

**COMPARISON OF PERFORMANCE OF COMMUNITY MODEL SCHOOLS
AND GOVERNMENT GIRLS PRIMARY SCHOOLS IN PUNJAB:
A PRELIMINARY STATISTICAL STUDY**

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ABSTRACT

The teachers and students are the backbone of an educational system. Well equipped and trained teachers are the need of time for uplifting quality of education. Educational reform must be steady and pragmatic, with furnished research institutions in developing countries to meet the global challenges of Education For All (EFA). Community Model Schools' under the Government of the Punjab meet the global challenges of education by the Government in reducing rural-urban educational disparities. These schools are established to provide quality education in rural areas. The purpose of the paper is to examine the opinions of headmistress, parents and students of primary education in Pakistan and check and compare performance of Community Model Schools and government girls primary schools.

1. INTRODUCTION

Primary education is the basic and the most important instrument of human resource development. It is the basic right of every child/citizen to get quality education. Primary education is an important issue at global level. The Government of Pakistan has taken several steps, framed many policies and launched many programmes to achieve the internal educational goals. Educational For All (EFA) was promoted in response to the commitment made at Dakar World Summit. A major focus of Education Sector Reforms (ESR) programme has been to make primary school more functional. The Community Model Schools project was initiated in rural areas of Pakistan (1989-90 to 1994-95) with an aim of providing quality education to students.

It is assumed that performance in a school is dependent upon the academic and professional qualifications of headmistresses, teachers, students, parents and administrators, with relinquished parameters of the performance in administration like number of teachers, number of students, drop out rate, academic performance, availability of physical facilities, organization of co-curricular activities and performance of school council.

In this paper, we determine the status of girls primary schools in rural areas and to check and compare the performance of Community Model Schools and the government girls primary schools.

2. LITERATURE REVIEW

According to Khan and Zeb (2007) primary education is the basic problem of Pakistan. Shami and Hussain (2006a) view the education as enterprise of the 21st century at global level. Lakshmi (2004) states that basic education is a critical area which is exercised in planning and policies of education. Nash (2003) determines the sociology of education that has made distinction between primary and secondary effects of socialization in order to construct explanatory theories of inequality of educational opportunities among rural and urban population.

Ali (2006) is of the view that teacher's attitude, organizational climate and student's academic achievement provide a bright picture regarding student's performance. The results of the study reflect that good school environment positively affects the students' performance. The environment of home and school is very crucial for the development of the Child's personality (Devi, 2003). Pandey (2004) describes the importance of family in status of the girl child.

According to Ahmed (2005), the quality of education requires devotee and trained teachers at all levels. The teachers must undergo intensive in-service training to improve their working efficiency and ability. Ahmed (2005) states that students are backbone of the education system. The work upon to get the final outcome of formal education. When students enter the educational institutions they must be the focus of attention of the teachers, parents, community and the governments.

Suryadarma et al. (2006) study about students' performance in public primary schools of developing countries and highlight the students' performance.

Gleason et al. (2007) outlines a theoretical model about grade retention on teachers and their peer rated academic competency.

3. METHODOLOGY

On the basis of review of literature, the researchers developed a frame work of the study given at Fig. 1:

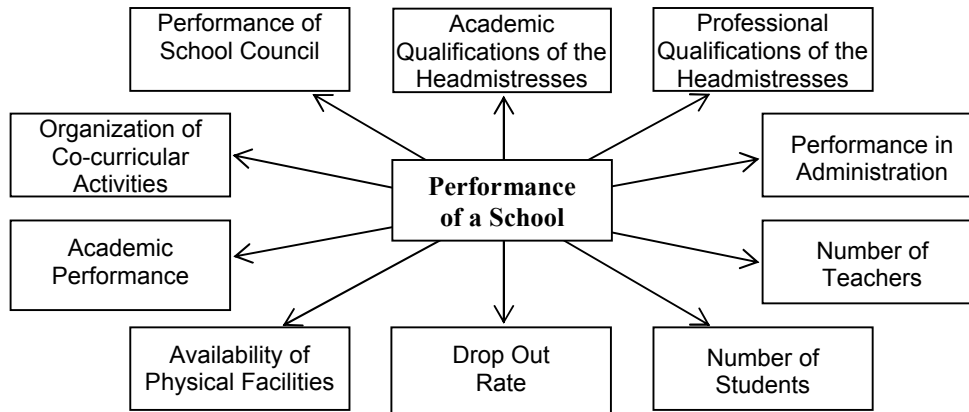


Fig. 1: Theoretical Framework of the Study

The indicators of school performance as identified by many researchers are given below:

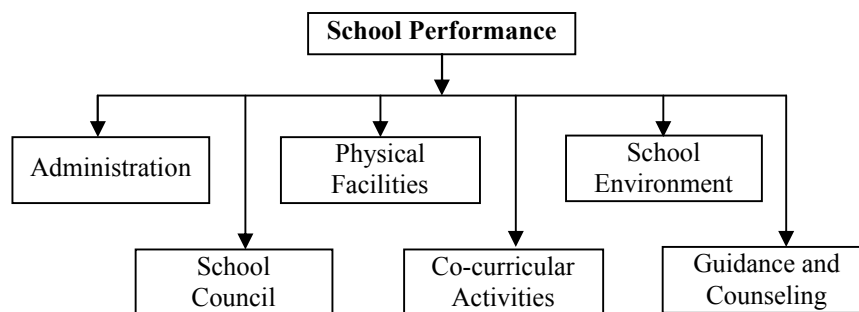


Fig. 2: Indicators of School Performance

In order to develop some kind of indicators of school performance all categories of subjects are included in the population. We consider five categories of subjects viz. headmistresses, teachers, students, parents and administrators of Community Model Schools and Government Girls Primary Schools in the Punjab province.

For the purpose of selection of sample from the population, a list of Community Model Schools is collected from the office of Girls Primary Education Project (GPEP, 2003) Lahore. Similarly, a list of Government Girls Primary Schools is collected from the office of Educational Management Information System (EMIS, 2003). The lists of both types of schools are scrutinized (See Table A-1). The overall population of the study and the various samples drawn from these populations are depicted in the following diagram:

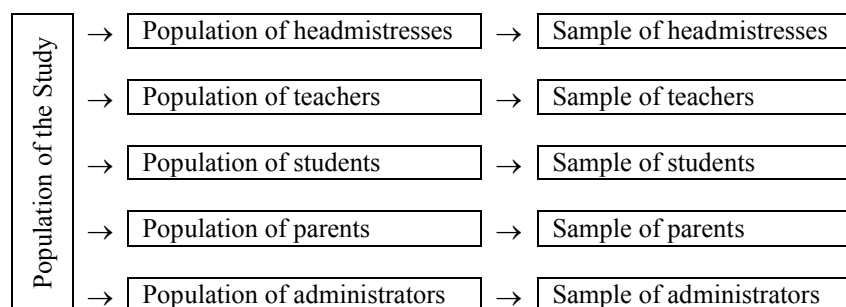


Fig. 3: Sub-Populations of the Study

There are 35 districts in the province of Punjab wherein there are 873 Community Model Schools and 21,857 primary schools. The total enrolment in Community Model Schools is 173,082 and 5,025,573 students in primary schools. The average number of students in each school varies from 100 per school to 268 students. On the average enrolment in primary school is 230 students per school and 198 students per community model school. The district-wise community and primary schools and their rural units are given at Appendix A. We select 10 schools (Five Community Model and Five Government Girls Primary Schools) from each district on random basis. Resultantly, 350

schools are selected which include 175 Community Model Schools and 175 Government Girls Primary Schools.

Two teachers from each selected schools are selected randomly to make a sample of 700 teachers.

From each selected school, 10 students are selected randomly. Therefore, a sample of 3500 students from all the schools is selected.

Ten parents from the community of each school are selected. The total sample therefore consist of 3500 parents from all selected schools.

Ten administrators are selected from each district. The total number of administrators is 350.

4. SATISFACTION OF STAKEHOLDER OF SCHOOLS

The stakeholders of schools are (i) Headmistress, (ii) Teacher, (iii) Parents and (iv) Students. The following Table 1 provides basic satisfaction of stakeholders about the two students of schools:

Table 1:
Overall Satisfaction of Stakeholders about Community Model School and Government Girls Primary Schools

Stakeholder	Type of School	Mean	S.D.
i) Headmistress	Community Model School	2.12	0.99
	Government Girls Primary School	4.42	1.20
ii) Teachers	Community Model School	2.15	0.28
	Government Girls Primary School	2.36	1.10
iii) Parents	Community Model School	2.31	(1.1)
	Government Girls Primary School	2.82	(0.85)
iv) Students	Community Model School	2.62	0.55
	Government Girls Primary School	4.36	0.68

The opinions of parents and students are most important than the opinions of headmistress and teachers who would have rather biased opinion. They tend to give better opinion about their schools. Headmistress and teachers of both system of school are satisfied with their school performance, however, Headmistress and Teachers of Community Model Schools are more satisfied by their schools than Headmistress and Teachers of Government Girls Primary Schools.

Parents seem to strongly disagree with the Government Girls Primary Schools but they are satisfied with the performance of Community Model Schools. In case of students, similar opinion of their satisfaction with Community Model School and Government Girls Primary Schools is elicited. Students are satisfied with Community Model Schools but are not satisfied with the performance of Government Girls Primary Schools.

5. REGRESSION ANALYSIS

On the responses of Headmistresses, parents and students, we have fitted regression models to see what type of differences appear among them. Table 1 is given to record in regression model.

We apply regression approach to determine the school performance on the bases of various stakeholders viz. Headmistress, parents and students. The general regression model is

$$y_{Ki} = \alpha_0 + \alpha_1 g_{1Ki} + \alpha_2 g_{2Ki} + \alpha_3 g_{3Ki} + \alpha_4 g_{4Ki} + \varepsilon_i, \quad i = 1, 2, \dots, n \quad (5.1)$$

where

- y_{Ki} denotes i th value of K th stakeholder's opinion about school performance.
- g_{1Ki} denotes i th value of K th stakeholder's opinion about Teacher's contribution to school performance.
- g_{2Ki} denotes i th value of K th stakeholder's opinion about Parent's contribution to school performance.
- g_{3Ki} denotes i th value of K th stakeholder's opinion about Student's contribution to school performance.

5.1 Headmistress Performance

If the stakeholder is Headmistress, then K is Headmistress (H) and the regression equation is

$$y_{Hi} = \alpha_0 + \alpha_1 g_{1Hi} + \alpha_2 g_{2Hi} + \alpha_3 g_{3Hi} + \alpha_4 g_{4Hi} + \varepsilon_i \quad i = 1, 2, \dots, 350 \quad (4.2)$$

The computer out puts of the regressions for Headmistress are given in Tables 1(a) to 1(f).

Table 2(a)
Model Summary for Headmistress

Model	R	R Square	Adjusted R Square	St. Error of the Estimate	Durbin-Watson
1	.750 ^a	.562	.557	.029099	1.504

a. Predictors: (Constant), gmh4, gmh1, gmh3, gmh2

b. Dependent Variable: gm_sc_per

Table 2(b)
ANOVA^b for Headmistress

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	37.464	4	9.366	110.614	.000 ^a
Residual	29.212	345	.085		
Total	66.676	349			

a. Predictors: (Constant), gmh4, gmh1, gmh3, gmh2

b. Dependent Variable: gm_sc_per

Table 2(c)
Regression Coefficients^a of Headmistress

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	.585	.252		2.321	.021		
gmh1	-.032	.026	-.046	-1.242	.215	.933	1.072
gmh2	.474	.035	.552	13.710	.000	.784	1.275
gmh3	.196	.023	.340	8.643	.000	.818	1.222
gmh4	.219	.101	.078	2.169	.031	.993	1.007

a. Dependent Variable: gm_sc_per

Table 2(d)
Model Summary by Type of Schools for Headmistress

School Type	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Community Model School	1	.734 ^a	.538	.527	.29788
Government Girls Primary School	1	.772 ^b	.596	.586	.28390

a. Predictors: (Constant), gmh4, gmh1, gmh3, gmh2

b. Predictors: (Constant), gmh4, gmh2, gmh1, gmh3

Table 2(e)
ANOVA^c by Type of Schools for Headmistress

School Type	Model	Sum of Squares	df	Mean Square	F	Sig.
Community Model School	1 Regression	17.578	4	4.394	49.522	.000 ^a
	Residual	15.085	170	.089		
	Total	32.663	174			
Government Girls Primary School	1 Regression	20.205	4	5.051	62.671	.000 ^b
	Residual	13.702	170	.081		
	Total	33.907	142			

a. Predictors: (Constant), gmh4, gmh3, gmh1, gmh2

b. Predictors: (Constant), gmh4, gmh2, gmh1, gmh3

c. Dependent Variable: gm_sc_per

Table 2(f)
Regression Coefficients^a by Type of School for Headmistress

School Type	Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
Community Model School	1 (Constant)	.267	.428		.623	.534
	gmh1	-.024	.038	-.035	-.626	.532
	gmh2	.443	.048	.557	9.155	.000
	gmh3	.194	.035	.315	5.530	.000
	gmh4	.397	.182	.111	2.088	.038
Government Girls Primary School	1 (Constant)	.491	.354		1.386	.168
	gmh1	-.050	.036	-.068	-1.371	.172
	gmh2	.516	.051	.552	10.074	.000
	gmh3	.194	.030	.358	6.455	.000
	gmh4	.258	.147	.086	1.753	.081

a. Dependent Variable: gm_sc_per

The regression analysis of overall performance of headmistresses is dependent on the performance of Government primary schools. The regression is:

$$y_H = 0.585 - \frac{0.032g_{1H}}{(-1.24)} + \frac{0.47g_{2H}}{(13.7)} + \frac{0.196g_{3H}}{(8.64)} + \frac{0.219g_{4H}}{(2.17)} \quad (5.3)$$

$$F(4,345) = 110.6*** \text{ and } R^2 = 0.562$$

The value in the parameters are standard errors of the estimators of parameters. R^2 is 56% which explains that 56% performance of headmistresses is explained by the above four variables.

The regression analysis of performance of headmistresses of Community Model Schools is dependent on school performance, school student, teacher and parents contribution to school performance. The R^2 is 54% which explains that 54% performance of headmistresses is explained by the above four variables.

The headmistress's opinion by type of schools are shown by separate regression equations for community model school and Government girls primary school. The regression equation are:

$$y_{Hcs} = 0.267 - \frac{0.024g_{1Hcs}}{(-0.63)} + \frac{0.443g_{2Hcs}}{(9.16)} + \frac{0.194g_{3Hcs}}{(5.73)} + \frac{0.379g_{4Hcs}}{(2.09)} \quad (5.4)$$

$$F(4,170) = 49.5*** \text{ and } R^2 = 0.538$$

$$y_{Hps} = 0.491 - \frac{0.050g_{1Hps}}{(-1.37)} + \frac{0.516g_{2Hps}}{(10.07)} + \frac{0.194g_{3Hps}}{(6.46)} + \frac{0.258g_{4Hps}}{(1.75)} \quad (5.5)$$

$$F(4,170) = 62.67*** \text{ and } R^2 = 0.596$$

The regression analysis of performance of headmistresses of Government primary schools is dependent on four independent parameters. R^2 is 0.538 which explains that 54% performance of headmistresses is explained by the above four variables.

5.2 Parents Performance

If the stakeholders is parents, then the K is the parents (P) and the regression equations is

$$y_{Pi} = \alpha_0 + \alpha_1 g_{1Pi} + \alpha_2 g_{2Pi} + \alpha_3 g_{3Pi} + \varepsilon_i \quad i = 1, 2, \dots, 1750 \quad (5.6)$$

The computer out-puts of regression models for parents are given in tables 2(a) to 2(c).

Table 3(a)
Regression Coefficients^a for Parents

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	.581	.067		8.633	.000		
gmh1	.595	.025	.479	23.782	.000	.379	2.639
gmh2	.144	.021	.138	6.981	.000	.395	2.529
gmh3	.126	.020	.119	6.302	.000	.431	2.322

a. Dependent Variable: gm_sc_perf

Table 3(b)
ANOVA^c by Type of Schools for Parents

School Type	Model	Sum of Squares	df	Mean Square	F	Sig.
Community Model School	1 Regression	376.545	32	125.515	393.750	.000 ^a
	Residual	556.570	1746	.319		
	Total	933.115	1749			
Government Girls Primary School	1 Regression	672.574	3	224.191	547.098	.000 ^b
	Residual	715.481	1746	.410		
	Total	1388.055	1749			

a. Predictors: (Constant), gmh3, gmh2, gmh1

b. Predictors: (Constant), gmh2, gmh1, gmh2

c. Dependent Variable: gm_sc_perf

Table 3(c)
Regression Coefficients^a by type of School for Parents

School Type	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Community Model School	1 (Constant)	.745	.106		7.007	.000
	gmh1	.611	.037	.474	16.662	.000
	gmh2	.146	.027	.144	5.331	.000
	gmh3	.075	.029	.071	2.561	.011
Government Girls Primary School	1 (Constant)	.506	.090		5.614	.000
	gmh1	.577	.035	.470	16.450	.000
	gmh2	.143	.031	.133	4.614	.000
	gmh3	.159	.028	.151	5.786	.000

a. Dependent Variable: gm_sc_perf

The regression analysis of overall performance of school is dependent on the opinion of parents regarding school performance, school administration performance, student performance and teacher performance. R^2 is 0.463 which explains that 46% performance of school as per opinion of parents is explained by the above four variables.

$$y_p = 0.581 - \frac{0.595g_{1p}}{(23.78)} + \frac{0.144g_{2p}}{(6.98)} + \frac{0.126g_{3p}}{(6.30)} \quad (5.7)$$

$$F(3,3496) = 1005.9*** \text{ and } R^2 = 0.463$$

The regression analysis of performance of Government Girls primary schools in the opinion of parents is dependent on school performance, school administration performance, student performance and teacher performance. R^2 is 0.538 which explains that 54% performance of school is explained by the above four variables.

$$y_{pcs} = 0.745 - \frac{0.611g_{1pcs}}{(16.66)} + \frac{0.146g_{2pcs}}{(5.33)} + \frac{0.075g_{3pcs}}{(2.56)} \quad (5.8)$$

$$F(3,1446) = 393.75*** \text{ and } R^2 = 0.538$$

The regression analysis of performance of Community Model Schools in the opinion of parents is dependent on school performance, school administration performance, student performance and teacher performance. R^2 is 0.485 which explains that 48% performance of school is explained by the above four variables. It suggests that in the opinion of parents, the performance of Community Model Schools is better than Government girls primary schools.

$$y_{pps} = 0.5.6 - \frac{0.377g_{1pps}}{(-16.45)} + \frac{0.143g_{2pps}}{(4.65)} + \frac{0.159g_{3pps}}{(5.79)} \quad (5.9)$$

$$F(3,1746) = 547.1*** \text{ and } R^2 = 0.485$$

5.3 Students Performance

If the stakeholder is student, then the K is the “Student” and the regression equation is

$$y_{si} = \alpha_0 + \alpha_1 g_{1si} + \alpha_2 g_{2si} + \alpha_3 g_{3si} + \alpha_4 g_{4si} + \varepsilon_i \quad i = 1, 2, \dots, 3500 \quad (5.10)$$

The computer out-puts of regression models for students are given in tables 3(a) to 2(d).

Table 4(a)
ANOVA^b for Students

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1235.903	4	308.976	790.076	.000 ^a
Residual	1366.794	3495	.391		
Total	2602.697	3499			

a. Predictors: (Constant), gmh4, gmh1, gmh3, gmh2

b. Dependent Variable: gm_sc_perf

Table 4(b)
Regression Coefficients^a of Headmistress

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	.593	.068		8.790	.000		
gms1	.328	.021	.280	15.355	.000	.453	2.206
gms2	.290	.024	.259	11.862	.000	.314	3.182
gms3	.195	.020	.188	9.599	.000	.392	2.552
gms4	.057	.019	.054	3.064	.000	.483	2.070

a. Dependent Variable: gm_sc_per

Table 4(c)
ANOVA^b by Type of Schools for Students

School Type	Model	F	Sig.
Community Model School	1 Regression	556.234	.000 ^a
	Residual		
	Total		
Government Girls Primary School	1 Regression	331.422	.000 ^b
	Residual		
	Total		

a. Predictors: (Constant), gms4, gms1, gms3, gms2,

c. Dependent Variable: gm_sc_perf

Table 4(d)
Regression Coefficients^a by type of School for Students

School Type	Model	Unstandardized Coefficients		Standardized Coefficients
		B	Std. Error	Beta
Community Model School	1 (Constant)	.304	.094	
	gms1	.407	.031	.342
	gms2	.434	.035	.368
	gms3	.185	.027	.166
	gms4	-.094	.026	-.079
Government Girls Primary School	1 (Constant)	.881	.096	
	gms1	.247	.030	.213
	gms2	.201	.034	.184
	gms3	.190	.029	.190
	gms4	.170	.026	.174

a. Dependent Variable: gm_sc_perf

The regression analysis of overall performance of school is dependent in the opinion of students regarding school administration, school performance, teacher performance. R^2 is 0.475 which explains that 47% performance of school as per opinion of students is explained by the above four variables.

$$y_s = 0.593 - \frac{0.328g_{1s}}{(-15.35)} + \frac{0.290g_{2s}}{(11.86)} + \frac{0.195g_{3s}}{(9.60)} + \frac{0.057g_{4s}}{(+3.06)} \quad (5.11)$$

$$F(4,3495) = 790.1*** \text{ and } R^2 = 0.475$$

The regression analysis of performance of Government Girls primary schools in the opinion of students is dependent on school administration, school performance and teacher performance. R^2 is 0.56 which explains that 56% performance of school is explained by the above four variables.

$$y_{scs} = 0.304 - \frac{0.407g_{1scs}}{(13.23)} + \frac{0.434g_{2scs}}{(12.33)} + \frac{0.185g_{3scs}}{(6.75)} - \frac{0.094g_{4scs}}{(-3.64)} \quad (5.12)$$

$$F(4,1745) = 556.2*** \text{ ad } R^2 = 0.56$$

The regression analysis of performance of Government Girls primary schools in the opinion of students is dependent on school administration, school performance and teacher. R^2 is 0.43 which explains that 43% performance of school is explained by the above four variables. It suggests that in the opinion of students, the performance of Community Model Schools is better than Government girls primary schools.

$$y_{sps} = 0.881 + \frac{0.247g_{1sps}}{(8.30)} + \frac{0.201g_{2sps}}{(5.90)} + \frac{0.190g_{3sps}}{(6.51)} + \frac{0.170g_{4sps}}{(6.46)} \quad (5.13)$$

$$F(4,174) = 331.4*** \text{ and } R^2 = 0.430$$

Based on the statistical working on the performance model, the overall performance of community model school is better than the Government girls primary school. The regression models are tested with F, t and R^2 values.

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REFERENCES

1. Ahmed, S.U. (2005). *Quality Education: A challenge to developing nations*. (2nd ed.). PKS Printers, Peshawar.
2. Ahmed, S.J. (2005). *Quality Education: A challenge to the stakeholders in education of developing nations*. National Book Foundation, Islamabad.
3. Ali, M.Z. (2006). *Teacher, institutional environment and students*. Delhi: Academic Excellence.
4. Devi, T.K. (2003). *Home and school environment their influence on perceptual styles*. New Delhi: Discovery Publishing House.
5. Educational Management Information System (2003). *List of Educational Institutions Punjab: 2002-2003*. Lahore: Ministry of Education.
6. Gleason, K.A., Kwok, O & Hughes, J.N. (2007). The short-term effect of grade retention on peer relations and academic performance of at-risk first graders. *The Elementary School Journal*, 107(4), 327-340.
7. Khan, U.A and Zeb, A. (2007). Development of a strategy for universalization of primary education in Pakistan. *Journal of Elementary Education*, 16(1), 31-51.
8. Lakshmi, D.V. (2004). *Basic education*. Delhi: Discovery Publishing House.
9. Nash, R. (2003). Differences in education are a real explanation of primary and secondary effect possible. *British Journal of Social Sciences*, 54(4), 433-451.
10. Pandey, V.C. (2004). *Girls primary education*. Delhi: Isha books.
11. Shami, P.A. and Hussain, K.S. (2006a). *Development of Education in Pakistan. Islamabad: Academy of Educational Planning and Management, Ministry of Education*.
12. Suryadarma, D., Suryahadi, A., Sumarto, S. & Rogess, F.H. (2006). Improving student performance in public primary schools in developing countries: Evidence from Indonesia. *Education Economics*, 14(4), 401-429.

APPENDIX-A

**District Wise No. of Community Model School and
Government Girls Primary Schools with Enrolment**

District	No. of Community Model School	Enrolment	No. of Government Girls Primary School	Enrolment
Attock	20	3079	433	77478
Bahawalnagar	36	5059	922	191197
Bahawalpur	28	3464	725	159165
Bhakkar	18	2824	620	118931
Chakwal	19	3438	431	62204
D.G. Khan	16	3708	645	187223
Faisalabad	67	15041	781	280600
Gujranwala	20	4634	747	173649
Gujrat	28	4878	660	129261
Hafizabad	18	4187	345	72489
Jhelum	14	2073	398	62527
Jhang	36	6205	1432	247876
Kasur	27	6573	587	170463
Khanewal	26	6716	543	157456
Khushab	18	2889	333	77112
Lahore	10	2916	376	138315
Layyah	15	2249	510	130668
Lodhran	24	4251	366	83952
Mandi Baha ud Din	24	5586	318	89805
Mianwali	11	1764	772	107634
Multan	22	3666	755	172514
Muzaffargarh	29	5702	794	232041
Nankana Sahib	16	3446	396	97251
Narowal	19	3182	753	127879
Okara	27	5987	573	156927
Pakpattan	18	4167	305	103767
Rahimyar khan	30	5115	1267	272147
Rajanpur	13	2187	439	109419
Rawalapindi	19	2864	955	122325
Sahiwal	42	10530	347	119556
Sargodha	42	8150	834	197736
Sheikhupura	21	4782	461	121501
Sialkot	34	6760	1135	185844
T.T.Singh	30	6838	396	127764
Vehari	36	8172	503	160899
Total	873	173082	21857	5025575