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2011

Analyzing the Efficiency Differences among Basic Health Units in Sargodha District

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Abstract
Pakistan has adequate infrastructure for health services delivery at primary level. The study aims to calculate the technical efficiency of Basic Health Units (BHUs) in Sargodha by using the Data Envelopment Analysis (DEA) with the choice of inputs and outputs being specific to BHUs operation. DEA model results reveals that the mean technical efficiency under, Constant Returns to Scale (CRS) and Variable Returns to Scale (VRS) was 0.719 and 0.807 while the mean scale efficiency was 0.88. Study exposed that 77 % BHUs were technically inefficient under CRS while 66 % BHUs were technically inefficient under VRS modal. Overall 76% BHUs were inefficient and destructing the infrastructure. Moreover, findings evidently point to adverse inefficiency of BHUs in health services delivery. Study concluded that existing high level of inefficiency in BHUs needs institutional fascination for scaling up BHUs to meet both regional as well international targets such as Millennium Development Goals (MDGs) and recommended such measures that may curb the waste.
Key words: Basic Health Units, Technical Efficiency, Data Envelopment Analysis, Pakistan.

1. Introduction

First decade of this century remains remarkable in the history due to the historic commitment by the 189 heads of states known as Millennium Declaration in 2000 to combat extreme poverty, hunger and ill-health throughout the world. This commitment is summarized in the eight Millennium Development Goals (MDGs) that set targets in areas of poverty reduction, health improvements, education attainment, gender equality, environmental sustainability, and fostering global partnerships (UNDP 2003)[1]. In these goals health is at the core of achievement. Three of the eight Development Goals, eight of the 18 targets, and 18 of the 48 indicators are health related. Despite the fact that international investments to achieve MDGs by 2015 is in millions dollars with numerous effective, affordable and exceptional interventions to aggrandize the human's well being, it is still inadequate for many countries as natural disasters, terrorism, hunger, poverty and diseases are increasing more rapidly than investments. As discussed earlier, health is the most concerned MDG and on top priority which requires such durable service delivery system that can assure the quality and ease of the services to the population. Last decade of quest for MDGs recognizes the fact that primary health care is the best way to achieve sustainable development and all desired goals.

Pakistan is the on of the higher populated country in the South Asian region with 170.6 millions population. Pakistan has adept basic health services delivery system consisting off BHUs, Rural

[1] UNDP, 2003 Millennium Development Goals: A Compact among Nations to End Human Poverty. United Nations Development Programme, New York.

Health Centers (RHUs), Maternity and Child Health Centers (MCHs), Civil Hospitals and Dispensaries as well. This adequate institutional mechanism for public health services delivery abide by 968 hospitals, 4,813 dispensaries, 5,345 basic health units, 572 rural health centers, 908 maternity and child health centers and 293 TB centers. The BHU is a medical facility located in a rural Union Council which serves 5000-10,000 people in area of 15-25 square miles. The Basic Health Unit aims to provide treatment and medication in rural community, basic health education, antenatal care and basic health of children and women, immunization, and implementation of disease eradication programs such as TB, polio, etc. BHUs can serve as the backbone by making health services accessible for individuals, families and communities.

Basic health is the prime concern of development and in Pakistan BHUs are the health service providers at primary level. Likewise other governmental agencies involved in public services delivery health also should accountable for the services they provide. Accountability of the health services can be done by measuring the technical efficiency of basic health services provided by BHUs. Measurement of technical efficiency remnant in docket of the researcher's since the complementary work of Taylor and Fayol. Assorted forms of operations research techniques (ORT) exist to measure the technical efficiency of Decision Making Units (DMUs) with various complications. DEA is also a relatively new form of ORT for technical efficiency measurement of DMUs first introduced by Charnes et al. in 1978 to measure the efficiency of DMUs having multiple inputs and outputs. Eager discussion on technical efficiency measurement started in 1980s but major concern of the technical efficiency measurement restricted to hospital level analysis. Evidence from various studies in developed and developing countries showed that prevalence of high level technical inefficiency in health sector lead towards the wastage of available resources. Till now, as far as our knowledge is concerned, no study of technical efficiency in the health sector has been done in Pakistan. Therefore the assessment of technical efficiency of basic health units is essential to utilize the available resources optimally and expedite the move to achieve millennium development goals and better health. Present study examines the technical and scale efficiencies of 116 BHUs in Sargodha by using Data Envelopment Analysis.

2. Systematic Review

Data Envelopment Analysis is widely appreciated by numerous countries to inspect efficiency of services. Banker, Conrad and Strauss (1986) first used DEA in health sector of US to study the hospital production. Eventually DEA becomes accredit tool of efficiency analysis in the health sector. Review of concerned literature is mentioned below.

Dash et al. (2010) measured the technical and scale efficiencies of public district hospitals in Tamil Nadu, India. Study used the data of 29 districts hospitals for the year 2004-2005, collected and administered by the Directorate of Medical and Rural Health Services, Tamil Nadu. Technical and scale efficiencies were assessed by using DEA. Output variables include number of inpatients, number of outpatient visits, number of child deliveries, number of surgeries, and number of emergency cases attended, while number of staff and number of beds were used as input variables. 52% of the hospitals were technically efficient while, the remaining 48% were technically inefficient. Average scale efficiency of inefficient hospitals was 0.81.

Ismail (2010) estimated the technical efficiency of states health institutions in Sudan. Study used the annual data of 15 states of Sudan for the year of 2007 published by the Federal Ministry of Health. Output-orientated DEA model was applied to estimate the technical efficiency of states. Output variables include number of inpatients and outpatients, while input variables were

number of hospitals, number of health centers, number of beds, number of physicians and other medical staff. 40% of the states were technically inefficient under CRS while 33 % states were technically inefficient under VRS. 40% states were scale inefficient of which, 3 states were operating under variable returns to scale while remaining were operating under decreasing returns to scale.

Akazili et al. (2008) evaluate the technical efficiency of public health centers in Ghana. Study used the primary data of 89 health centers in Ghana collected in 2005. DEA was applied to determine the degree of efficiency of health centers. Study employed human resources (clinical and non- clinical staff), total expenditures on drugs and other consumables and number of beds as the inputs of health center and out patient visits, number of antenatal visits, number of deliveries, number of child immunized and number of family planning visits as the outputs of health center. Finding showed that 65% of the health centers were technically inefficient and were wasting the provided resources.

Jemai (2007) examined the effectiveness of health care system in African and Arab Countries. Study exploited the hospital data of 37 countries (18 African countries and 19 Arab countries) for the year 1998-2005 collected by World Health Organization and the World Bank. Three DEA models were used to measure technical efficiency. Death rate under five years, life expectancy at birth and good health were used as output variables and number of physicians and beds per 1000 inhabitants and amount of total expenditure on health were used as input variables. Mean efficiency scores of the health sectors were 0.74 for the three Models. The most efficient countries had the weakest total health expenditure (DEA1 and DEA3). Increase of input reduced the efficiency scores of health system.

Alvarado (2006) examined the productive efficiency of the primary health care centers of Chile. Study used the cross sectional data of 24 Chilean municipalities located in the urban area for the year 2001. DEA was employed to evaluate technical and scale efficiencies. Study used two inputs (personnel and operational costs) and two outputs (number and time of visits corresponding to each municipality) to evaluate efficiency. The results showed 5 municipalities were totally efficient, 6 were Constant Returns to Scale efficient, 9 were VRS efficient and 9 were scale efficient. Efficiency was affected by the administration of health centers by the local governments.

Zere et al. (2006) determined the technical and scale efficiencies of district hospitals of Namibia. Study used the panel data of 30 public sector hospitals for four financial years 1997-98—2000-01. DEA was used to assess technical efficiency. Total recurrent expenditure, number of nurses and number of beds were used as input variables and total number of outpatient visits and inpatient days were used as output variables. Average efficiency level during the period was less than 0.75. Less than half of the hospitals were on the technically efficient frontier. Increasing return to scale was observed to be the predominant form of scale efficiency.

Renner et al. (2005) measured the technical and scale efficiencies of public health units (PHUs) in Pujehun district of Sierra Leone. Study used the cross-sectional data of 37 PHUs, collected and administered by Pujehun district health team. DEA was applied to assess the technical and scale efficiencies. DEA scores were appraised by using vaccinator, community health nurse, emergency and humanitarian officer, sub- ordinate staff, materials and capital as input variables and number of antenatal care visits, number of babies delivered, number of nutrition/growth monitoring visits, number of child under five immunized and number of health education session conducted by PHU as output variables. Out of 37 peripheral health units (PHUs), 41 percent were technically efficient. Remaining 59 percent were technically inefficient, with an average

efficiency score of 0.63. 65 percent health units were scale inefficient, with an average scale inefficiency score of 0.72.

1. Data sources and methodology

Study used the data of 116 Basic BHUs in district Sargodha for the year 2010. Data was managed by the Statistical department of the district health office, in the shape of monthly reports from all BHUs of the district. Four, outputs and inputs were used to evaluate the efficiency of the BHUs. Input variables are Number of Medical staff, Number of Para-medical staff, Number of Lady Health Workers, Number of other staff while, Number of out door patients, Number of Child immunized, Number of Family Planning Visits and Number of First Antenatal care visits are output variables.

3.1 Data Envelopment Analysis

Data Envelopment Analysis is non parametric linear programming method used to evaluate the relative efficiency of each production unit among a fairly homogenous DMUs. The location the shape of efficiency frontier is determined by the data, using simple notion that a DMU that employs less inputs than other to produce same level of output, is considered more efficient. DEA evaluate efficiency in two stages: first it identifies a frontier based on DMUs usage of input and output mix then compares the other DMUs in data with the DMUs lying on the frontier. Efficiency in DEA is defined as a ratio of weighted sum of outputs of DMUs by Weighted sum of inputs.

Efficiency = Weighted sum of outputs / weighted sum of inputs

Technical efficiency of each decision making unit is computed by solving the following mathematical program:

$$\max \left[\frac{\sum_{s=1}^{S} u_s \times y_{s1}}{\sum_{n=1}^{N} v_n \times x_{n1}} \right]$$

Subject to:

$$\frac{\sum_{s=1}^{S} u_s \times y_{si}}{\sum_{n=1}^{N} v_n \times x_{ni}} \leq 1 \qquad i = 1,\ldots, I$$

$y_{s1-Quantity\ of\ output\ S\ for\ DMU_1}$

$u_{s-Weight\ attached\ to\ output\ s,}\quad u_s>0 \quad s=1,\ldots,S$

$x_{n1-Quantity\ of\ output\ N\ for\ DMU_1}$

$v_{n-Weight\ attached\ to\ input\ n,}\quad v_n>0 \quad n=1,\ldots,N$

The linear program seeks out for decision making unit DMU_1 the set of input weights v_n and output weights u_s that maximizes the efficiency of DMU_1.

3.2 Constant Returns to Scale (CRS) Model

Charnes, Cooper and Rhodes (1978) presented CRS which, consider that all the DMUs under consideration are being operated at optimal scale.

The functional programming model can be converted into linear programming model by imposing the following constraint:

$$\sum_{n=1}^{N} v_n \times x_{ni} = 1$$

Thus, the relative efficiency of DMU_1 can be measured by solving the following equation:

Efficiency = max $u_s, v_n \sum_{s=1}^{S} u_s\ y_{sp}$

Subject to:

$$\sum_{s=1}^{S} u_s\ y_{si} - \sum_{n=1}^{N} v_n\ x_{ni} \leq 0$$

$$\sum_{n}^{N} v_n\ x_{np} = 1$$

$$u_s, v_n \geq 0$$

P - The hospital under assessment

y_{si} - Amount of output s produced by BHU_i

x_{ni} - Amount of input n used by BHU_i

Us - Weight attached to output s, $u_s > 0 \qquad s = 1, \dots, S$

v_n - Weight attached to input n, $v_n > 0 \qquad n = 1, \dots, N$

3.3 The Variable Returns to Scale (VRS) Model

Banker, Charnes and cooper (1984) extended DEA to accommodate a more flexible VRS model which may be appropriate when all DMUs are not operating at an optimal scale. In this situation technical efficiency measure will be mixed with scale efficiency. VRS model an additional convexity constraint is imposed on the CRS model. The relative efficiency score of the hospital p can be obtained by solving the following:

Efficiency = max $u_s, v_n \sum_{s=1}^{S} u_s\ y_{sp} + u_0$

Subject to:

$$\sum_{s=1}^{S} u_s\ y_{si} - \sum_{n=1}^{N} v_n\ x_{ni} + u_o \leq 0$$

$$\sum_{n}^{N} v_n\ x_{np} = 1$$

$$u_s, v_n \geq 0$$

u_o is convexity constraint and its sign determines the returns to scale. If $u_o < 0$ it shows increasing returns to scale, if $u_o > 0$ it shows decreasing to returns to scale, if $u_o = 0$ it shows constant returns to scale. Scale efficiency of hospital can be obtained by the ratio of CRS technical efficiency to the VRS technical efficiency.

4. Results and Discussion

Table 1 presents the summary statistics of the input and output variables of the 116 BHUs. Table 2 presents the summary statistics of the input and output variables of the efficient and inefficient BHUs. Results showed that the efficient BHUs had more mean values of the output variables than the inefficient BHUs while, inefficient BHUs had a more mean values of the input variables than the efficient BHUs.

Table 1: Summary Statistics of Basic Health Centers (BHUs)

Variable	Mean	Std. deviation	Min.	Max.
	Output			
Number of out patient visits	396.03	190.286	114	1142
Number of children immunized	55.66	49.886	0	460
Number of family planning visits	28.51	18.387	0	79
Number of first antenatal care visits	28.59	17.811	0	104
	Input			
Number of medical staff	0.71	0.457	0	1
Number of Para medical staff	6.20	1.534	1	9
Number of lady health workers	12.03	6.896	0	33
Number of other staff	3.35	2.312	0	8

Table 2: Summary Statistics of efficient and inefficient Basic Health Centers (BHUs)

	Efficient BHUs				Inefficient BHUs			
			Output					
Variables	Mean	Std. Dev.	Min.	Max.	Mean	Std. Dev.	Min.	Max.
Number of out patient visits	388.95	216.414	114	1142	399.75	176.423	133	998
Number of children immunized	59.85	71.308	0	460	53.45	34.021	0	175
Number of family planning visits	32.48	22.633	0	79	26.42	15.467	0	72
Number of first antenatal care visits	32.78	22.741	0	104	26.38	14.256	0	63
			Input					
Number of medical staff	0.48	0.506	0	1	0.83	0.379	0	1
Number of Para medical staff	5.78	1.901	1	8	6.42	1.257	3	9
Number of lady health workers	10.35	7.698	0	32	12.91	6.310	0	33
Number of other staff	2.40	2.073	0	6	3.86	2.284	0	8

Table 3 presents the technical and scale efficiency scores and the returns to scale by using the VRS model in the DEA. DEA efficiency scores range from 0 (totally inefficient) to 1 (efficient). Results of VRS DEA model explained that 40(34.48%) BHUs were technically efficient, while the remaining 76(65.52%) were technically inefficient. Among the inefficient BHUs 10(8.62%) had a technical efficiency scores less than 0.50, 32 (27.58%) BHUs had efficiency scores between 0.50 and 0.75, 34(29.31%) BHUs had efficiency scores between 0.75 and 1. The average technical efficiency score was 0.807 with the standard deviation of 0.21. Out of this, the inefficient BHUs had average technical efficiency scores of 0.705 with a standard division of 0.19. This implies that on average inefficient BHUs could reduce their utilization of all inputs by 29.5% without reducing output.

Out of the 116 BHUs analyzed 28(24.13%) were scale efficient while the remaining 88(75.87%) were scale inefficient. Among the inefficient BHUs 15(12.93%) had scale efficiency scores less than 0.75, 73 BHUs (62.93%) between 0.75 and 1. the average scale efficiency score was 0.885 with the standard deviation of 0.109. the inefficient BHUs had an average scale score of 0.847 with the standard deviation of 0.10; implying there is potential for increasing total output by about 15.3% by using the existing capacity or size of the BHUs.

Among the 116 BHUs, 29(25%) BHUs exhibited constant returns to scale implying that they were operating at their productive size. 81(69.82%) BHUs exhibited decreasing returns to scale while, 6(5.18%) BHUs exhibited increasing returns to scale. Hospitals exhibiting increasing and decreasing returns to scale should expand and scale dawn respectively both their inputs and outputs in order to operate at their most productive size.

5. Conclusion and Policy Implications

Efficiency in basic health services at primary level can pave the way for destination. The present study rationally demonstrated the applicability of DEA in health sector to indentify the least and most efficient BHUs in Sargodha District. Harmonizing capability of DEA for acclimating heterogeneous inputs and outputs is widely accepted and appraised by academia and policy makers which makes it very exceptional scale of efficiency measurement. This study determines the efficiency of BUHs in Sargodha District using the multiple inputs and outputs involved in BHUs operation by adopting DEA model. DEA model results reveals that the mean technical efficiency under, CRS and VRS was 0.719 and 0.807 while the mean scale efficiency was 0.885. Study exposed that 77 % BHUs were technically in efficient under CRS while 66 % BHUs were technically inefficient under VRS modal. Overall 76% BHUs were inefficient and destructing the infrastructure. The overall findings assented with the communal perception that public health services delivery mechanism in developing countries is technically inefficient. There should be multiple causes of this high level of inefficiency in the BHUs which should be unpacked. Government should allocate more resources on the health sector to curb the ruin infrastructure. Moreover, it is also recommended that similar studies should be taken at all level of health services delivery in the country.

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ANNEXURE

Table 3: Technical and Scale efficiency scores for Basic Health Units

Basic Health Unit (BHU)	CRS Technical efficiency Scores	VRS Technical efficiency Scores	Scale efficiency Scores	Returns to scale
BHU Hyderabad town	0.424	0.529	0.8	Decreasing
BHU Luqman	0.799	1	0.799	Decreasing
BHU Mari	0.422	0.616	0.686	Decreasing
BHU Sakesar	0.599	0.725	0.825	Decreasing
BHU Aqil Shah	1	1	1	Constant
BHU Chak 74/SB	0.677	0.993	0.681	Decreasing
BHU Chak 26/SB	0.838	0.839	0.999	Decreasing
BHU Chak 28/SB	0.79	0.929	0.85	Decreasing
BHU Asianwala	0.22	0.287	0.767	Decreasing
BHU Chak 30/NB	1	1	1	Constant
BHU Chak 30/SB	0.645	0.722	0.893	Decreasing
BHU Chak 33/SB	0.862	0.982	0.879	Decreasing
BHU Chak 34/SB	0.51	0.516	0.989	Decreasing
BHU Chak 36 NB	0.684	0.84	0.814	Decreasing
BHU Chak 38/SB	0.612	0.613	0.998	Increasing
BHU Chak 40/SB	0.362	0.392	0.924	Decreasing
BHU Chak 43/NB	0.552	0.902	0.612	Decreasing
BHU Chak 44/SB	0.467	0.558	0.837	Decreasing
BHU Chak 53/SB	0.306	0.306	0.999	Constant
BHU Chak 58/NB	0.299	0.299	1	Constant
BHU Chak 60/NB	0.857	0.912	0.94	Decreasing
BHU Chak 104/SB	0.617	0.804	0.768	Decreasing
BHU Chak 107/SB	0.7	0.788	0.888	Decreasing
BHU Chak 109/SB	0.583	0.72	0.809	Decreasing
BHU Chak 110/SB	0.482	0.664	0.725	Decreasing
BHU 75/SB	0.671	0.74	0.906	Decreasing
BHU Chak 82/NB	1	1	1	Constant
BHU Chak 84/SB	0.208	0.318	0.654	Decreasing
BHU Chak 85/SB	1	1	1	Constant
BHU Chak 88/SB	1	1	1	Constant
BHU Chak 92/NB	0.657	0.942	0.697	Decreasing
BHU Chak 94/SB	0.536	0.576	0.93	Decreasing
BHU Chak 95/NB	0.855	0.936	0.913	Decreasing
BHU Chak 95/SB	0.472	0.58	0.813	Decreasing
BHU Chak 98/SB	0.578	0.863	0.67	Decreasing
BHU Chak 99/NB	0.661	0.761	0.869	Decreasing
BHU Chak 100/SB	0.917	1	0.917	Decreasing
BHU Chak 101/NB	0.449	0.661	0.679	Decreasing
BHU Chak 101/SB	0.682	0.818	0.833	Decreasing
BHU Chak 103/SB	0.779	0.904	0.862	Decreasing

BHU Dharema	0.732	1	0.732	Decreasing
BHU Chak 113/SB	0.723	0.764	0.946	Decreasing
BHU Chak 31/SB	0.722	0.954	0.757	Decreasing
BHU Salam	0.874	0.97	0.902	Decreasing
BHU Ratto-Kala	1	1	1	Constant
BHU Rakh Chrgah	0.524	0.526	0.997	Increasing
BHU Purana Bhalwal	0.789	1	0.789	Decreasing
BHU Nabi Shah Khurd	0.778	1	0.778	Decreasing
BHU Hazoor Pur	1	1	1	Constant
BHU Hathi Wind	0.687	0.754	0.911	Decreasing
BHU Gull Pur	0.715	0.763	0.937	Decreasing
BHU Dhori	0.736	0.79	0.932	Increasing
BHU Deowal	0.787	1	0.787	Decreasing
BHU Chak Saida	1	1	1	Constant
BHU Chak Mubarak	1	1	1	Constant
BHU Chak 18/NB	0.982	1	0.982	Increasing
BHU Chak 15/SB	1	1	1	Constant
BHU Chak 10/NB	0.831	0.875	0.95	Decreasing
BHU Chak 10/ML	1	1	1	Constant
BHU Chak 8/ML	0.549	0.655	0.838	Decreasing
BHU Chak NO 2/NB	0.646	0.661	0.978	Decreasing
BHU Chabba Purana	0.418	0.44	0.949	Decreasing
BHU Ali Pur Sayden	0.391	0.527	0.743	Decreasing
BHU Kalyan Pur	0.969	0.973	0.996	Decreasing
BHU Takhat Hazara	0.362	0.374	0.969	Decreasing
BHU Syed Nau	1	1	1	Constant
BHU Rural Lilliani	1	1	1	Constant
BHU Mateela	0.52	0.632	0.823	Decreasing
BHU Kot Raja	0.501	0.552	0.908	Decreasing
BHU Korey Kot	1	1	1	Constant
BHU Hujjan	1	1	1	Constant
BHU Dodha	0.585	0.732	0.799	Decreasing
BHU Chak 19/SB	1	1	1	Constant
BHU Chak 12/SB	0.568	0.614	0.926	Decreasing
BHU Chak Miana	0.886	1	0.886	Increasing
BHU Bucha Kalan	0.759	0.925	0.821	Decreasing
BHU Behk Lurka	1	1	1	Constant
BHU Chak 10/SB	0.825	0.995	0.829	Decreasing
BHU Kot Bhi Khan	1	1	1	Constant
BHU Mangowal	0.487	0.506	0.963	Decreasing
BHU Sabowal	0.68	0.742	0.918	Decreasing
BHU Mochiwal	1	1	1	Constant
BHU Khawaja Abad	0.628	0.687	0.913	Decreasing

BHU Kandan	1	1	1	Constant
BHU Kalra	0.979	1	0.979	Decreasing
BHU Jahanabad	0.715	0.736	0.972	Decreasing
BHU Ghangwal	0.571	0.668	0.855	Decreasing
BHU Bakhar Bar	0.372	0.408	0.913	Decreasing
BHU Lakhiwal	0.32	0.437	0.733	Decreasing
BHU Thatta Muhammad Panah	1	1	1	Constant
BHU Vijh	0.66	0.844	0.783	Decreasing
BHU Thatti Long (Norewall)	0.494	0.575	0.859	Decreasing
BHU Machar Khadi	0.254	0.355	0.716	Decreasing
BHU Kudlathi	0.651	0.851	0.765	Decreasing
BHU Jahanian Shah	0.56	0.859	0.652	Decreasing
BHU Havali Majoka	0.678	0.786	0.862	Decreasing
BHU Gul Da Kot	0.812	0.982	0.826	Decreasing
BHU Dharah	0.766	1	0.766	Decreasing
BHU Dera Jadeed	0.592	0.78	0.759	Decreasing
BHU Mubharey Khan	0.711	0.726	0.979	Decreasing
BHU Chak 60/SB	0.493	0.557	0.884	Decreasing
BHU Chak 50/SB	1	1	1	Constant
BHU Chak 152/NB	1	1	1	Constant
BHU Chak 115/NB	0.431	0.54	0.798	Decreasing
BHU Chak 120/SB	0.516	0.739	0.699	Decreasing
BHU Chak121/NB	0.427	0.547	0.78	Decreasing
BHU Chak 126/SB	1	1	1	Constant
BHU Chak 130/SB	0.627	0.937	0.669	Decreasing
BHU Chak 131/SB	0.987	1	0.987	Decreasing
BHU Chak 135/SB	1	1	1	Constant
BHU Chak 142/NB	0.917	1	0.917	Decreasing
BHU Chak 147/148 NB	0.684	0.864	0.792	Decreasing
BHU Chak 163/NB	0.93	0.964	0.964	Increasing
BHU Shah Nikdar	0.818	1	0.818	Decreasing
BHU Shaheen Abad	1	1	1	Constant
BHU Sobhaga	1	1	1	Constant