independent unit were only taken in to
consideration for primary data collection. Thus, the *size of universe for the study became 1208 schools in 2011-12*. In Table 4.4 the independent units of primary schools in Virudhunagar district are given.

Table 4.4

<table>
<thead>
<tr>
<th>Educational District</th>
<th>Lower Primary Schools</th>
<th>Upper Primary Schools</th>
<th>Virudhunagar District Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Government</td>
<td>Private Aided</td>
<td>Total</td>
</tr>
<tr>
<td>I</td>
<td>280</td>
<td>105</td>
<td>385</td>
</tr>
<tr>
<td>II</td>
<td>310</td>
<td>237</td>
<td>547</td>
</tr>
<tr>
<td>Virudhunagar District</td>
<td>590</td>
<td>342</td>
<td>932</td>
</tr>
</tbody>
</table>

Source: Sarva Shiksha Abhiyan, Virudhunagar District, Annual Work Plan and Budget (various years), Tamil Nadu State Mission of Education For All, District Project Office, Virudhunagar, Tamil Nadu.
Sampling Method

Multi-stage sampling method is adopted to select the sample of 130 schools from the universe of 1208 schools. Multi-stage sampling is a further development of the principle of cluster sampling. In cluster sampling the total population is divided into a number of relatively small subdivisions which are themselves clusters of still smaller units and then some of these clusters are randomly selected for inclusion in the overall sample. Following the Multi-stage sampling method the total population of this study is divided into four clusters namely;

- Educational District,
- School Category,
- School Management and
- Educational Block

on the need base of the research and then finally the samples were selected conveniently from the last cluster that is from each individual educational block in the study area.

---

First Stage – Sampling from Two Educational Districts

The source list or sampling frame of this study is 1208 primary schools in Virudhunagar district. This sampling frame is divided into two educational districts on the basis of geographical division as the formation of first stage cluster in the study area. The number of primary schools is 500 and 708 in Educational District-I and Educational District-II respectively. In this stage 56 schools from Educational District-I and 74 from Educational District-II have been selected.

Second Stage - Sampling from Two Categories of Schools

In the second stage, the schools of each educational district are further divided into two such as lower primary schools and upper primary schools. At this stage 39 lower primary schools out of 385 and 17 upper primary schools out of 115 are selected from Educational District-I. Similarly, 57 of lower primary schools from 547 and 17 upper primary schools from 161 schools are selected from Educational District-II. Thus nearly ten per cent of the universe is taken as the sample size.
Third Stage – Sampling from Two Types of Management of the Schools

In the third stage, both categories of schools of two educational districts were further divided into two on the basis of type of management of the school. They are government and local body management and private aided management schools. In the case of lower primary schools there were 280 government and local body management schools from which 30 were selected and from 105 private aided management primary schools nine schools were selected in Educational District-I. Likewise, in the case of selection of sample upper primary schools, 11 government and local body managed schools out of 99 schools and six out of 16 private aided management upper primary schools were selected from Educational District-I.

Similarly, 32 government and local body managed lower primary schools out of 310 schools and 25 out of 237 private aided management lower primary schools were selected from Educational District-II. In the case of upper primary schools 11 government and local body managed upper primary schools out of 112 of this category and six of private aided management upper primary schools out of 49 of this category of schools were selected.
Fourth Stage - Sampling from Eleven Educational Blocks

The fourth and last cluster in the selection of sample is ‘educational blocks’ in two educational districts. There are five and six educational blocks in Educational District-I and Educational District-II respectively. This is the bottom level cluster in the sampling technique. The number of sample schools from each block, from each category of school and from each type of management of school is selected proportionately in this study. That is an equal weightage, approximately an average of ten per cent of schools, is given to each block, in each category of school and in each type of management schools. The school category wise, educational block-wise and management-wise selection of sampling schools in both educational districts is given in Table 4.5.

Distribution of Sample Primary Schools in Virudhunagar District during 2011-12

Sample primary schools in respect of educational block wise, type of school management wise and school category wise in two educational districts of the Virudhunagar district during 2011-12 is presented in Table 4.5.
Table 4.5
Distribution of Sample Schools in
Virudhunagar District during 2011-12

<table>
<thead>
<tr>
<th>Name of the Educational Blocks</th>
<th>No. of Sample Lower Primary School</th>
<th>No. of Sample Upper Primary School</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Government and Local Body</td>
<td>Private Aided</td>
<td>Black Wise Total</td>
</tr>
<tr>
<td>Educational District-I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Aruppukottai</td>
<td>4</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>2. Kariapatti</td>
<td>7</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>3. Narikkudi</td>
<td>7</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>4. Thiruchuli</td>
<td>6</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>5. Sattur</td>
<td>6</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>9</td>
<td>39</td>
</tr>
<tr>
<td>Educational District-II</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Sivakasi</td>
<td>6</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>2. Srivilliputhur</td>
<td>6</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>3. Rajapalayam</td>
<td>5</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td>4. Vembakottai</td>
<td>5</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>5. Virudhunagar</td>
<td>7</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>6. Watrap</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>25</td>
<td>57</td>
</tr>
<tr>
<td>Virudhunagar District Total</td>
<td>62</td>
<td>34</td>
<td>96</td>
</tr>
</tbody>
</table>

Source: - Computed from Secondary Data.
Table 4.5 has shown that the number of sample schools selected in each educational block of the two educational districts in the study area on the basis of total number of schools during the academic year 2011-12. Out of 130 total number of sample schools in the study area 56 were selected from Educational District-I and 74 were from Educational District-II. In other words 96 sample schools were lower primary and 34 were upper primary schools. On the basis of type of school management, Table 4.5 had shown that 84 were under government and local body management and 46 were under private aided management. The survey has been conducted among these selected 130 schools’ Headmasters/Headmistress by using the interview schedule.
3. **Method of Collection of Data**

The present study is based both on secondary as well as primary data. The study period covers ten academic years from 2000-01 to 2009-10 as far as secondary data is concerned. The data of the primary schools in various aspects were collected at educational district and educational block level from the year 2000-01 because in this year only the central government scheme of the “Sarva Shiksha Abhiyan” (Derived from Hindi language which meant that ‘Education For All’) is implemented in Virudhunagar District. The data base of the school education was made proper only from the conception of this scheme.

**Collection of Secondary Data**

Secondary data used in this study were collected for the period from 2000-01 to 2009-10. They are stage-wise data. It means that the information relating to lower primary and upper primary schools were collected from all schools irrespective of the categories of school. For example, the enrollment of students was collected not only from the independent unit of primary and upper primary schools in the study area but also from the secondary and higher secondary schools which had either lower or upper primary sections. Other kind of data is the
institution-wise data and if the enrollment of students is considered in a particular category of school alone, it is termed as institution-wise data.\footnote{Arun C.Metha, \textit{Indicators of Educational Development: Concept and Definitions}, Reading Material, Quantitative Aspects of Educational Planning, Diploma in Educational Planning and Administration, National Institute of Educational Planning and Administrations, New Delhi, 2003, P.8.}

**Secondary data** were collected from both published and unpublished sources to discuss the \textbf{first and second objectives} of the study. To study the first and second objectives, the data on various variables such as number of schools, enrollment of students, gross enrollment ratio, net enrollment ratio, completion rate and dropout rate were collected. The information on these variables were collected for both lower primary and upper primary schools of all educational blocks of two educational districts in Virudhunagar district. Various sources used to collect the secondary data are;

1. Annual Work Plan and Budget of “Sarva Shiksha Abhiyan” of Virudhunagar District prepared by Tamil Nadu State Mission of Education for All, District Project Office, Virudhunagar.
4. National Institute of Educational Planning and Administration, New Delhi.


6. Center for Developmental Studies, Thiruvandhapuram.

7. Madras Institute for Developmental Studies, Channai.

8. District Information System for Education (DISE), State Report, Sarva Shiksha Abhiyan, Tamil Nadu State Mission of Education For All, State Project Directorate, Tamil Nadu.

9. Published and unpublished reports, hand books, policy notes and pamphlets of Directorate of School Education of Tamil Nadu.

10. The researcher has also downloaded the information from the various websites namely;
    a. www.indiastat.com,
    b. www.education.nic.com,
    c. www.selected educational statistics.com,
    d. www.pallikalvi.com,
    e. www.tn.gov.in/schooleducation
    f. www.science direct.com,
    g. www.jstor.com,
Collection of Primary Data

Primary data were used to study the third objective of the study. The third objective of this study is to analyse the inequality aspects in primary school education of the study area in terms of;

I. School related indicators;
   1. Number of classrooms
   2. Number of Teachers
   3. Size of enrollment
   4. Student-Classroom Ratio and
   5. Pupil-Teacher Ratio

II. Enrollment related indicators;
   1. Girls enrollment ratio
   2. Communal category wise enrollment and
   3. Enrollment in ‘Two Teacher’ lower primary schools and
      ‘Five-Teacher’ upper primary schools.

III. Infrastructure related indicators;
   1. Compound wall
   2. Separate girls’ toilet
   3. Ramp facility and
   4. Computer facility
The inequality analysis on the above said school related and enrollment related indictors were carried out in this study between the two categories of schools namely lower primary and upper primary schools and also between the two educational districts of the study area. On infrastructure related indicators this inequality analysis was carried out only between the two educational districts of the study area. Because it is observed during the pilot survey that there was no much of difference in condition of these facilities between the lower and upper primary schools in the study area.

Collection of primary data was done to analyse the third objective of the study. They were collected directly from the respondents as first hand information and from only the lower and upper primary schools as the independent units. For this purpose, the interview schedule was used. The respondent of this study is the Headmasters / Headmistress of the lower primary and upper primary schools located in eleven educational blocks of the two educational districts of the study area. These primary data were used to assess the prevailing condition of both categories of schools by collecting the following information:
1. Number of classrooms per school,
2. Number of teachers in the school,
3. Enrollment of students per school,
4. Student-classroom ratio,
5. Pupil-Teacher ratio,
6. Girls’ enrollment ratio,
7. Enrollment of Scheduled Caste, Most Backward and Backward class students and
8. Facilities available such as computer, ramp, compound wall, and condition of school buildings, etc.

It is conventional that all schools are maintaining the register - a simple note book - called as “Pallikkannadi” (‘School Mirror’) is referred by the respondents during the survey. All students’ related information like the enrollment of the students, attendance, their community, number of students received scholarship, etc. are given in this register. Similarly the Monthly Report which is prepared by the Headmasters/Headmistress to be sent to the Sarva Shiksha Abhiyan Project Office at Virudhunagar was also referred by the researcher for verifying primary data given by the respondents.
Structure of Interview Schedule

On the basis of the knowledge gathered during the pilot study, that is discussion with a few Headmasters / Headmistress and teachers of lower primary and upper primary schools in the study area and referring the interview schedule prepared by the National University of Educational Planning and Administration, New Delhi regarding primary school, the researcher constructed his own interview schedule to collect the primary data. The interview schedule consists of five sub-headings namely the school particulars, physical facilities particulars, teachers’ particulars, students’ particulars and grants particulars.

Respondent

The direct interview method is used to collect the primary data. The Headmaster / Headmistress of the sample schools are the respondents in this study.

Pre-testing of Interview Schedule

After formulating the interview schedule, its validity was tested. By testing its validity, the researcher modified the interview schedule according to the circumstances. The formulated interview schedule
was pre-tested with twenty respondents in the study area. After the pre-testing, some of the questions were modified by the researcher in order to get logical sequence in the arrangement of questions. After making all the necessary alterations and modifications, the schedule got its final shape.

**Duration of the Survey**

The collection of primary data was done over a period of five months from **July 2011 to November 2011**. Therefore it is understood that the period of survey has been for the **academic year 2011-12**, as far as primary data is concerned. The face to face contact between the researcher and the respondents during the time of interview helped the researcher to observe the real prevailing condition of primary schools and make the researcher to observe the real picture of the primary schools environment in view of teachers and students to the maximum extent possible.
4. Statistical Tools used for the Analysis

To analyse the **first objective** of the study namely to trace the **growth rate** of various educational factors namely **number of schools and enrollment of students** in the study area the **Semi Log Linear Regression Model** is used. The equation of this function is;

\[
\log y = a + bt
\]

Where, \( y \) = Dependent variable

\( a \) = Constant

\( bt \) = Independent variable of which \( b \) is the co-efficient of ‘t’.

It is also known as semi log model because the logarithm used in this equation is only in partial manner. That is the logarithm is taken for only dependent variable ‘\( y \)’ which is on left side of the equation rather than the two sides of the equation. After finding the semi log value for dependent variable, the researcher has calculated the **Compound Growth Rate**. The function of Compound Growth Rate is;

\[
CGR = \left( \text{Antilog of } b \right) - 1 \times 100
\]

The **second objective** of the study namely to analyse the **disparity in enrollment indicators** namely Gross Enrollment Ratio
and Net Enrollment Ratio and performance indicators namely Completion Rate and Dropout Rate between two educational districts and two categories of schools the Sopher’s Disparity Index Method is used. The function of this method is;

\[
\text{DI} = \frac{\log (X_1 / X_2)}{\log [(Q-X_1) / (Q-X_2)]}
\]

Where,

- DI refers to Differential Index.
- \(X_1\) and \(X_2\) are the average values of the particular variable in two educational districts.

If the resulted value of DI is zero then, one can concluded that there is no disparity and there is a perfect equality of the variable between two educational districts. On the contrary to this, lesser the value of DI means lesser the disparity between these two educational districts and vice versa.

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\[77\] Zaidi S.M.I.A, *Measures of Inequalities*, Department of Educational Planning, National University of Educational Planning and Administration, New Delhi, 2003, P.5
The **third objective** is to analyse the **inequality** aspects in terms of:

I. School related indicators,

II. Enrollment related indicators and

III. Indicators of facilities.

This inequality analysis is carried out by the researcher between two educational districts for both categories of schools for both school related and enrollment related indicators. For the indicators of facilities the inequality analysis is carried out only between two educational districts. The primary data has been used for this analysis. For this purpose the statistical tool **Co-efficient of Equality**\(^78\) (CE) is used. The function is;

\[
CE = \frac{X_1}{X_2}
\]

Where, \(X_1\) and \(X_2\) are the value of the two variables of two types of management schools and CE refers to the Co-efficient of Equality. In case of no inequality the value of CE would be equal to one. On the contrary, smaller the value of CE means lesser the equality or greater the inequality between these two educational districts or any other two groups and vice versa. The primary data has been used for this analysis.

\(^78\) *Ibid.*, P.25
There are **three hypotheses** framed in this study. **Chi-Square test technique was adopted to test two hypotheses** namely to analyse the association between the number of schools and the enrollment of students and to assess the relationship between the repair and maintenance grant and condition of the school buildings.

The framework of analysis of Chi-Square test\(^79\) is as follows;

\[
\chi^2 = \sum \frac{(O_{ij} - E_{ij})^2}{E_{ij}}
\]

With \((r-1) (c-1)\) extent of freedom.

Where,

\(O_{ij}\) = Observed frequency of the cell in \(i^{th}\) row and \(j^{th}\) column

\(E_{ij}\) = Expected frequency of the cell in \(i^{th}\) row and \(j^{th}\) column

\(c\) = Number of columns in a contingency Table and

\(r\) = Number of rows in a contingency Table.

Another hypothesis is to find out correlation between the number of women teachers and the enrollment of girl students in the schools. To assess the relationship between these two variables **Karl Pearson’s method**\(^80\) is used.

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SECTION II

Concepts Related to Primary School Education

This Section II gives the meaning of the important concepts related to the subject “Economics of Education” and relevant to this study.

Educational District-I

Educational District-I in this study refers to the Aruppukottai Educational District in the study area that is Virudhunagar district.

Educational District-II

Educational District-II refers to another educational district namely the Virudhunagar Educational District in the study area.

Primary School

The term “primary school” includes both lower primary schools and also upper primary schools. Primary schools are also called as elementary schools which denote the total number of both lower and upper primary schools.

Lower Primary School

Lower primary schools are also called as basic elementary schools. It denotes the schools with I-V standards.
Upper Primary School

The schools having classes of I-VIII is called as upper primary schools. It is also known as middle school or higher elementary school.

Government School

The government run schools are those which are run entirely by the government implying that the funding and management are all in the hands of the government. These schools may be regulated by local bodies like municipal councils, panchayat unions, state government, Adi Dravidar Welfare Department, Social Welfare Department, Forest Department and other departments of the state government. These types of schools are completely within the administrative and financial control and regulation of the Department of Education of Government of Tamil Nadu.

Private Aided School

The government aided schools are those in which the funding of schools’ expenses that is the salaries of all the teaching and non-teaching staffs, expenditure on school text books, expenditure on

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provision of school uniform, if any such scheme is in place, and expenditure on development of school infrastructure are all borne by the government but the administration of the schools are the discretion of the respective schools’ management without any interference of the government.⁸²

The management of private schools covers a wide range of institutions which include religious, charitable and cultural bodies. These schools can get financial support from the government for salary of teaching and non-teaching staff as a whole and to students more or less equal to the students studying government schools.

**Private Unaided School**

These schools are fully financed by private and are given only authorization to run the educational institutions by the government. These types of institutes are called self financing institutions.

**Number of Primary Schools**

It includes the total number of lower primary and upper primary schools as the independent units and also the secondary and higher secondary schools with lower and upper primary classes.

Size of School

It refers to the number of students enrolled in a school.

Enrollment

In this study enrollment refers to the students enrolled in both lower primary and upper primary schools either as independent unit or as the part of other categories of schools such as secondary or higher secondary school.

Non-enrollment

It refers to the children never attended the school. If the child did not have any experience of school attendance earlier and is also currently not attending school, then the child is considered to have never attended school.

Gross Enrollment Ratio

It refers to the general level of participation at a school level. It means the enrollment of the student at a specified level of schooling irrespective of the age to the population of children in the age group expected to be at that level of schooling as per prevalent norms on schools enrollments. It captures accessibility and capacity of the education system to enroll students. This ratio often exceeds hundred
per cent due to inclusion of over-age, under-age as well as repeat students for the class concerned. The Gross Enrollment Ratio in lower primary school is;

\[
\text{GER} = \frac{\text{Total Enrollment in Classes I-V}}{\text{Population in the age group of 6 to 11 years}} \times 100
\]

**Net Enrollment Ratio**

It means proportion of the population of a particular age group, enrolled at a specific level of schooling to the total population in that age group. This ratio captures age-specific enrollment of students in the classes they ought to be as per the prevailing norms for school enrollments. The function to find out the Net Enrollment Ratio in primary school that is the school having I-V classes is;

\[
\text{NER} = \frac{\text{Enrollment in I-V classes at 6-11 years of age}}{\text{Population in the age group of 6-11 years}} \times 100
\]

**Age Specific Enrollment Ratio**

It is the percentage of children enrolled in a particular age group, irrespective of the level of class of enrollment to the population of children in that age group.
Completion Rate

The percentage of students completed the entire cycle of I-V classes that is, five years of schooling in the case of lower primary school and I-VIII classes that is eight years of schooling in the case of upper primary schools to the total enrollment of the students is called completion rate.

Dropout Rate

Drop out means if a child had attended school but withdrew after sometime (days/months/years) due to some reason and the child is presently not attending school then the child is said to be a dropout. The percentage of student dropped out from the school to the total enrollment of the student is called the dropout rate.

Student-Classroom Ratio

It can be derived by dividing the total enrollment in schools by total number of class rooms in the schools.

\[
\text{SCR} = \frac{\text{Total Enrollment in the School}}{\text{Total Classrooms in the School}} \times 100
\]
**Pupil-Teacher Ratio**

It is derived by dividing the total number of primary schools having particular strength by total number of schools multiplied by hundred. For example, the function to find out the percentage of primary schools having the Pupil-Teacher ratio of $\geq 40$ is as follows;

\[
\text{PTR} = \frac{\text{Total Number of Primary Schools having PTR } \geq 40}{\text{Total Number of Primary Schools}} \times 100
\]

**Girls’ Enrollment Ratio**

It is the ratio of enrollment of girls student in a particular category of school to the total enrollment of students irrespective of the gender and multiplied by hundred.