International Journal of Future Generation Communication and Networking
Vol. 14, No. 1, (2021), pp. 275–282

Status Of Infrastructure Facilities In Primary Schools Of Tamil Nadu – A District Wise Analysis

Dr. M.Shanthi**
A.Divya*

**Assistant Professor of Economics
Avinashilingam Institute for Home Science and Higher Education for Women,
Coimbatore – 641043, Tamil Nadu, India
Email: shanthi_eco@avinuty.ac.in, **Mobile:** 8675625378
***PG Student, Avinashilingam Institute for Home Science and Higher Education for Women,
Coimbatore – 641043, Tamil Nadu, India

Abstract:

Economic development of any country necessitates economic resources and human resources. Education plays an important role in human development. The future of the nation is in the hands of young generation. That's why the quality and overall education at primary level is very essential. It is the foundation of the education and more focus on primary education is needed. Further, infrastructure facilities have a positive role in improvement of Elementary education. The goal of infrastructure development in Elementary education is to increase school attendance and to improve academic performance of students. By and large, the development of school infrastructure is a comprehensive exercise for developing the school building along with its indoor and outdoor spaces in ways that contribute to the goals of universal access, retention, equity and quality in education. With this background, an attempt has been made in the present study to assess status of educational infrastructure of primary education at district wise in Tamil Nadu, India.

Key words: *Education, Infrastructure development, Primary Education, Tamil Nadu*

Introduction:

Economic development of any country necessitates economic resources and human resources. Human development for an economy is a vital necessity. Education plays an important role in human development.

Education helps directly in increasing economic productivity and enhances earning power; it improves the power of understanding, enables a person for better socialization. The future of the nation is depends on the young generation, so the quality and overall education at primary level is very essential. It is the foundation of the education and more focus on primary education is needed. An infrastructure facility plays an important role in improvement of Elementary education.

According to the Right to Education Act (RTE) 2009, every school should have an all indicator classroom, teacher, separate toilets for boys and girls, safe drinking water, playground, a kitchen for the mid-day-meal, boundary wall, electricity and computer. In a highly competitive world all schools must have good infrastructure facilities.

The central government continues to play a leading role in the evolution and monitoring of educational policies and programmes. Different government interventions like the District Primary Education Program (DPEP) and Sarva Shiksha Abhiyan (SSA) have tried to provide better infrastructure in the schools, particularly in the last two or three decades. It is primarily meant for promoting increase in the infrastructural facilities up to the elementary education for development and causing an increase in the literacy rate.

ISSN: 2233-7857 IJFGCN

India has made a enormous progress in terms of intensifying primary education enrolment, retention, regular attendance rate and increasing literacy, at the same time, the quality of elementary education in India had also been a major concern. With this background, an attempt has been made in the present study to assess status of educational infrastructure of primary education at district wise in Tamil Nadu with the following objectives.

Objectives:

- To assess the inter district variations in educational infrastructure facilities in primary schools of selected districts of Tamil Nadu and
- To examine the impact of educational infrastructure facilities on gross enrollment in primary schools of selected districts of Tamil Nadu.

Hypothesis:

H0: There is no significant association between educational infrastructure and gross enrolment in primary schools

Ha: There is significant association between educational infrastructure and gross enrolment in primary schools

METHODOLOGY

The study is related to 10 major districts of Tamil Nadu. The districts were selected based on population; they are Vellore, Viluppuram, Chennai, Coimbatore, Kancheepuram, Madurai, Salem, Thiruneveli, Tiruchirappalli and Tiruvallur. The present study is based on secondary data for the period 2016-17 since it was the latest year for which the required data were available. The related information about district wise primary schools was compiled from the following sources DISE - 2017. To assess the status of basic infrastructure facilities of primary schools in Tamil Nadu from macro perspective, the secondary data was compiled. The required information relating to district wise government schools, enrolment in schools, teachers availability in schools, infrastructure facilities of schools, teachers facilities of schools, transition rate, girls and boys enrolments, caste enrolment, GER and NER, etc., were compiled from the following sources Census of Tamil Nadu – 2011 and UDISE+ Districts report cards- elementary education in India.

The study tried to adopt the educational development index developed by National University of Educational Planning and Administration and the Government of India Ministry of Human Resource Development (MHRD), Department of School Education and Literacy. In the present study an attempt is made to compute a composite infrastructure index at primary level education for 10 districts of Tamil Nadu through Principal component analysis.

TECHNIQUES OF ANALYSIS:

Principal Component Analysis:

In the present study Principal Component Analysis is used to compute the Factor Loading and Weights Infrastructure indicators. Based on the composite educational infrastructure index the districts were ranked. The infrastructure indicators considered in the study includes Pupil Teacher Ratio, Student Classroom Ratio, Average Teachers per School, Single Teacher Schools, Average class room, Drinking water, Girls toilet, Boys toilet, electricity, Play ground, computer, road connection, Boundary wall, ramp facility and Kitchen-shed.

Multiple regression analysis:

To identify the impact of educational infrastructure on gross enrolment multiple regression analysis of the following form was used.

$Y= \beta_0+\beta_1X_1+ \beta_2X_2+ \beta_3X_3+ \beta^3X_3+ \beta_4X_4+ \beta_5X_5+ \beta_6X_6+ \beta_7X_7+ \beta_8X_8+ \beta_9X_9+ \beta_{10}X_{10}$

Where Y= Gross enrolment;

X1= Percentage of schools having drinking water facilities;

X2= Percentage of schools having girls toilet

X3= Percentage of schools having boys toilet

X4= Percentage of schools having Electricity facility

X5= Percentage of schools having Play Ground

X6=Percentage of schools having Computer facility

X7= Percentage of schools having Road facility

X8 = Percentage of schools having Boundary Wall

X9= Percentage of schools having Ramp facility

ISSN: 2233-7857 IJFGCN

X10= Percentage of schools having Kitchen-shed
E = Error term
β1 to β10 are estimated multiple regression co- efficient.

MAJOR FINDINGS:

I. Inter District variations in Educational Infrastructure

The growth and expansion of primary education in the country, in post independence period has been rapid, but it has been uneven among various States and Districts which have given rise to access - related issues. Table - I represents the number of Primary Schools by School management in various Districts of Tamil Nadu.

S.NO	DISTRICT	Number of Government Schools	Number of Private Schools	TOTAL
1.	Vellore	1439	660	2102
2.	Viluppuram	1357	475	1855
3.	Chennai	130	503	637
4.	Coimbatore	1279	462	1773
5.	Kancheepuram	868	503	1371
6.	Madurai	796	494	1312
7.	Salem	1100	313	1423
8.	Thiruneveli	644	1143	1814
9.	Tiruchirappalli	857	421	1283
10.	Thiruvallur	941	987	1447

TABLE - I

NUMBER OF PRIMARY SCHOOLS BY SCHOOL MANAGEMENT IN VARIOUS DISTRICTS OF TAMIL NADU

Source: UDISE- National Institute of Educational Planning and Administration 2016-17.

Table - I implies that during the year 2016-17 the number of government schools was the highest in Vellore and lowest in Chennai, while the number of private schools was the highest in Thiruneveli and lowest in Salem. The total number of schools was the highest in Vellore (2102) and lowest in Chennai (637)

ISSN: 2233-7857 IJFGCN

Table - II represents the primary school enrolment in government and private schools of various districts of Tamil Nadu.

TABLE – II
PRIMARY SCHOOL ENROLMENT IN GOVERNMENT AND PRIVATE SCHOOLS OF VARIOUS DISTRICTS OF TAMIL NADU

S.NO	DISTRICT	Enrolment of Government Schools	Enrolment of Private Schools	ALL
1.	Vellore	85501	77439	163061
2.	Viluppuram	95053	58049	154944
3.	Chennai	24979	86579	111990
4.	Coimbatore	81051	69934	152464
5.	Kancheepuram	56999	62092	119091
6.	Madurai	55190	76121	133020
7.	Salem	81119	52321	133600
8.	Thiruneveli	32682	127978	161561
9.	Tiruchirappalli	57678	58833	116644
10.	Thiruvallur	53135	54144	108823

Source: UDISE- National Institute of Educational Planning and Administration 2016-17

In the year 2016-17 primary school enrolment of government schools was the highest in Viluppuram and lowest in Chennai. The primary school enrolment of private schools was the highest in Thiruneveli and lowest in Thiruvallur. The total enrolment of schools was the highest in Vellore (163061) and lowest in Thiruvallur (108823).

The availability of infrastructure facilities is the essential infrastructure facilitating educational development. Tables III A and III B represent the availability of school infrastructure facilities in various districts of Tamil Nadu.

TABLE – III A

AVAILABILITY OF SCHOOL INFRASTRUTURE FACILITIES IN VARIOUS DISTRICTS OF TAMIL NADU

S.NO	DISTRICT	DRINKING WATER	GIRL TOLIET	BOYS TOLIET	ELECTRICITY	COMPUTER
1.	Vellore	100.0	99.9	99.9	98.0	33.8
2.	Viluppuram	100.0	99.7	99.7	99.6	**84.5**
3.	Chennai	99.8	100.0	100.0	100.0	74.6
4.	Coimbatore	100.0	99.9	100.0	99.7	37.7
5.	Kancheepuram	99.9	100.0	100.0	99.7	52.2
6.	Madurai	100.0	100.0	100.0	98.6	31.9
7.	Salem	100.0	100.0	100.0	99.4	38.0
8.	Thiruneveli	100.0	93.6	100.0	94.8	**30.9**
9.	Tiruchirappalli	100.0	100.0	100.0	99.0	38.3
10.	Thiruvallur	99.9	99.9	100.0	100.0	43.1

Source: UDISE- National Institute of Educational Planning and Administration 2016-17

ISSN: 2233-7857 IJFGCN

Cont...

TABLE – III B
AVAILABILITY OF SCHOOL INFRASTRUTURE FACILITIES IN VARIOUS DISTRICTS OF TAMIL NADU

S.NO	DISTRICT	ROAD	BOUNDARY WALL	RAMP	KITCHEN-SHED	PLAY GROUND FACILITY
1.	Vellore	97.1	74.1	65.2	95.6	65.7
2.	Viluppuram	100	66.5	70.7	95.7	71
3.	Chennai	99.5	**94.2**	**58.8**	99.1	**59.3**
4.	Coimbatore	98.9	89.5	83.4	98.9	83.3
5.	Kancheepuram	98.5	77.7	81.6	96.2	82.3
6.	Madurai	98.1	78.7	65.2	97.7	65.4
7.	Salem	97.8	**64.1**	74.5	98.3	74.7
8.	Thiruneveli	99	70.3	**86.6**	98.1	**86.7**
9.	Tiruchirappalli	98.7	71.2	74.6	97.3	74.5
10.	Thiruvallur	98.1	76.3	73.8	94.7	73.9

Source: UDISE- National Institute of Educational Planning and Administration 2016-17

Tables III A and III B implies that the basic infrastructure facilities like drinking water, girls toilet, boys toilet, electricity, road facility and kitchen- shed were available nearly 100 percent in various districts of Tamil Nadu. In 2016 -17 in Viluppuram 84.5 percent of the schools had computer facilities and in Thiruneveli only 30.9 percent of the schools had computer facilities. The schools having boundary wall was the highest in Chennai and lowest in Salem. The schools having the ramp facility was the highest in Thiruneveli and lowest in Chennai, similarly the playground facility was the highest Thiruneveli and lowest in Chennai.

TABLE – IV
ESTIMATED EDUCATIONAL INFRASTRUCTURE INDEX IN VARIOUS DISTRICTS OF TAMIL NADU (2016-17)

S.No	District	Teacher Index	Rank (Teacher Index)	Infrastructure Index	Rank (Infrastructure Index)	Composite Index	Rank (Composite Index)
1	Vellore	0.070	5	0.412	2	0.495	2

ISSN: 2233-7857 IJFGCN

2	Viluppuram	**0.257**	1	**0.577**	1	**0.948**	1
3	Chennai	0.022	7	**0.088**	10	0.075	9
4	Coimbatore	**0.006**	10	0.205	4	0.126	8
5	Kancheepuram	0.094	4	0.151	6	0.180	6
6	Madurai	0.010	8	0.101	8	0.165	7
7	Salem	0.152	2	0.254	3	0.228	3
8	Thiruneveli	0.008	9	0.091	9	**0.056**	10
9	Tiruchirappalli	0.150	3	0.152	5	0.192	5
10	Thiruvallur	0.061	6	0.139	7	0.227	4

Table IV represents the estimated educational infrastructure index in various districts of Tamil Nadu for the year 2016-17. During the year 2016 – 17, Viluppuram district occupied the first rank in all the three indices (i.e) teacher facility index (0.257), infrastructure index (0.577) and composite index (0.948). The rank relating teacher facility infrastructure index shows that Coimbatore (0.006) had the lowest rank. The basic infrastructure facilities index revealed that Chennai (0.088) occupied the lowest rank, while the composite infrastructure index revealed that Thiunelveli (0.056) had the lowest rank.

Infrastructure and facilities provide a comfortable learning environment, accelerate the learning procedure and increases the students' interest (Pritchett and Pande, 2006; Iyengar, 2004).Where the quality of infrastructure is good, enrolment and completion rates would also be good; An attempt is made in this section to find out the extent of influence of selected infrastructure facilities on the gross enrolment in primary schools of various districts in Tamil Nadu.

The variables chosen for the study were percentage of schools having drinking water facilities, percentage of schools having girls toilet, percentage of schools having boys toilet, percentage of schools having Electricity facility, percentage of schools having Play Ground, percentage of schools having Computer facility, percentage of schools having Road facility, percentage of schools having Boundary Wall, percentage of schools having Ramp facility and percentage of schools having Kitchen-shed. The estimated regression analysis results are given in table V for the year 2016– 17.

TABLE - V

ESTIMATED REGRESSION MODEL (2016-17)

Variables	**Coefficient**	**T value**	**Significance**
Constant	-23578.464	-9.694	0.065
Drinking Water	263.659	0.863	0.000
Girls Toilet	12.402	22.213	0.002
Boys Toilet	17.025	1.496	0.375
Electricity	19.227	34.273	0.019
Play Ground	0.592	14.255	0.045
Computer	0.426	22.613	0.002
Road	4.186	0.956	0.393

ISSN: 2233-7857 IJFGCN

Boundary Wall	1.849	53.043	0.000
Ramp	36.852	2.468	0.069
Kitchen-shed	2.036	6.421	0.098
R^2	0.99		
F	2.130E3		

Table - V indicates that about 99 percent of the variations in the gross enrolment in primary schools of the various districts of Tamil Nadu are explained by the selected infrastructural variables in the study. All the chosen explanatory variables are positively associated with gross enrolment in primary schools. Among the explanatory variables drinking water (0.000), girl's toilet (0.002), electricity (0.019), play ground (0.045), computer facility (0.002) and boundary wall (0.000) have significant impact on gross enrolment in primary schools of the selected districts of Tamil Nadu. Thus, infrastructure facilities have significant impact on enhancing the enrolment in primary school.

CONCLUSION

To sum up, due to many initiatives on educational development by the central and state government a number of development had been taken place in the government schools like availability of drinking water, girls toilet, boys toilet, electricity, road facility and Kitchen-shed. However, the availability of computer facilities, play ground, boundary wall and ramp facility had shown unsatisfactory condition in the primary schools among the selected districts of Tamil Nadu. As economic conditions improve, families who have affordability power prefer to enroll their children in private schools. To improve the quality of primary education in the government schools, there is a need for improvement in school infrastructure and teacher facility infrastructure. Hence, the government should take necessary action on the issue of school infrastructure and quality of teaching. The School buildings, classrooms, playgrounds and other facilities can be improved and the quality of teaching may be improved through training the teachers and supporting them with modern teaching aids and tools like smart classrooms and digital course development.

BIBLIOGRAPHY

Anil Bhuimali (2004), "Education, Employment and empowering Women", Serials publications, New Delhi

Arpan Mukhopadhyay (2003), "Tamil Nadu, Human Development Report", government of Tamil Nadu in association with social science press Delhi.

Biradar R.R (2008), "Educational status among social groups in India, emerging issues", Deep and Deep publication Pvt. Ltd, New Delhi, Pp: 281 – 302

Catalyst trust Chennai and public affairs centre Bangalore (2001), "Citizen's Audit of Public Services in Rural Tamil Nadu"

Isher Judge Ahluwalia, Ravi Kanbur, P. K. Mohanty (2014), "Urbanisation in India: Challenges, Opportunities and the Way Forward"

Jaya. S (2011), "Gender equality: A corner stone of development", Gender Equality and inclusive growth, Excel India publishers, Pp: 170 – 179

Nilanjana Sengupta (2007), "Regional disparities in West Bengal" Indian economic reforms and response of states, Kanishka publishers, New Delhi, Pp: 176 – 200

ISSN: 2233-7857 IJFGCN

Nirmala Devi .T and Subhashini.K (2004), "Gender disparity in literacy rates in Andhra Pradesh with special focus on Visakhapatnam District", Serials publications, New Delhi, Pp: 210 – 220
Anna P. K. Shilunga1, Hans J. Amukugo1, Kabwebwe H. Mitonga (2018) "Knowledge, Attitudes and Practices of Primary Schools Learners On Sanitation and Hygiene Practices", International Journal of Community Medicine and Public Health, Vol.5, No: 8, PP: 3197-3204.
Aslan Zorlu (2013) "Ethnic disparities in higher education", Zorlu IZA Journal of Migration, vol.2, no.1: pp: 1-21.
Atal Bihari Das & Dukhabandhu Sahoo (2012) "Regional Disparities In Education: A Comparative Study Between Kbk And Non-Kbk Districts Of Odisha, India", International Journal of Humanities and Social Sciences, vol.no:1, pp: 39-52.
Barna Ganguli Maulick (2013)," Gender disparity in primary and upper primary levels, A concern for Bihar", Man and development, Vol: 35, No: 3, September, pp: 95 - 108
Bijaya Nepal (2016) "Relationship among School's Infrastructure Facilities, Learning Environment and Student's Outcome", International Journal for Research in Social Science and Humanities Research, vol.no:2, pp: 44-57.
Biradar and Jayasheela R.R (2007), "Effects of educational inequality among social groups in rural India;" Journal of rural development, Vol: 26, No: 3, pp: 379 - 401
Blessing Dube & James (2012) "Factors Leading To Poor Water Sanitation Hygiene Among Primary School Going Children In Chitungwiza", Journal of Public Health In Africa, PP: 25-28.
Chandrasekhar and Akash S.B (2011), "Education and Occupational Aspirations of Scheduled Caste College Students: An Empirical Study", Southern Economist, PP: 49-52
Daniel Ezhilarasu.D(2014), "Human resource -The capital of our Nation", International Journal of education and research, vol: 47, No: 2, PP: 1 -2.
Jhuma Halder (2016) "Geographical Access and Quality of Primary Schools – A Case Study of South 24 Parganas District of West Bengal", The Institute for Social and Economic Change, Bangalore, pp: 1-24.
Joy Karmakar (2016) "Assessing the Enrollment and Primary Educational Infrastructure of the Rural West Bengal: A District Level Analysis", Journal of Economic & Social Development, Vol. - 12, No. 1, pp: 99-108.
Kapil Kaushik (2010) "Problems and prospects of primary education in Mathura district: A geographical analysis", Journal of Geography and Regional Planning Vol. 3, no. 10, pp.253-261.
Khalid Khan (2018) "Disparities in access to Higher Education in India", Journal of Social Inclusion Studies, pp: 168-178.
Sundar. L. (2016) "Inter State Disparity in Inclusive growth in Education in India", International Journal of Economic and Business Review, vol.no:4, pp: 204-21

ISSN: 2233-7857 IJFGCN