



## EMPIRICAL ANALYSIS OF TALUKA DISPARITIES OF PRIMARY EDUCATION IN KHEDA DISTRICT

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### Abstract

*This paper examines Taluka disparities in education in Kheda district in Gujarat. We examined total 10 Talukas educational disparities in the district. In comparison to other Talukas Balasinor and Mahudha is better performer in primary educational level, while other districts are presenting their factor score at the variable level is little bit differ and interrelated each other. The study analyzed Pearson correlation, residual correlation matrix, coefficient, Eigen Factors, Factor score, of all variable by multiple factor analysis. The paper concludes that all primary educational variables are positively correlated and presenting enhanced volume of factor score (Weight) of each other.*

**Keywords:** Primary Educational Indicators, Econometric analysis by multiple factor analysis.

### JEL Classification: I, I2, I21, C1, C19

The difference in attitude towards men and women exists at all levels of society in the fields of education, job opportunities, health, etc. which fall within basic rights of a person. The disparity is even more conspicuous in the rural areas and among the poor<sup>4</sup>. The two most recent conventions- the Elimination of All Form of Discrimination Against Women (CEDAW, 1979 and the Convention on the Rights of the Child (1990) – contain the most comprehensive set of legally enforceable commitments on the right to education and gender equality. In general, inequality in educational participation and outcomes reflects broader inequality in society<sup>5</sup>. It is argued that an enhanced compliant of the causes of regional educational disparities should help to policy makers to put in a position the right policy instruments to diminish education in depressed regions. Regional economist and policy makers are more interested in the effect of education on economy and how state government taking initiatives to upliftment of the education at the elementary level. Disparities in education occurs due to many affecting factor like proportion of schools at regional level, efficiency and infrastructure facility of schools, number of human resources who engaged in primary schools, high migration level, etc. Kheda district has substantial development and progress after 1990, but launching of many educational programmes and schemes by the state government though also somehow in social sector performance it is lacking behind compare to other districts in Gujarat. The economy is growing and helping to reduce poverty in the district but still it faces many development challenges for example inequality in education and health challenging to the policy makers. Education is the growth mainstay for human development for any society. Due to state government effort foe more enrollment in elementary

education, Kheda is showing some significant improvement in GER and NER and trying to reduce dropout rate. All indicators reflect the commitment and best endeavor at primary education level at the district. Here we attempt to present all indicators dimension related to primary education at the all Taluka level in the district. All Talukas have various level of indicators performance.

### Literature of Review on Educational Disparity

Many researchers has worked on issues of education, one of common issue is disparities in education is visible in all the developing countries. Number of academicians and research scholar has studied on education and its development. Here we reviewed articles and papers on same subject.

Deep distrust among the people living in different regions of the state has all along characterized the first linguistic state of India, the State of Andhra Pradesh. This phenomenon is the inevitable consequence of the regional imbalances in the levels of development perpetrated during the last forty years and likely to be continued in the future as well. In such a situation, the people become anxious more about the problems of bread and butter while the issues concerning linguistic unity and cultural affinity hardly matter<sup>6</sup>. G S Premakumara and Riyaz Ahmad discussed in paper about four region comparisons in educational development. They found that Due to the educational programmes introduced by the government, the enrolments in the region have increased but students do not complete their education fully because of high drop-out rate<sup>7</sup>.

Shivakumar Marimutu and M Vijay analyzed in their paper the regional disparities in reducing poverty and increase in literacy (education) in India with the emphasis on State wise analysis. The elasticity concept has used to study the relationship between poverty reduction and educational advancement in the name of “education



elasticity of poverty". Education elasticity of poverty is the change in poverty due to the change in education<sup>8</sup>. Atal Bihari Das & Dukhabandhu Sahoo explained in their paper regional disparities in education in Odisha with special reference to KBK and non-KBK districts they found that there are demand side constraints of education in KBK districts. Hence, and paper suggest that in order to enhance enrolment in the KBK region parental motivation is very significant. Further, government has to take special measures like opening of more schools in remote areas, appointment of more female and ST teachers, provision of special incentive scheme for girls etc<sup>9</sup>.

Education has a positive relationship with economic development (Palanithurai, 2004; GOI, 1966)<sup>10,11</sup>. This argument is more valid in the context of developing countries (Devi, 1994 a)<sup>12</sup>. The economic growth model of development was questioned by the UNDP in its first human development report of 1990, which reiterate that people, not things, are the wealth of nations. In that direction human development is the process of building the capabilities to enable people to lead productive lives (UNDP, 1990)<sup>13</sup>.

#### **Objectives of the study**

To examine the educational indicators at primary educational level.

To measure all indicators by econometric procedure and an attempt to present Taluka level disparities in primary education.

#### **Methodology**

We obtained all the primary educational statistics from primary education department of Kheda a district. To measure all educational indicators we attained econometric analysis for correlation matrix, co-efficient, Eigen value and Eigen factor, correlation (Pearson), etc by extraction method of principal component analysis.

#### **Result and Discussion**

##### **Correlation matrix (Pearson (n))**

This coefficient corresponds to the classical linear correlation coefficient. This coefficient is well appropriate for continuous data. Its value ranges from -1 to 1, and it measures the degree of linear correlation between two variables. *The squared Pearson correlation coefficient gives an idea of how much of the variability of a variable is explained by the other variable. However, one needs to be cautious when interpreting these results, as if two variables are independent, their correlation coefficient is zero, but the reciprocal is not true.*

Resembling GER & Dropout these both variables are repeal to each other that getting through correlation which is (-0.274), which shows there is negative relation relationship. All others variables are positively related with each other.

#### **Factor analysis**

##### **Reproduced & Residual correlation matrix:**

Factor analysis is a used to identify constructs, or factors, that elucidate the patterns of variations among multiple values. Factor analysis involves generating one or more unobserved independent variables that correlate with the observed measures. The reproduced and residual correlation matrices verifying if the factor analysis model is fine or not, and where it fails to reproduce correlations. Here the reproduced correlation matrix is fine because most of the variables are positively related with each other. The factor scores f1 & f2 shown that Balasinor, Mahudha having positive score that they are laying on positive side of screen plot graph, because there GER, NER, STR having positive result and Dropout rate is also less in compare to other Talukas. In f1 Kathlal, Kheda are positive side and In F2 Thasara, Kapadwanj are positive because their GER and NER are good.

##### **Eigenvalues**

The Eigenvalues and corresponding chart (screen plot) are displayed. Eigenvectors: This table shows the eigenvectors obtained from the spectral decomposition. These vectors take into account the variable weights used in the Multiple Factor Analysis. The correspondence analysis in this example is of good quality as the sum of the first two Eigenvalues adds up to 68.89% of the total. The most interesting result in Correspondence analysis is the map of the categories including both rows and columns. If the quality of the analysis is good (68.89% as in this example), the map can be used to interpret the data.

##### **Correlations between variables and factors**

From this table we can see that the first factor is highly positively related to GER, NER, Dropout Rate, and Repetition Rate & STR. From these results, we can understand that the GER that has highly related to the first factor, while for other factors such as Drop out, Repetition & STR with low coordinates on the second factors might be more appropriate.

##### **Conclusion**

Here, the analysis is good quality because the result is positive, that getting through Reproduced correlation matrix is fine because most of the variables are positively related with each other. And screen plot figure is 68.89% that is good quality of result. And more indicators are positively correlated. And more indicators are positively correlated. So in the screen plot chart presents that Balasinor and Mahudha on positive side of F1 & F2. The result shows positive attitudes towards the all primary educational indicators and that is only due to state government efforts to launch various types of educational programmes/schemes at primary level.



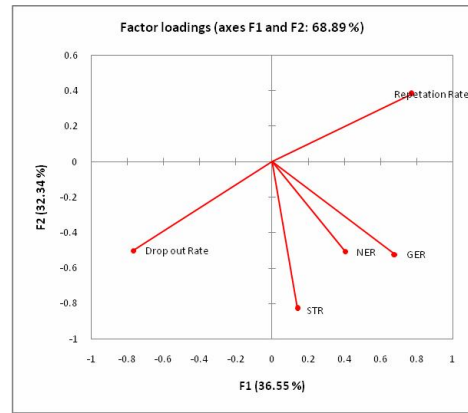
**Absolute Data**

Block	GER	NER	Dropout Rate	Repetition Rate	STR
	Tot	Tot	Tot	Tot	Tot
Balasinor	99.20	96.21	0.36	0.77	27.42
Kapadwanj	99.86	96.05	0.90	2.22	26.09
Kathlal	99.93	95.28	0.96	0.51	28.39
Kheda	99.52	96.54	0.58	1.14	29.12
Mehemdabad	99.85	96.78	1.69	1.15	30.78
Mahudha	99.37	96.32	9.10	0.04	29.84
Matar	99.60	96.25	0.68	2.28	29.16
Nadiad	99.60	95.50	3.31	1.69	32.60
Thasara	99.78	96.61	0.96	1.48	28.25
Virpur	98.40	95.43	2.44	1.06	25.05
<b>Total</b>	<b>99.51</b>	<b>96.10</b>	<b>2.10</b>	<b>1.23</b>	<b>29.06</b>

**Factor pattern:**

	F1	F2	Initial communalities	Final communalities	Specific variance
GER	<b>0.680</b>	-0.524	1.000	0.737	0.263
NER	0.405	<b>-0.507</b>	1.000	0.421	0.579
Dropout Rate	<b>-0.765</b>	-0.502	1.000	0.837	0.163
Repetition Rate	<b>0.772</b>	0.382	1.000	0.742	0.258
STR	0.141	<b>-0.829</b>	1.000	0.707	0.293

Values in bold correspond for each variable to the factor for which the squared cosine is the largest



Source: Primary Education Department, Nadiad, Kheda-2011

Variable	Observations	Obs. with missing data	Obs. without missing data	Minimum	Maximum	Mean	Sd. deviation
GER	10	0	10	98.398	99.931	99.542	0.441
NER	10	0	10	95.283	96.775	96.084	0.522
Dropout Rate	10	0	10	0.581	9.104	2.273	2.557
Repetition Rate	10	0	10	0.040	2.279	1.281	0.691
Student Teacher Ratio	10	0	10	25.054	32.598	28.836	2.150

**Correlations between variables and factors:**

	F1	F2
GER	0.680	-0.524
NER	0.405	-0.507
Dropout Rate	-0.765	-0.502
Repetition Rate	0.772	0.382
STR	0.141	-0.829

**Correlation matrix (Pearson (n)):**

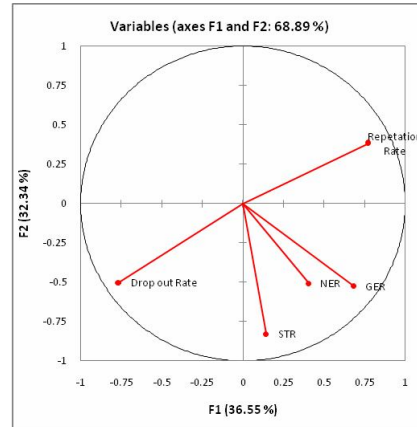
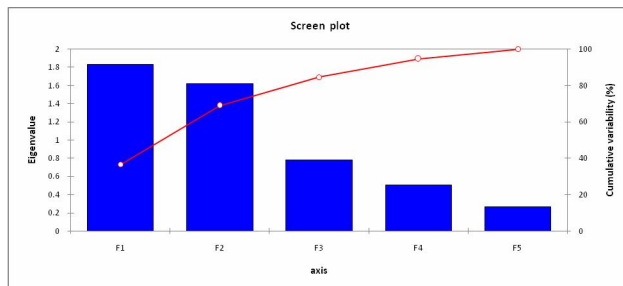
Variables	GER	NER	Dropout Rate	Repetition Rate	STR
GER	<b>1</b>				
NER	0.332	<b>1</b>			
Dropout Rate	-0.274	-0.009	<b>1</b>		
Repetition Rate	0.202	0.094	-0.623	<b>1</b>	
STR	0.446	0.216	0.265	-0.092	<b>1</b>

**Residual correlation matrix:**

	GER	NER	Dropout Rate	Repetition Rate	STR
GER	0.263	-0.209	-0.016	-0.123	-0.085
NER	-0.209	0.579	0.046	-0.025	-0.262
Dropout Rate	-0.016	0.046	0.163	0.159	-0.043
Repetition Rate	-0.123	-0.025	0.159	0.258	0.115
STR	-0.085	-0.262	-0.043	0.115	0.293

**Eigenvalues:**

	F1	F2	F3	F4	F5
Eigenvalue	1.828	1.617	0.782	0.507	0.267
Variability (%)	36.554	32.336	15.638	10.131	5.341
Cumulative %	36.554	68.890	84.528	94.659	100.000



**Factor pattern coefficients:**

	F1	F2
GER	0.503	-0.412
NER	0.299	-0.399
Dropout Rate	-0.566	-0.395
Repetition Rate	0.571	0.300
STR	0.105	-0.652

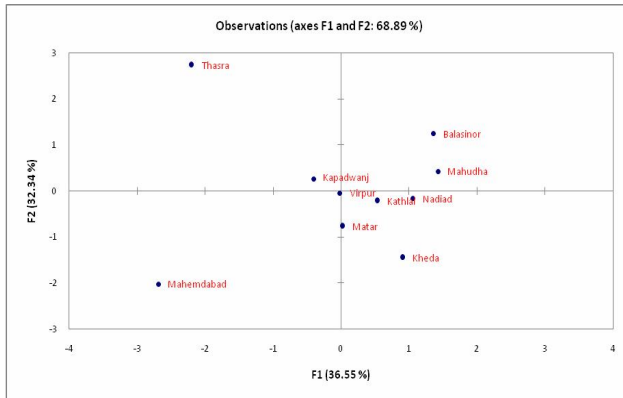
**Factor scores: Weight**

Observation	F1	F2
Balasinor	<b>1.354</b>	1.248
Kapadwanj	<b>-0.403</b>	0.266
Kathlal	<b>0.534</b>	-0.220
Kheda	0.907	<b>-1.449</b>
Mehemdabad	<b>-2.684</b>	-2.026
Mahudha	<b>1.426</b>	0.424
Matar	0.023	<b>-0.770</b>
Nadiad	<b>1.057</b>	-0.165
Thasara	-2.195	<b>2.736</b>
Virpur	-0.019	<b>-0.043</b>

Values in bold correspond for each observation to the factor for which the squared cosine is the largest

**Eigenvectors:**

	F1	F2	F3	F4	F5
GER	0.503	-0.412	0.267	-0.549	-0.452
NER	0.299	-0.399	-0.856	0.057	0.122
Dropout Rate	-0.566	-0.395	-0.089	0.279	-0.662
Repetition Rate	0.571	0.300	0.046	0.649	-0.400
STR	0.105	-0.652	0.431	0.442	0.428



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