

Research Article

An Analysis of Umer Kots' Public Sector Education Facilities: A Deserted Subregion in Southern Pakistan

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Abstract: The distances between rural communities and education centers can be curtailed with the provision of education services according to subregional population features. The goal of this research is to determine public sector education institution's shortage and analyze them according to the national standards. Data were collected from the concerned authorities and significant official documents. After words, the data were authenticated using different statistical tests which were performed with SPSS. The education institution's backlog was calculated by referring the national standards up to the year 2035. The subregional education maps were also produced which show the current and projected Taluka wise education institution's demand. This research could be helpful for policy planners in formulating education policies, especially in rural regions of the developing countries. This research could play a magnificent role in upgrading education standards within the context of poor subregions.

Keywords: Developing world, education institutions, education policies, education standards, rural subregions

INTRODUCTION

Education is a response to the multidimensional problems of backward communities. Education is a need of today's epoch for physical, socioeconomic and environmental escalation of developing countries (Government of Pakistan, 1998). Education is the only way which takes deprived nations towards the prosperity, sustainable physical and socioeconomic advancements (Psacharopoulos and Patrinos, 2004). The development of destitute communities depends on proper education (Aref, 2011; Psacharopoulos, 1994). The provision of indispensable education facilities according to the number of residents, particularly in backward regions, can enhance accessibility (Talpur *et al.*, 2013) and can ensure perpetual development process (Lasker *et al.*, 2001).

However, backward communities in most of the developing countries are confronting with the shortages of basic education facilities and transportation inaccessibility (Asadullah, 2009; Chimombo, 2005; Jones and Kauffman, 1994). There could be many reasons behind such trauma like poverty (Zaman and Khilji, 2013), primary health (Guagliardo, 2004) and inflation (Khan and Saqib, 2011) which developing nations want to resolve according to their predefined objectives. Hence, developing countries without considering this basic element of social sector

development would not be able to flourish themselves accordingly (Hanushek, 1995).

This research's focal point is an analysis of fundamental education services of the study area about its residents. The motive is to make sure that basic education is bestowed to the rural children at their doorstep. This step could be helpful in shrinking the education inaccessibility from rearward subregions (Andersson *et al.*, 2012). Whilst, the falling standards of education can also be upgraded in this way as parents won't allow their children (particularly female) to go for higher distance schooling. This research is significant in a sense that it tackles the troubles of the study area's education sector. This is expected that literacy ratio, specifically regarding female students, can be augmented with the fulfillment of education sector backlog.

MATERIALS AND METHODS

Study area: The study area is Umer Kot subregion which is placed in southern Pakistan. Pakistan is a populous country and ranked second in the subcontinent (Anwar *et al.*, 2012). The country has taken many steps about the provision of basic education services to the nation's children in the rural regions (Farah *et al.*, 1996). But, as the country is dealing with its enormous population growth rate; this seems difficult to compete with the increasing demand of

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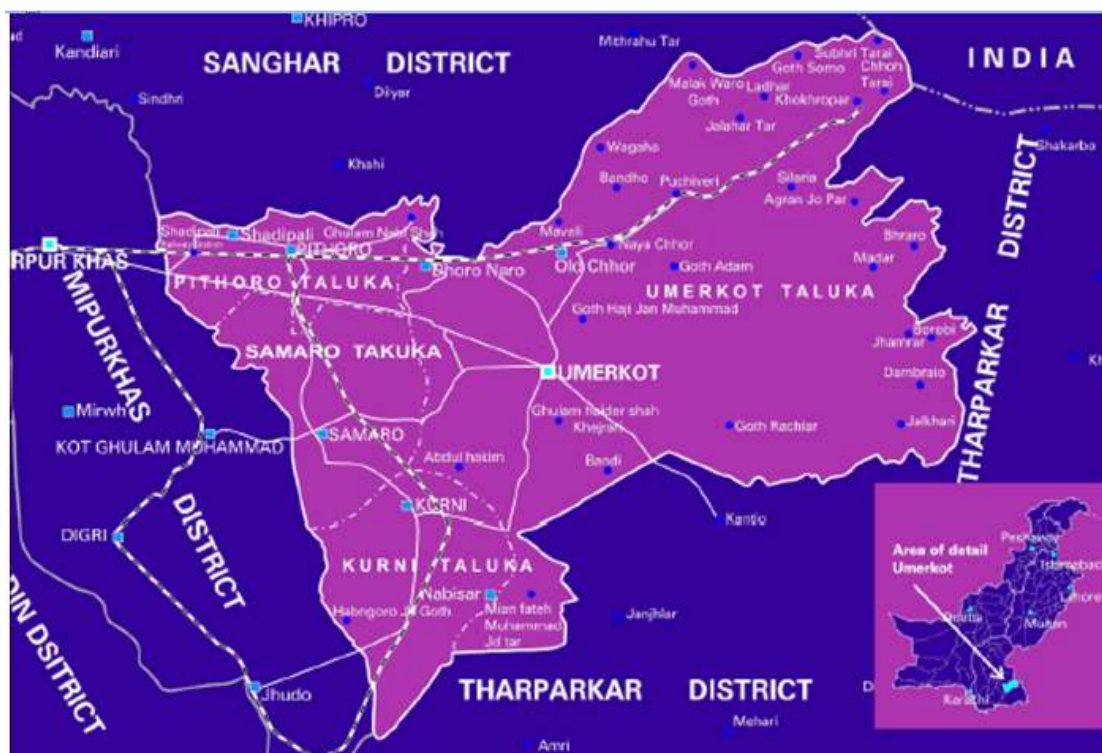


Fig. 1: Location map of Umer Kot subregion (Mehdi *et al.*, 2009)

education facilities (Halai, 2011; Sawada and Lokshin, 2009; Fatima and Nasr, 2010; Memon, 2007; Parveen, 2006). So, this study is a step further in this background which could be useful for the education sector of the study area.

According to the District Census Report (1998), Umer Kot is coordinated at 24° 54' to 25° 47' north latitude and 69° 11' to 70° 18' east longitude, having the total area of about 5608 km². Umer Kot was also called as “Amar Kot” by old historians. The city of Umer Kot is well connected with other large cities like Karachi, Hyderabad and Mirpurkhas. The subregion of Umer Kot is bounded on north by Sanghar district, on the west by Mirpurkhas district. Also, this subregion touches the Indian border from the east and the Tharparkar district from the southeast.

The subregion of Umer Kot has two distinctive portions; an irrigated area in northwest and a deserted segment in the southeast. The eastern Nara canal is a demarcation line between these two plains, i.e., irrigated and deserted. The fusion of both is evidently marked towards the south at Umer Kot. One can see sandhills spreading towards the east which consist of barren tracks of sand dunes, covered with thorny bushes.

Administratively, the subregion is divided into four Talukas, namely, Umer Kot, Pithoro, Samaro and Kunri which can be shown in the Fig. 1. These four Talukas are the prominent settlements within the study area. The Taluka is a second administrative unit after District (Shah *et al.*, 2012).

The average household size of Umer Kot was 5.4 persons in a year 1998 and the same was experienced in different Talukas of Umer Kot subregion. The rural-urban household size of the study area was determined as 5.2 and 6.2 respectively.

Research methodology: There are numerous data collection methods available to the researchers (Talpur *et al.*, 2012). In this study, the data were collected through personal visits and by referring to various public documents. Demographic data were retrieved from the District Census Report (1998) and projected up to the year 2035 with the help of compound interest model (Roberts, 1974) which is given as below:

$$P_t = P_0 (1 + r)^n \tag{1}$$

where,

- P_t = Projected population
- P₀ = Current population
- r = Annual growth rate/100
- n = No: of years

Population projection was validated by using correlation analysis in SPSS 17.0; to make sure about the accuracy of an analysis. The diverse descriptive tests were also performed on the demographic data of the study area. These validation processes gave assurance that computed futuristic education

Table 1: Education standards (National Reference Manual, 1986)

Basic institutions	For boys	For girls
Primary school	1\1800	1\2400
Secondary school	1\3900	1\17000
High school	1\12400	1\74000

Table 2: Current and projected subregional demographic characteristics

S. No.	Name of Taluka	Current population 2012	Estimated population 2035	Annual growth rate
1.	Umer Kot	412,060	741,706	2.38
2.	Kunri	215,171	410,976	2.64
3.	Samaro	165,892	371,598	3.28
4.	Pithoro	117,046	262,183	3.28
Total		910,169	1,786,463	-

Table 3: Descriptive statistics test results

Statistical tests	Population 2012	Population 2035
Mean	227542.250	446615.750
Median	190531.500	391287.000
Mode	117046 ^a	262183 ^a
Std. deviation	129370.299	206552.293
Variance	1.674E10	4.266E10
Skewness	1.446	1.434
Std. error of skewness	1.014	1.014
Kurtosis	2.240	2.566
Std. error of kurtosis	2.619	2.619
Range	295014	479523
Minimum	117046	262183
Maximum	412060	741706
Sum	910169	1786463

^a: Multiple modes exist; The smallest value is shown

institution's demand of the study area is factual, not a fallacy. The education maps are also developed by using AutoCAD2000 which show the existing available and future needs of the public education facilities.

The existing data about available Primary, Secondary and High Schools were collected from the concerned directorate. The current as well as future shortages were determined by referring to the education standards of the country which are available in the official document of "National Reference Manual of Pakistan". The educational standards are given in the Table 1.

As mentioned in the Table 1, one primary school (for boys) can be provided for at least 1800 people. While, for girls' primary school the number is 2400. These standards can help in calculating the backlog of the basic education institutions of any geographic area according to its demographic features.

RESULTS AND DISCUSSION

Subregional demographic features of Umer Kot: In the year 1998, rural population of the study area was 551.60 thousand which constituted 83.19%. While, the average annual growth rate of rural population during 1981-1998 was 2.98% which decreased from 3.91%. The urban population of the subregion was 111.46 thousand which constituted 16.81% of its total population. The average annual growth rate of urban population had increased to 5.07%.

Taluka wise population data of the study area were collected and estimated up till the year 2035. The population in the year 2012 was about 910,168 and for the year 2035, this was estimated about 1,786,463. The demographic details are given in the Table 2. There are total 4 Talukas existed in the Umer Kot subregion

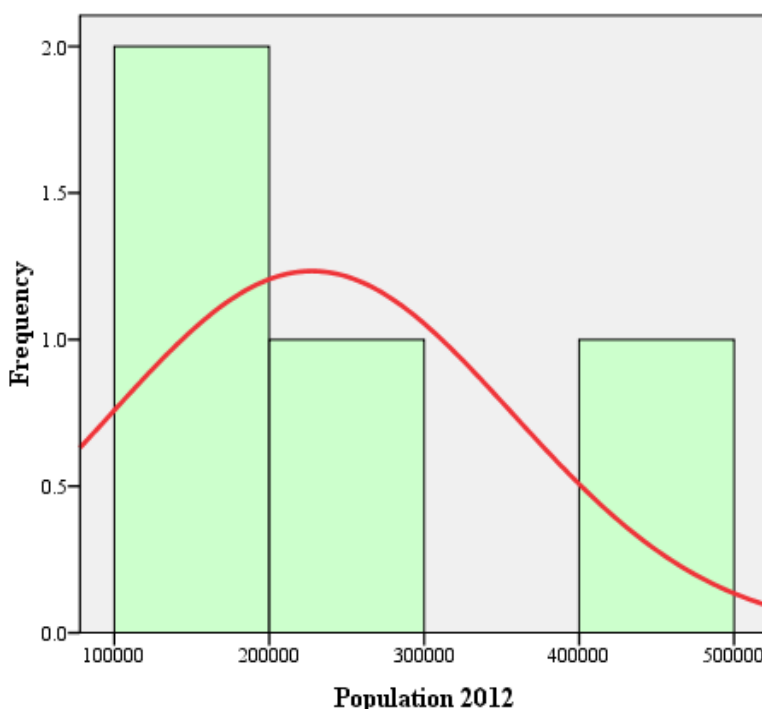


Fig. 2: Histogram with normal curve of the population 2012

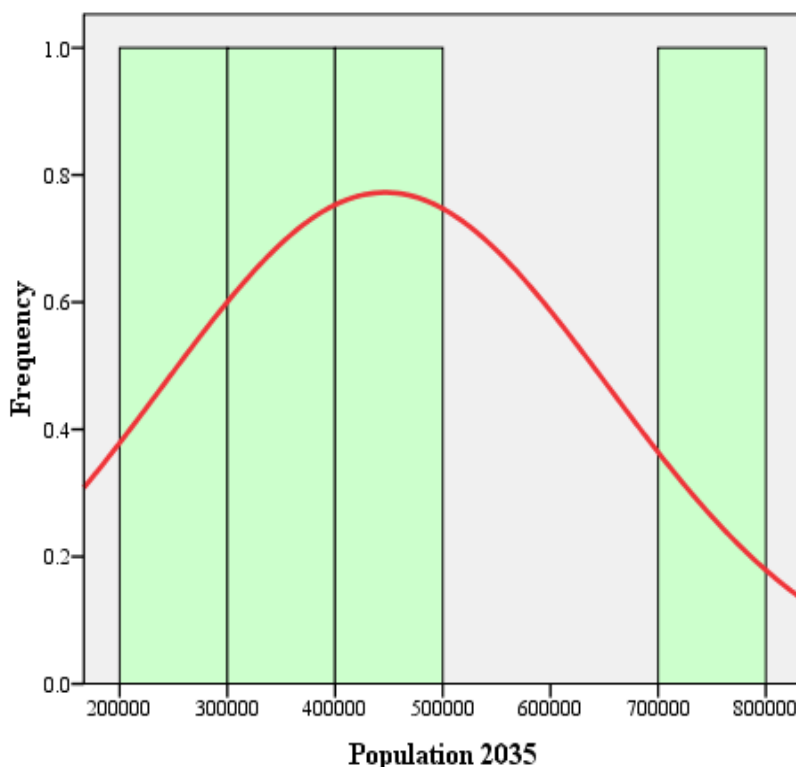


Fig. 3: Histogram with normal curve of the population 2035

and their population is projected up to the year 2035 by remarking the annual growth rate at 2.38, 2.64, 3.28 and 3.28 for the Talukas Umer Kot, Kunri, Samaro and Pithoro, respectively.

The demographic data of all four Talukas were analyzed and the different descriptive results can be seen in the Table 3.

Table 3 shows the different statistical test results and informs about the behavior of the data set used.

Histograms as shown in the Fig. 2 and 3 were developed from the subregional demographic data of the study area for the years 2012 and 2035.

The bars in these figures show the frequency of the data set and the curves inform about the normality of distribution. One hump in the middle hints the normality of the data. The Kurtosis informs about the curve that whether it would be flat or peaked. The peaked curve has a positive Kurtosis and the flat has negative. A standard Kurtosis value is 0. Kurtosis in the Fig. 2 and 3 are in the normal range while the values of Skewness are a bit higher than the normal range which shape them slightly left skewed because of the positive values of Skewness (O’Neil, 2009).

The Fig. 2 and 3 show the normality of the demographic data of the study area for the years 2012 and 2035.

The values of Skewness and Kurtosis decide the normality of the curve. As the Skewness are positive,

Table 4: Correlation analysis

Correlation			
		Population 2012	Population 2035
Population 2012	Pearson	1	0.997**
	Correlation		
	Sig. (2-tailed)		0.003
Population 2035	N	4	4
	Pearson	0.997**	1
	Correlation		
	Sig. (2-tailed)	0.003	
	N	4	4

the curves would be left skewed and vice versa. While, the higher number values on both ends would give more Skewness in the curve.

After the normality tests, subregional population data sets for the year 2012 and 2035 were validated. The validation process was conducted by utilizing the correlation test (Algina and Olejnik, 2003) in SPSS 17.0. The results can be seen in the Table 4.

The strong positive correlation can be observed from the Table 4. The coefficient of determination was also calculated to know the variance between the population of 2012 and 2035. The outcome was almost (100%) which corroborated that population is accurately projected for the year 2035.

Meanwhile, these entire statistical tests have given assurance that future shortages of the public sector education institutions according to the number of

Table 5: Taluka wise existing and needed public education institutions

Taluka	Primary schools		Secondary schools		High schools	
	Existing 2012	Estimated 2035	Existing 2012	Estimated 2035	Existing 2012	Estimated 2035
Umer Kot	168	409	89	198	14	58
Kunri	121	227	44	105	12	33
Samaro	87	205	38	94	12	29
Pithoro	82	145	34	66	09	21
Total	458	986	205	463	47	141

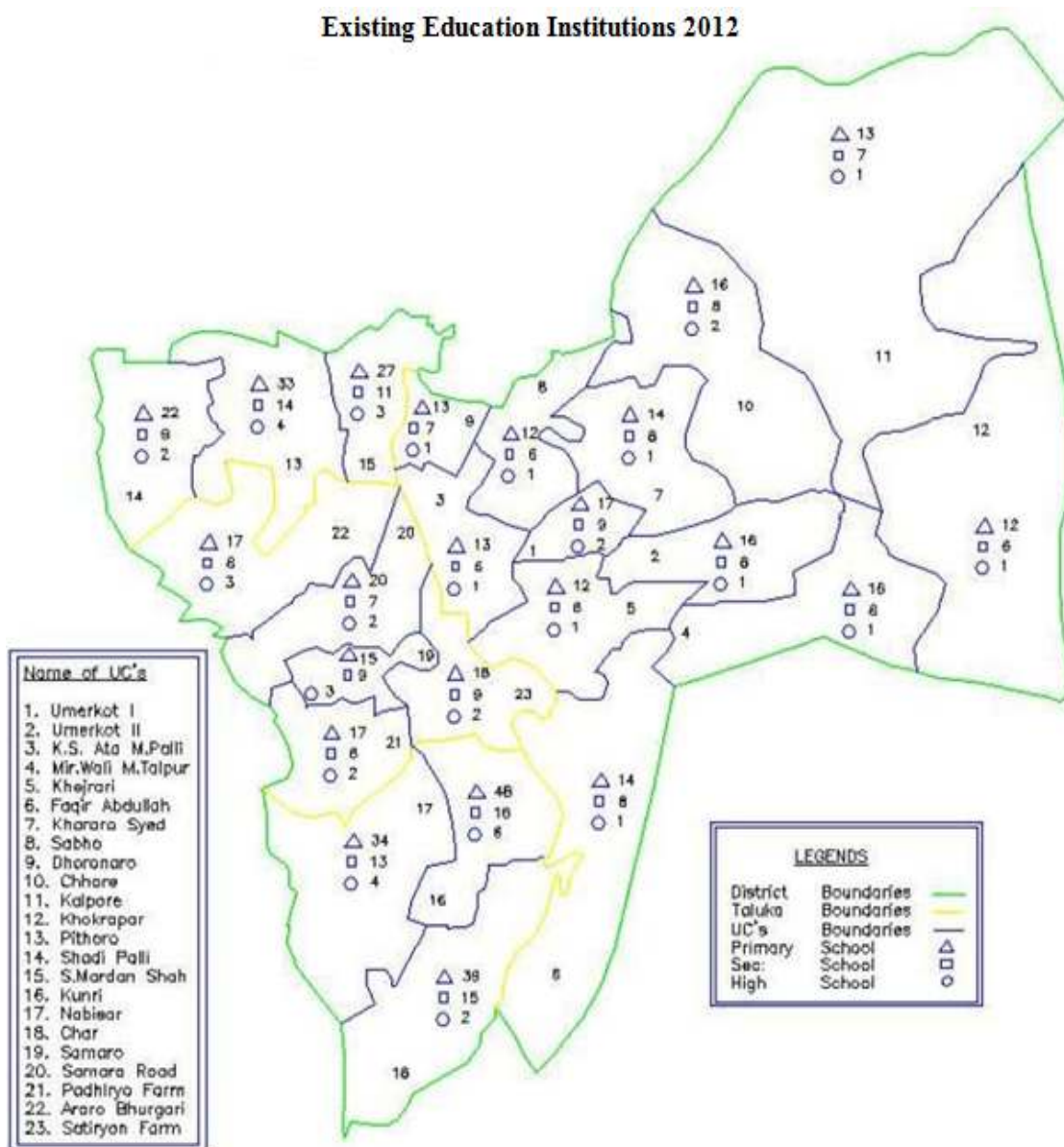


Fig. 4: Available taluka wise public sector education institutions

people were accurately determined. After validating the data and performing various analytical techniques; the Taluka wise public sector education institutions were computed and given in the Table 5. This should be noted that requirements are determined with the help of the national standards for education institutions as

mentioned in the document of “National Reference Manual”.

To show graphic representations of the available and projected education institutions of the study area, Fig. 4 and 5 are developed in the AutoCAD2000.

Estimated Educational Facilities Of District Umerkot Till 2035

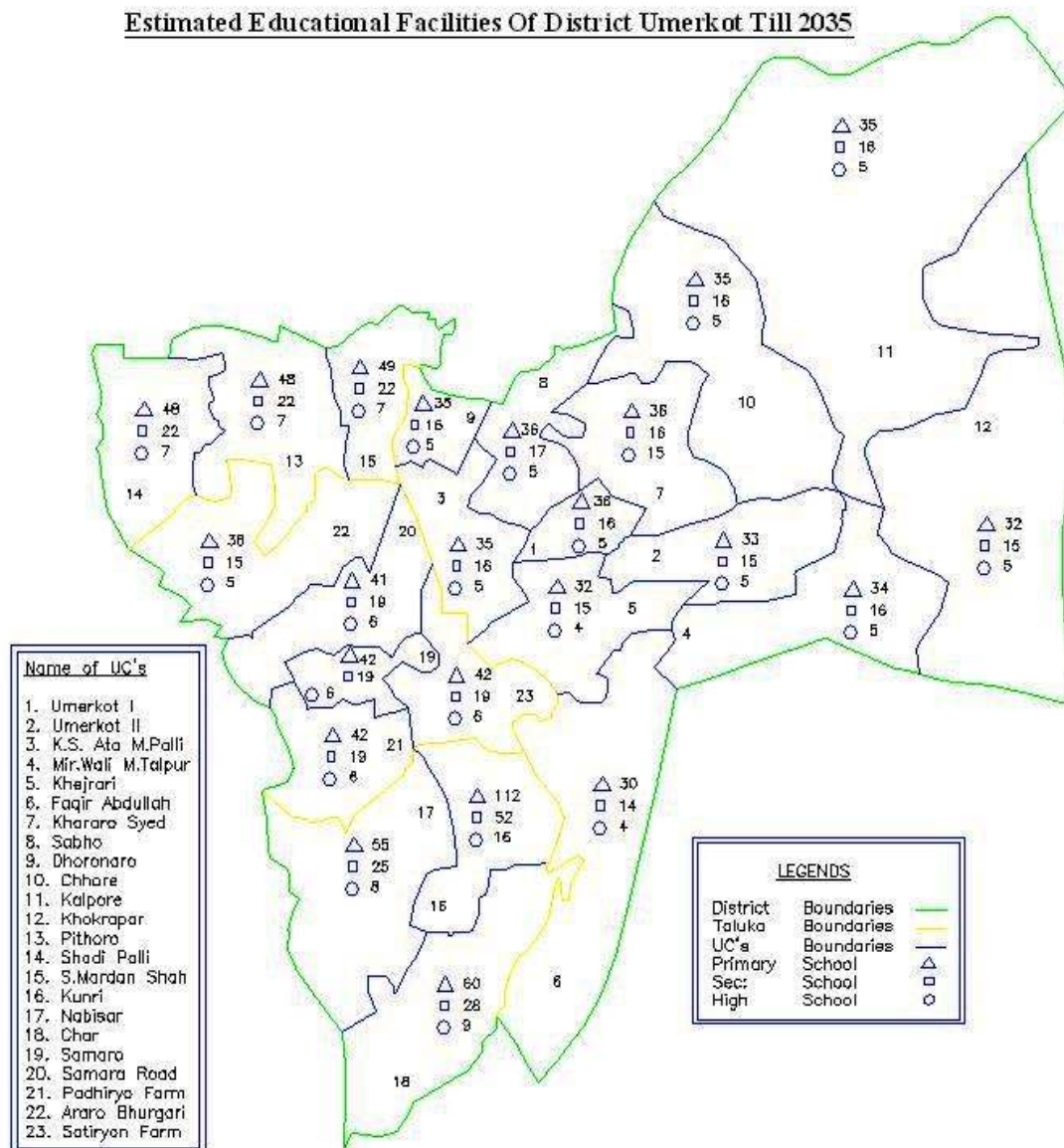


Fig. 5: Projected demand of taluka wise public sector education institutions

CONCLUSION

Public sector education institutions are simply an affordable option for rural inhabitants, to educate their children, in destitute regions of the developing countries. This study is carried out to provide basic education to rural children of the study area, as concerned authorities would pay their attention to this pressing problem. The existing as well as the futuristic education demand is calculated by referring national standards. Availability of educational facilities according to the population standards can lower down the distances between dwelling units and educational institutions which can improve and enhance education accessibility. This study is a step further in the development of the education sector of the study

area which can play its role in the physical and socioeconomic growth. The literacy ratio may be amplified in this way, if education institutions would be provided at the doorstep of the rural people.

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