
COMPARATIVE ANALYSIS OF PUBLIC AND PRIVATE SCHOOL SECTORS: A CASE STUDY OF KARACHI-PAKISTAN

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ABSTRACT

Education is the most important factor for improving the personality of an individual. There are two main types of institutions in Pakistan: One is government and other is private school systems. Nowadays, many students in Karachi prefer to take admission in private schools due to their systematic academic curriculum, better education system and more recreational activities however their fee structure is expensive. The main objective of this research is to investigate why private school sectors' results of Secondary School Certificate (SSC) usually better than the government school sectors. SSC results of five private sector schools and five government sectors schools have been collected over the period of 2013-2017. We have found that performance of private schools is better than government schools. The department of education must apply significant strategies in public schools of Karachi to enhance their performance so that they could compete with private schools. However, education policies have only vision, which suggests strategies to increase literacy rate, capacity building and enhance facilities in government schools of Karachi, but all these intentions and commitments should be fulfilled on their merit.

KEYWORDS

Secondary School Certificate (SSC), regression analysis, performances

INTRODUCTION

Education is the most important and essential element of an individual to get improvement in his personality (Awan et al., 2015). There are two main types of schools in Karachi and three main elements of these schools are students, teachers, and curriculum which form an educational triangle. One of the most effective factors for raising pupils' achievement is the improvement of weak teaching (Aslam et al., 2011). Professional development is defined as activities that develop an individual's skills, knowledge, expertise and other characteristics of a teacher and the abilities of government schools' teachers will boost up by professional development pieces of training (Amjad & Macleod, 2014). It is the most important factor to develop students' learning, peace and stability, gender quality and economic growth. Pakistan is involved in international commitments for the promotion of education and has taken some specific steps domestically in this regard to overcome this serious problem (Muhammad et al., 2013). The progress of a country highly depends upon education standards. Motivated and courageous teachers are required in under-developed regions (Ahmed et al., 2015). 33% of public schools have no basic facilities and 50% of public schools have wash rooms which can be used by students and staff (Coleman et al., 1982). We have found that private schools performed better than public schools in past years. And Secondary School Certificate (SSC) results of public schools can be improved by taking appropriate steps significantly so that we have studied past five years result-data of public and private schools and we have also used both mathematical and statistical techniques. We have found that the progress reports in public schools were not satisfactory. However concerned authorities are interested in specific advancements to bring up educational standard which was on decrease for decades. Challenges of the modern world could not be competed without proper education (Card & Krueger, 1992). Creation of good schools is only possible in presence of good teachers (Julian, 1995). The Sindh government is following the Punjab government's teachers' recruitment policy to make recruitments of teachers every year purely on merit through the National Testing System (NTS) and other Testing services of good repute (Emmanuel, et al., 1988). Improvement of teaching quality can be improved by merit-based process of recruitment and transparent selection (Muhammad, 2012). Drinking water is not available in 50% public schools of Karachi and 63% public schools in Sindh are not facilitated with electricity supply (Hanushek et al., 1996). Curriculum in public schools must be changed to compete with current socio-economic and technological demands of this century (Bahlol & Anwar, 2011). Public agencies and private organizations monitor and evaluate schools' achievement in the most progressive countries (Rashid, 2011). The weak education system in Karachi has always been a dilemma since the inception of

Pakistan (Memon & Rasool, 2007). Whereas some teachers are disciplined and generate good results (Paul & Hanan, 1994). Those students improved grades who participated in co-curricular activities (Aslam, 2013). National education policy and vision 2030 education goals should be implemented on their merit (Memon, 2008). The main objective of this research is to find out the main causes of worse results of government schools in Secondary School Certificate (SSC) examinations and their solutions. Mathematical Modeling is used to compare efficiency and deficiency of government and private schools.

Improvement in Education System

Education plays a crucial part for progress of any country. There is a need of significant reforms and an increase in resources in public schools; these schools educate the majority of children in Karachi. However, there is an effective and appreciable role of the private school sector. The education system could be improved by taking some initiatives, in which implementation of the comprehensive literacy program, expansion of primary elementary education, improving the quality of education through teacher training, higher education sector reforms and fostering the public-private partnership are included. These steps could revamp our education system if taken properly and in good faith (Rehman & Khan, 2011).

Achievement of Public and Private Schools

The performance of public schools is worse than private schools in Karachi. The demand for private schools is increasing gradually in Pakistan due to their better standard of system and quality education. The result execution of private schools is higher than public schools (Hussain, 2018). The main reason for this demanding trend is the lack of facilities, worse structure, and quality of education in the public-school sector. The quality of education in public schools is the benchmark for private sector education providers. The department of education is responsible to overcome the problems of the education system of public schools in Karachi because this department has the authority to implement rules and regulations as per requirements. The department of education must apply significant strategies in public schools of Karachi to enhance their performance so that they could compete with private schools.

Responsibilities of Sindh Government

Sindh government should facilitate education department appropriately to compete with modern world. Introduction of some motivational activities on provincial level will encourage teachers and students. When teacher is appreciated appropriately then he will get motivated and feel respect, their confidence towards teaching will boost up definitely and it will bring fruitful results. Sindh government is responsible to overcome the problems regarding lack of subject expert instructors and unavailability

of resources to run public and private schools effectively (Bedi et al., 2000).

Responsibilities of Department of Education

Department of education is responsible to run this department effectively by taking initiatives for the betterment of education in Karachi especially in public school sector. Teaching and learning process must be monitored and supervised appropriately (Ahmed et al., 2014). An effective departmental monitoring system must be built to monitor the efficiency of government schools in Karachi. The curriculum should be updated continuously as per demands of international standard. Professional teacher training and gradual progress enhancement courses are required for bringing up education standard in Karachi. Department of education ought to conduct parents' and teachers' meetings regularly to focus on students' learning process. Physical training and extra-curricular activities would make students physically fit to meet with any physical or mental challenges.

Responsibilities of Teachers

Teacher is responsible to make the teaching and learning process effective. Teachers must be committed for the progress of students and also for their profession (Shaikh et al., 2014). Abilities of improvement are built by these teachers. The encouragement of students from a teacher would rather play a definite role in their studies. The teachers ought to take serious decisions in favor of learners so that they could be benefitted significantly. A teacher should play a vital role in students' effective learning. Students engage with learning activities appropriately due to the teacher's proper motivational and encouraging strategies.

Responsibilities of Parents

Parents must take responsibility of character building and to improve educational level of their children. They should keep control over their children strictly. Their attention towards education and learning of their kids on a daily basis is essential. Keeping children away from watching TV saves time for proper studies. Taking care of children is a full-time activity for parents. They are solely responsible for their upbringing, health, and proper education. Engagement of students in social and domestic enmity issues causes negative impacts on their learning outcomes (Yaseen et al., 2017).

RESEARCH OBJECTIVES

1. The main objective of this research is to find out the main causes of worse results of government schools in Secondary School Certificate (SSC) examinations and their solutions.
2. To find out the solution of the problems in education system of public sectors schools with respect to private sector schools.

3. To understand the importance of extra curriculum activities in any education system.

RESEARCH QUESTION

1. To what extent provincial governments are fulfilling their obligation for betterment of education system.

RESEARCH METHODOLOGY

Mathematical Modeling is used to compare efficiency and deficiency of public and private schools. The attitude of mathematical models has been analyzed with application of mathematical methods. A model is a small representation of anything or a pattern to make anything. That can be viewed indirectly. A mathematical model normally defines a system with the help of a set of variables which develops relations among these elements. Mathematical modeling, information and techniques caused predicted educational enhancements currently (Arseven, 2015).

Mathematical model describes a specific system of mathematical ideologies and it is developed by a process of mathematical modeling. An educational system can be explained for studying impacts of many factors. The assumptions, variables, and parameters are clarified by the process of model formulation. We can analyze the behavior of a mathematical model by using computer simulation and mathematical methods. Modeling is a tool to assess quantitative conjectures and to test theories experimentally. Regression can be described as relationship between dependent variable Y and independent variables X.

Linear Regression: $Y = a + b X + \mu$ (1)

Where Y = dependent variable, X = independent variable, a = the intercept, b = the slope and μ = the regression residual.

RESULTS AND DISCUSSION

We have selected the following public and private schools from the different regions of Karachi:

S No.	Public schools	Private schools
1	Ishaat-ul-Islam GBSS Sec 2, North Karachi	Al-Emaan Public School, Surjaani Town, Karachi
2	GBSS, Sec 5/E, New Karachi	Khursheed Academy, Sector 2, North Karachi
3	GBSS, Sec 11/G, Godhra, New Karachi	Barkat Children Academy, Taiser Town, Karachi
4	GBSS, Malala Yusuf Zai, Karachi	Good Luck Public Academy, Taiser Town, Karachi

5 Government Boys Secondary National Grammar School, Sector 11/G,
 School, Town Committee, New Karachi
 Sector 5/G, New Karachi

Figure 1: Ishaat-ul-Islam Government Boys Secondary School, Sector 2, North Karachi.

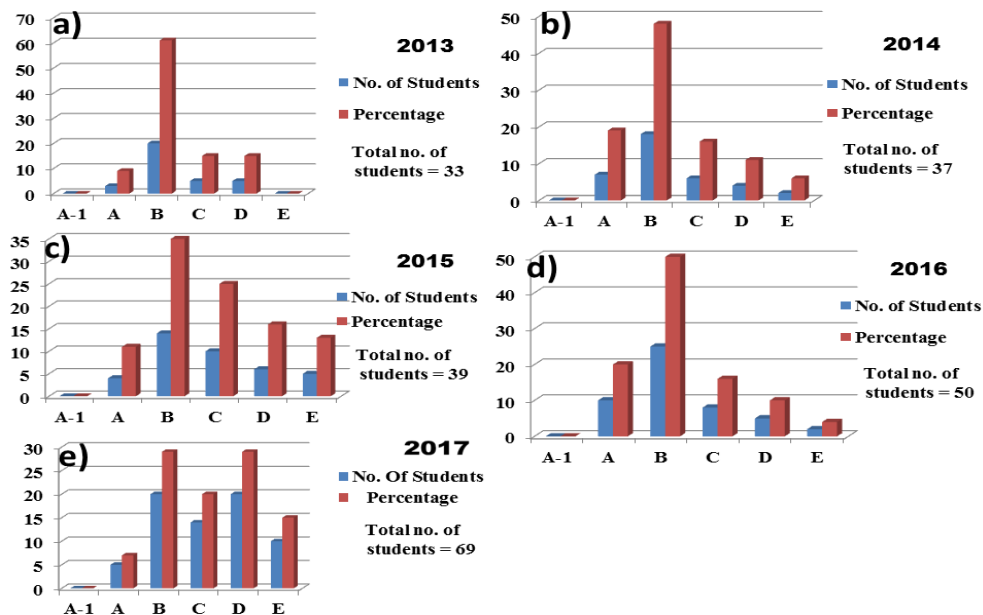


Figure 1 shows the performance of Ishaat-ul-Islam Government Boys Secondary School, Sector 2, North Karachi for five years from 2013 to 2017. It is seen that no student could get A-1 grade throughout the whole period of the previous five years in this school. 13.2% of students got A grade as an average for five years, only 9% of students got A grade in 2013, it increased with 19% in 2014 then decreased with 11% in 2015 then again increased with 20% in 2016 and finally decreased with 7% in 2017. 44.6% students passed with B grade as an average since 2013 to 2017, 61% students passed in 2013 with a B grade, it gradually decreased with 48% and 35% in 2014 and 2015, the percentage increased with 50% in 2016 and then finally decreased with 29% in 2017. 18.4% of students got C grade as an average during five years, 15% and 16% of students passed with C grade respectively in 2013 and 2014, it increased with 25% in 2015 then decreased with 16% in 2016 and finally, it increased with 20% in 2017. 16.2% of students passed in D grade as an average during 2013 and 2017, 15% and 11% students got D grade in 2013 and 2014 respectively, it increased with 16% in 2015 then decreased with 10% in 2016 and it finally it increased with 29% in 2017.

7.6% of students could get E grade as an average from 2013 to 2017, no student passed with E grade in 2013, 6% of students passed in 2014, it increased with 13% in 2015 then decreased with 4% in 2016 and finally increased with 15% in 2017. The overall performance of this school had been unsatisfactory throughout the whole research period.

Figure 2: Government Boys Secondary School, Sector 5/E, New Karachi.

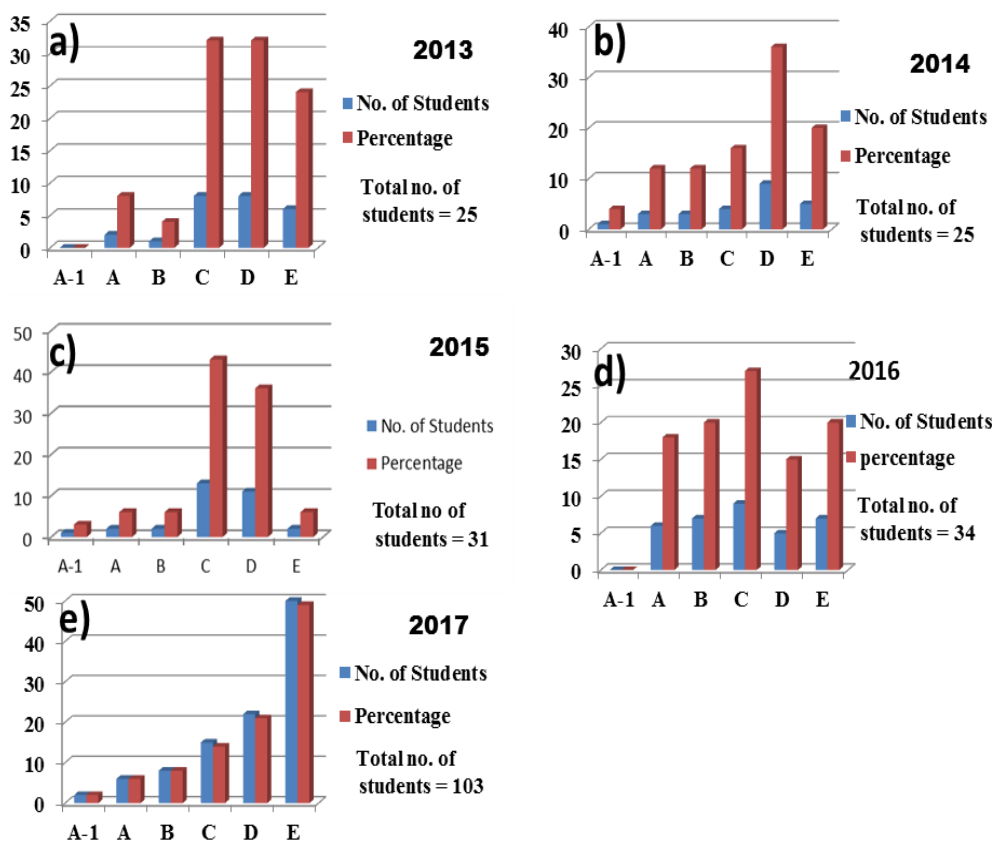


Figure 2 indicates the results of GBSS, Sec 5/E, New Karachi. It is observed that only 1.8% of students could be passed in A-1 grade as an average throughout the whole period since 2013 and 2017. No student could get an A-1 grade in 2013 and 2016, 4% and 3% of students got an A-1 grade in 2014 and 2015 respectively, only 2% students passed in A-1 grade in 2017 in this school. 10% of students got A grade as an average for five years, only 8% and 12 students got A grade in 2013 and 2014, only 6% of students passed with A grade in 2015, it increased with 18% in 2016 and finally

decreased with 6% in 2017. 12% students passed with B grade as an average since 2013 to 2017, only 4% students passed in 2013 with a B grade, it increased with 12% in 2014 then decreased with 6% in 2015, the percentage increased with 20% in 2016 and finally decreased with 8% in 2017. 26.4% of students got C grade as an average during five years, 32% of students passed with C grade in 2013, it decreased with 16% in 2014 then increased with 43% in 2015 and it finally decreased with 27% and 14% students in 2016 and 2017 respectively. 28% students passed in D grade as an average during 2013 and 2017, 32% students got D grade in 2013, 36% students passed with a D grade in both years 2014 and 2015, it then decreased with 15% in 2016 and finally, it increased with 21% in 2017 in this school. 23.8% students could get E grade as an average since 2013 to 2017, 24% students passed with E grade in 2013, 20% students passed in 2014, it decreased with 6% in 2015 then increased with 20% in 2016 and finally increment prevailed with 49% in 2017. When we concluded the whole performance of this government school then we came to know that passing ratio in A-1 grade is very low, it is also low in A and B grades but this ratio is higher in C, D and E grades during the research period. So we can say that the performance of this school is a little bit satisfactory as compared to other government schools.

Figure 3: Government Boys Secondary School, Sector 11/G, Godhra, New Karachi.

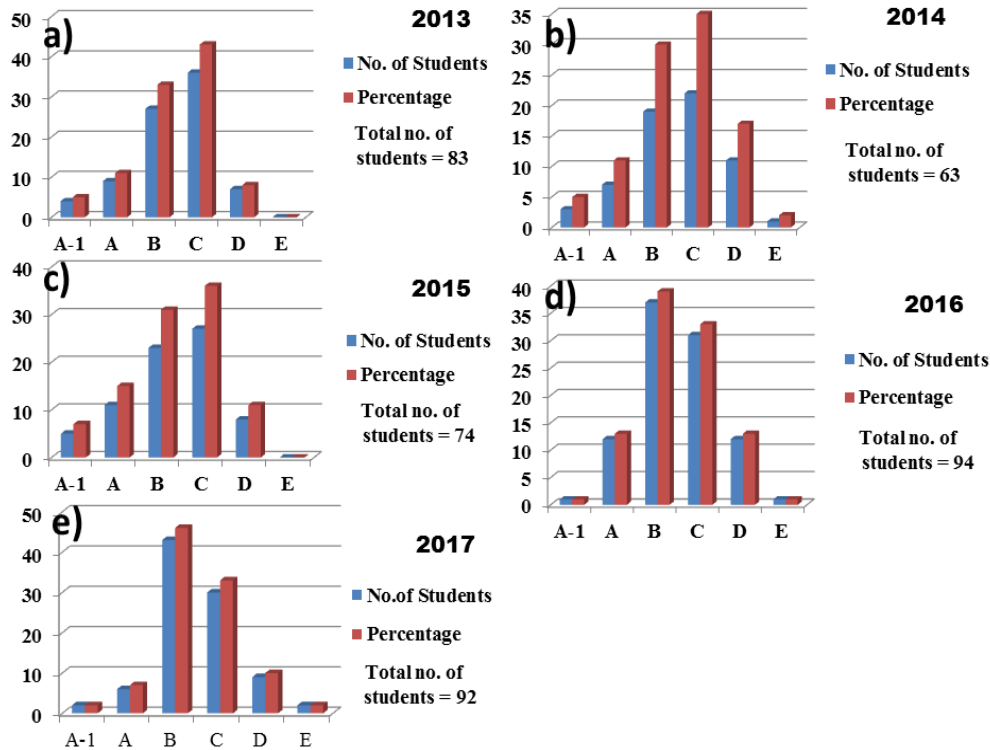


Figure 3 points out the achievement of GBSS, Sec 11/G, Godhra, New Karachi. It is seen that only 4% of students could get an A-1 grade as an average throughout the whole period of the previous five years in this school. Only 5% of students got an A-1 grade in 2013 and 2014, with a bit of increment 7% of students passed with an A-1 grade, it decreased with 1% students in 2016 and 2% students in 2017. 11.4 students passed during the previous five years as an average in this school, 11% of students got A grade in 2013 and 2014 respectively, it increased with 15% in 2015 then decreased with 13% in 2016 and it again decreased with 7% in 2017. 35.8% students passed with B grade as an average since 2013 to 2017, 33% students passed in 2013 with a B grade, it gradually decreased with 30% and 31% in 2014 and 2015, it increased with 39% in 2016 and then finally increased with 46% in 2017. 36% of students got C grade as an average during five years, 43% of students got in C grade in 2013, 35% and 36% of students passed with C grade respectively in 2014 and 2015 and it finally decreased with 33% in 2016 and 2017 respectively. 11.8% students passed in D grade as an average during 2013 and 2017, 8% students got D grade in 2013, it increased with 17% students in 2014, it decreased with 11% in 2015 then increased with 13% in 2016 and it finally it decreased with 10% in 2017. Only 1% of students got E grade as an average from 2013 to 2017, no student passed with E grade in 2013 and 2015, 2% of students passed in 2014 and 2017 and finally, 1% of students got E grade in 2017. The overall performance of this school had not been satisfactory during the whole research period.

Figure 4: Government Girls Secondary School, MalalaYusuf Zai, Karachi.

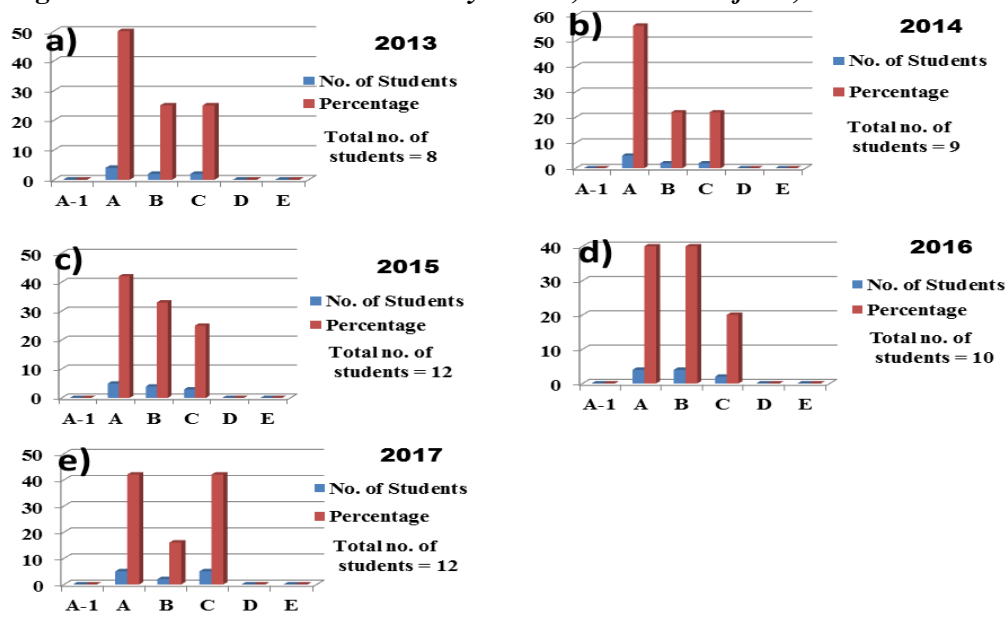


Figure 4 expresses the results of Government Girls Secondary School, Malala Yusuf Zai, Karachi. It is observed that no student could get A-1 grade throughout the whole period since 2013 and 2017. 46% students passed in A grades in five years, 50% and 56% students obtained A grades in 2013 and 2014, it decreased with 42% in 2015, and it decreased with 42% in 2016 and finally increased with 42% in 2017. 27.2% of students passed with B grade as an average since 2013 to 2017, 25% students passed in 2013 with a B grade, it decreased with 22% in 2014 then increased gradually with 33% and 40 in 2015 and 2016 and finally percentage decreased with 16% in 2017. 26.8% of students got C grade as an average during five years, 25% of students passed with C grade in 2013 and 2015, 22% students passed with C grade in 2014, 20% students got C grade in 2016 and Finally, it increased with 42% in 2017. No student passed in D and E grades from 2013 to 2017 in this school. The whole performance of this private school had been unsatisfactory instead of the average passing ratio in A grade. But no student was passed in A-1 grade which is not a good mark of performance.

Figure 5: Government Boys Secondary School, Town Committee, Sector 5/G, New Karachi.

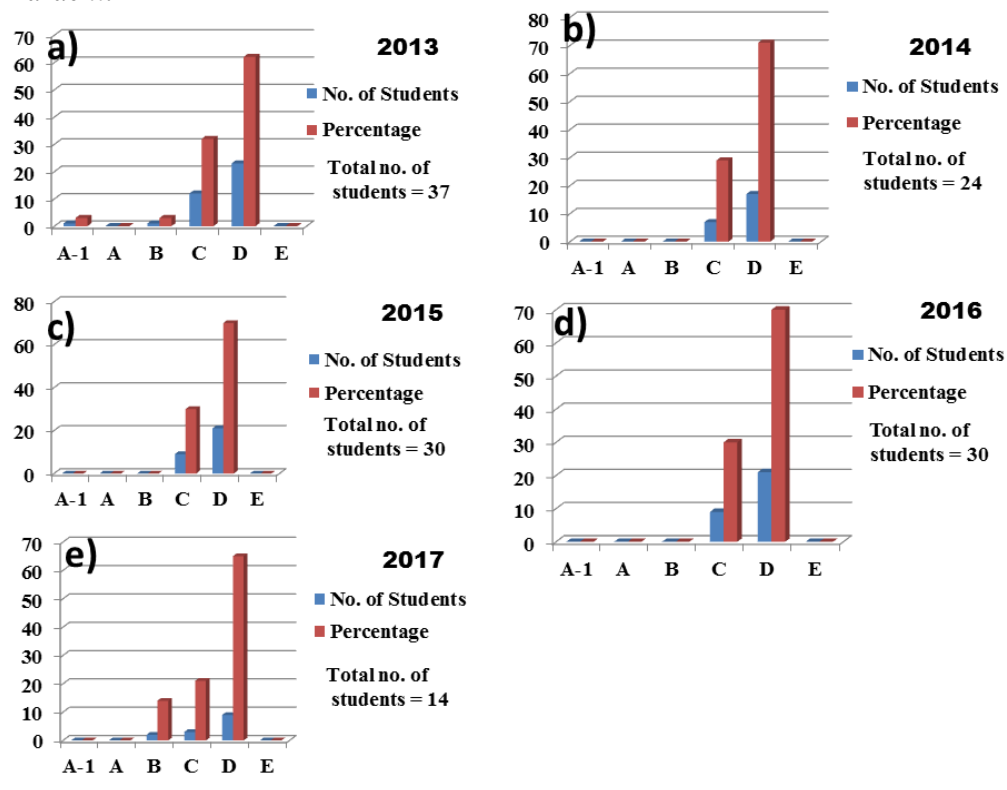


Figure 5 shows the achievements of GBSS, Town Committee, Sec 5/G, New Karachi. It is observed that only 0.6% of students could be passed in A-1 grade as an average throughout the whole period since 2013 and 2017. 3% of students passed in A-1 grade in 2013 and no student could get an A-1 grade from 2014 to 2017 in this school. No student could be passed with A grade during the whole period of our research in this government school. Only 3.4% of students got B grade as an average during the previous five years, 3% of students got A grade in 2013, no student passed in B grade during 2014 and 2017 and 14% of students passed with a B grade in 2017. 28.4% of students got C grade as an average during the research period, 32% students passed with C grade in 2013, it decreased with 29% in 2014, 30% students got C grade in both years 2015 and 2016 and finally, it decreased with 21% in 2017. 67.6% students passed in D grade as an average during 2013 and 2017, 62% students got D grade in 2013, it increased with 71% in 2014, 70% students passed with a D grade in both years 2015 and 2016 and finally it decreased with 65% in 2017. No student passed with E grade from 2013 to 2017. In concluding we can say that the whole performance of this government school had been the worst because passing ratio in A-1 grade was the lowest and no student got A grade in this government school.

Figure 6: Al-Emaan Public School, Surjaani Town, Karachi.

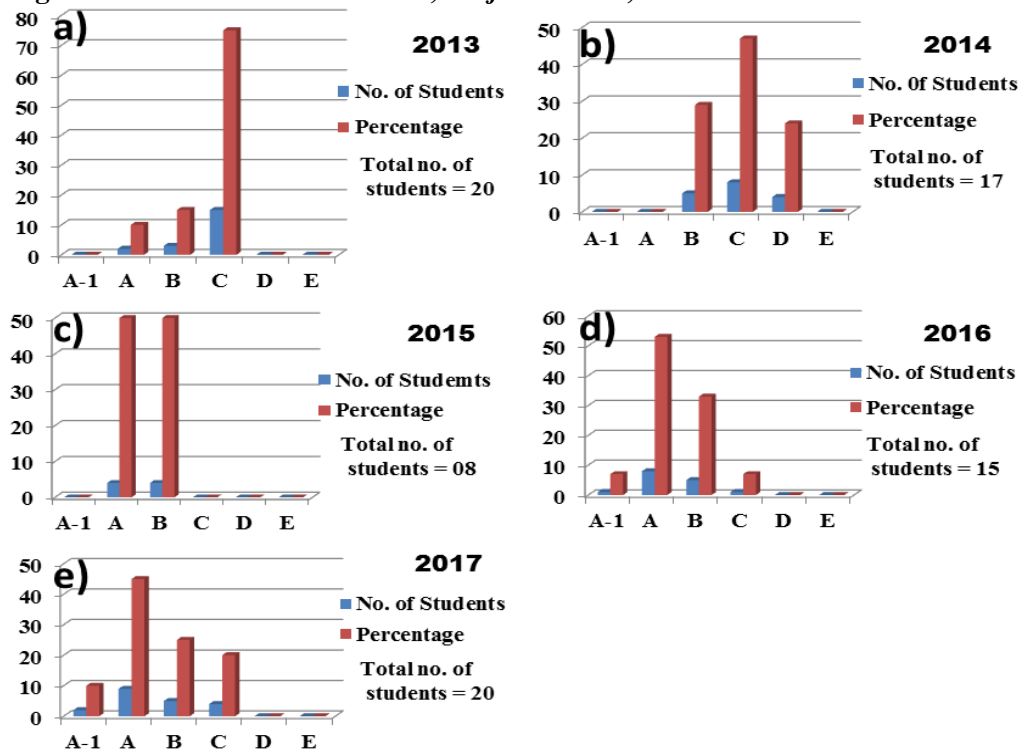


Figure 6 expresses the performance of Al-Emaan Public School, Surjaani Town, Karachi. It is seen that 3.4% of students could get an A-1 grade as an average throughout the whole period of the previous five years in this school. No student could get an A-1 grade in 2013, 2014 and 2015, 7% and 10% of students passed in A-1 grade in 2016 and 2017. 31.6% of students got A grade as an average for five years, only 10% of students got A grade in 2013, no student passed in A grade in 2014, 50% in 2015, it increased with 53% in 2016 and finally decreased with 45% in 2017. 30.4% of students passed with B grade as an average since 2013 to 2017, 15% students passed in 2013 with a B grade, it gradually increased with 29% and 50% in 2014 and 2015, the percentage decreased with 33% in 2016 and 25% respectively in 2017. 29.8% students got C grade as an average during five years, 75% and 47% students passed with C grade respectively in 2013 and 2014, no student passed with C grade in 2015, and 7% students got C grade in 2016 and finally, it increased with 20% in 2017. 4.8% of students passed in D grade as an average during 2013 and 2017, no student got D grade in 2013, 24% of students passed with a D grade in 2014 and no student got D grade in 2015, 2016 and 2017. No student got E grade from 2013 to 2017 in this school. The overall performance of this private school is a bit satisfactory instead of no A-1 grade during 2013 and 2015.

Figure 7: Khursheed Academy, Sector 2, North Karachi.

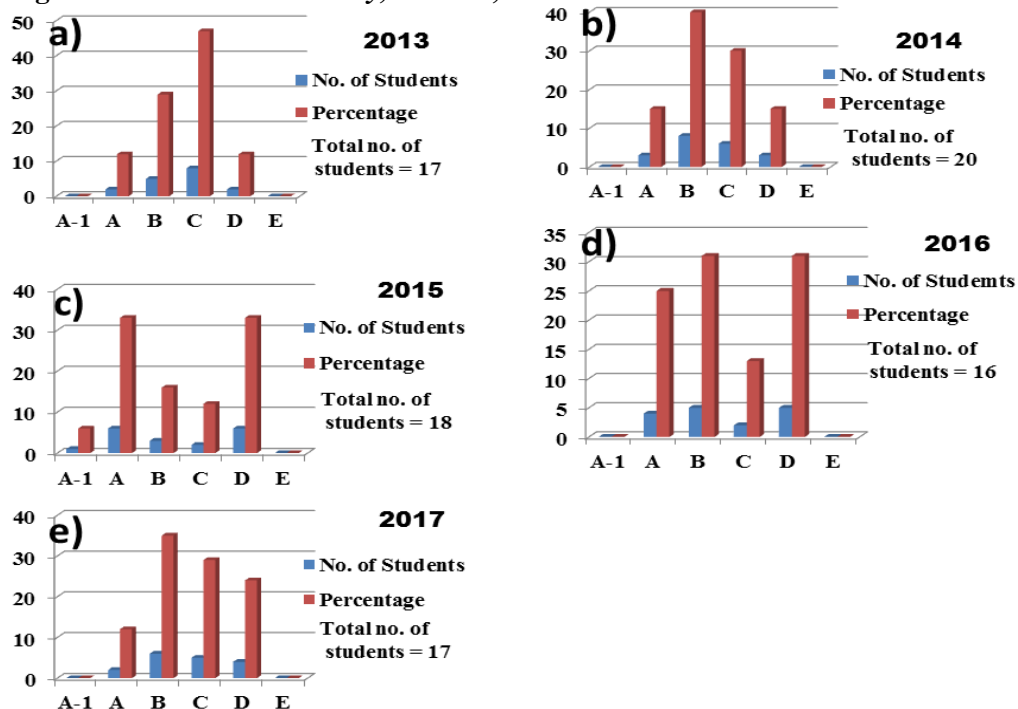


Figure 7 indicates the results of Khursheed Academy, Sector 2, North Karachi. It is observed that only 1.2% of students could be passed in A-1 grade as an average throughout the whole period since 2013 and 2017. No student could get an A-1 grade in 2013, 2014, 2016 and 2017, 6% students obtained A-1 grades in 2015 in this school. 19.4% candidates passed in A grades in five years, only 12% and 15% of students got A grade in 2013 and 2014, it increased with 33% in 2015, it decreased with 25% in 2016 and finally decreased with 12% in 2017. 30.2% students passed with B grade as an average since 2013 to 2017, 29% students passed in 2013 with a B grade, it increased with 40% in 2014 then decreased with 16% in 2015, the percentage increased with 31% in 2016 and finally it increased with 35% in 2017. 26.2% students got C grade as an average during five years, 47% students passed with C grade in 2013, it decreased with 30% in 2014 then again decreased with 12% in 2015, it increased with 13% in 2016 and finally it increased with 29% in 2017. 23% students passed in D grade as an average during 2013 and 2017, only 12% students got D grade in 2013, 15% students passed with D grade 2014, it increased with 33% in 2015, it then decreased with 31% and 24% in 2016 and 2017 respectively. No student passed in E grade from 2013 to 2017 in this school. The whole performance of this private school had been satisfactory instead of a low passing ratio in A-1 grade. But no student was passed in E grade.

Figure 8: Barkat Children Academy, Taiser Town, Karachi.

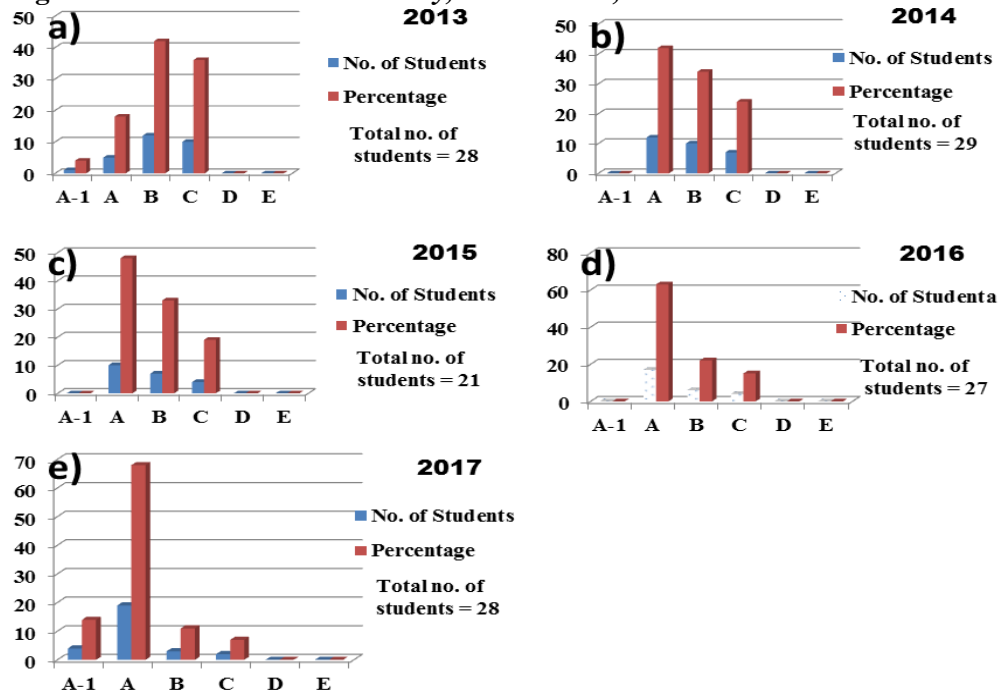


Figure 8 shows the achievements of Barkat Children Academy, Taiser Town, Karachi. We can observe that only 3.6% of students could get an A-1 grade as an average throughout the whole period since 2013 and 2017, 4% of students got A grade in 2013, no student could get A-1 grade during 2014 and 2016 and finally 14% in 2017. 47.8% of students passed with A grade as an average in the previous five years, 18% of students got A grade in 2013, and it got a gradual increase with 42%, 48%, 63% and 68% in 2014, 2015, 2016 and 2017 respectively. 28.4% of students got B grade as an average during the previous five years, 42 % of students got B grade in 2013, it decreased with 34% and 33% in 2014 and 2015 respectively and this decreasing trend also prevailed as 22% and 11% in 2016 and 2017. 20.2% students got C grade as an average during previous five years, 36% students passed with C grade in 2013, it decreased with 24% in 2014, the decreasing trend continued throughout the whole period as 19%, 15% and 7% students got C grade in 2015, 2016 and 2017. No student passed in D and E grades from 2013 to 2017 in this school. The whole performance of this private school had been satisfactory instead of the average passing ratio in A-1 grade. But no student passed in D and E grades during our research period.

Figure 9: Good Luck Public Academy, Taiser Town, Karachi.

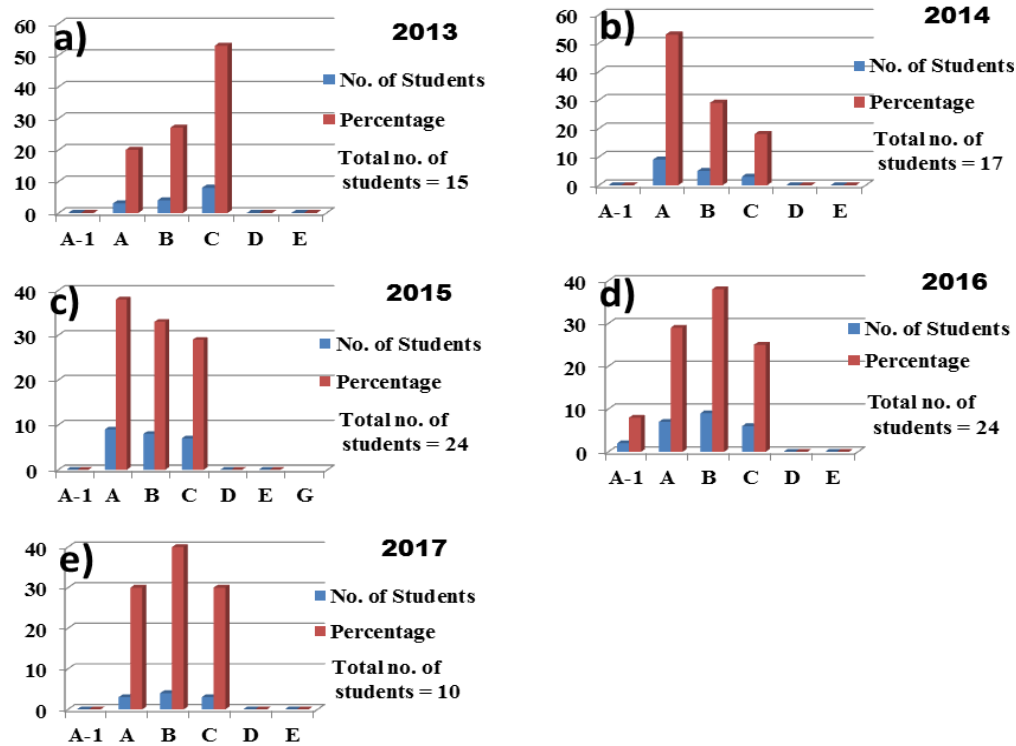


Figure 9 explains the performance of Good Luck Public Academy, Taiser Town, Karachi. It is seen that only 1.6% of students could get an A-1 grade as an average during the previous five years, no student could get A-1 grade during 2013 and 2015, only 8% of students got an A-1 grade in 2016 and no student passed in A-1 grade in 2017. 34% of students got A grade as an average for five years, 20% of students got A grade in 2013, it increased with 53% in 2014 then decreased with 38% in 2015 then again decreased with 29% in 2016 and finally increased with 30% in 2017. 33.4% of students passed with B grade since as an average 2013 to 2017, 27% of students passed in 2013 with a B grade, it got a gradually increasing trend with 29% in 2014, 33% in 2015, 38% in 2016 and 40% in 2017. 31% students got C grade as an average during since 2013 to 2017, 53% students passed with C grade in 2013, it decreased with 18% in 2014 then increased with 29% in 2015, 25% students passed with C grade in 2016 and it finally increased with 30% in 2017. No student got D and E grades during 2013 and 2017 in this school. The overall performance of this school had been satisfactory throughout the whole research period instead of the low passing ratio in A-1 grade.

Figure 10: National Grammar School, Sector 11/G, New Karachi.

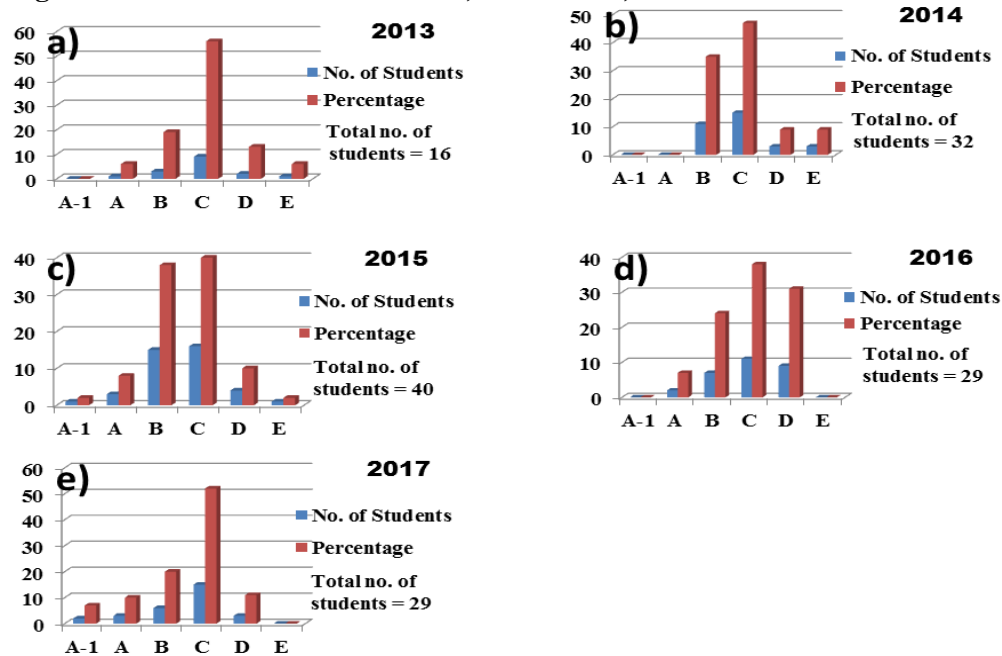


Figure 10 indicates the results of National Grammar School, Sector 11/G, New Karachi, It is observed that only 1.8% of students could be passed in A-1 grade as an average throughout the whole period since 2013 and 2017. No student could get an A-

1 grade in 2013, 2014 and 2016 and only 7% of students got an A-1 grade in 2017 in this school. 6.2% candidates passed in A grades in five years, only 6% students got A grade in 2013, no student could get A grade in 2014, 8% and 7% students passed with A grade in 2015 and 2016, it increased with 10% in 2017. 26.6% of students passed with B grade as an average from 2013 to 2017, 16% of students passed in 2013 with a B grade, it increased continuously with 35% and 38 in 2014 and 2015 then decreased with 24% and 20% in 2016 and 2017 respectively. 46.6% students got C grade as an average during previous five years, 56% students passed with C grade in 2013, it decreased with 47% in 2014 then again decreased with 40% and 38% in 2015 and 2016 respectively and it finally increased with 52% students in 2017. 14.8% students passed in D grade as an average during 2013 and 2017, 13% students got D grade in 2013, only 9% and 10% students passed with D grade in 2014 and 2015 respectively, it increased with 31% in 2016 and finally it decreased with 11% in 2017 in this school. 3.4% of students got E grade as an average from 2013 to 2017, only 6% of students passed with E grade in 2013, 9% of students passed in 2014, it decreased with 2% in 2015 and no students passed with E grade in 2017. On concluding the whole performance of this private school for the previous five years then we came to know that passing ratio in A-1 grade is very low, it is also low in A, D and E grades but this ratio is higher in B and C grades during our research period. The performance of this school is satisfactory as compared to public schools.

Figure 11: Progress of all Government Schools since 2013 to 2017

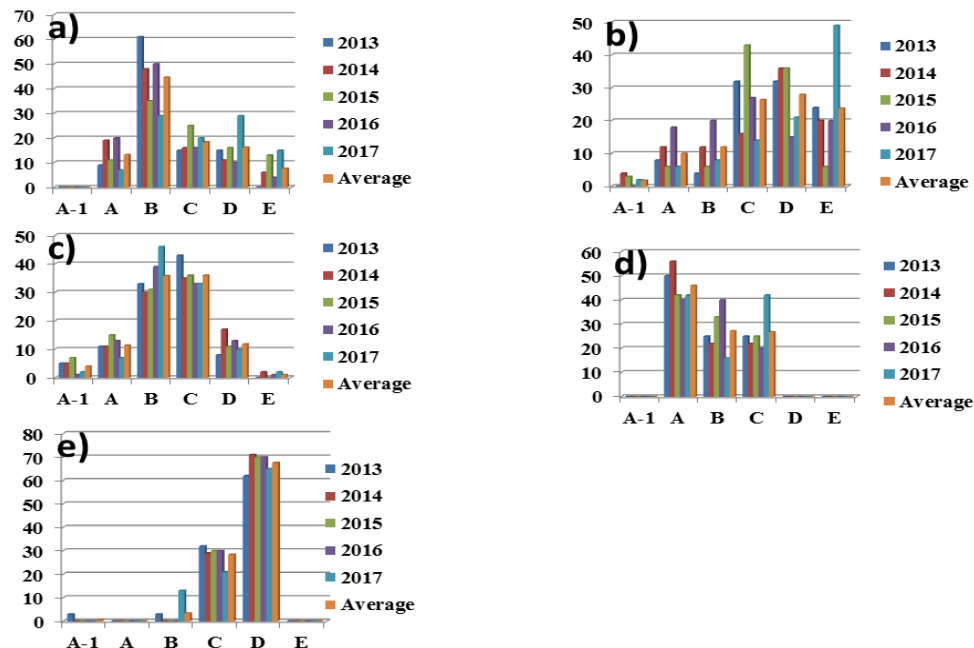


Figure 11 (a-e) shows the performances of five different public schools for previous five years, and discussed them separately as grade-wise (Grades A-1, A, B, C, D and E) along with averages of Ishaat-ul-Islam GBSS Sec 2, North Karachi, GBSS, Sec 5/E, New Karachi, GBSS, Sec 11/G, Godhra, New Karachi, GGSS, Malala Yusuf Zai, Karachi and GBSS, Town Committee Sec 5/G, New Karachi respectively.

Figure 12: Progress of all Private Schools since 2013 to 2017

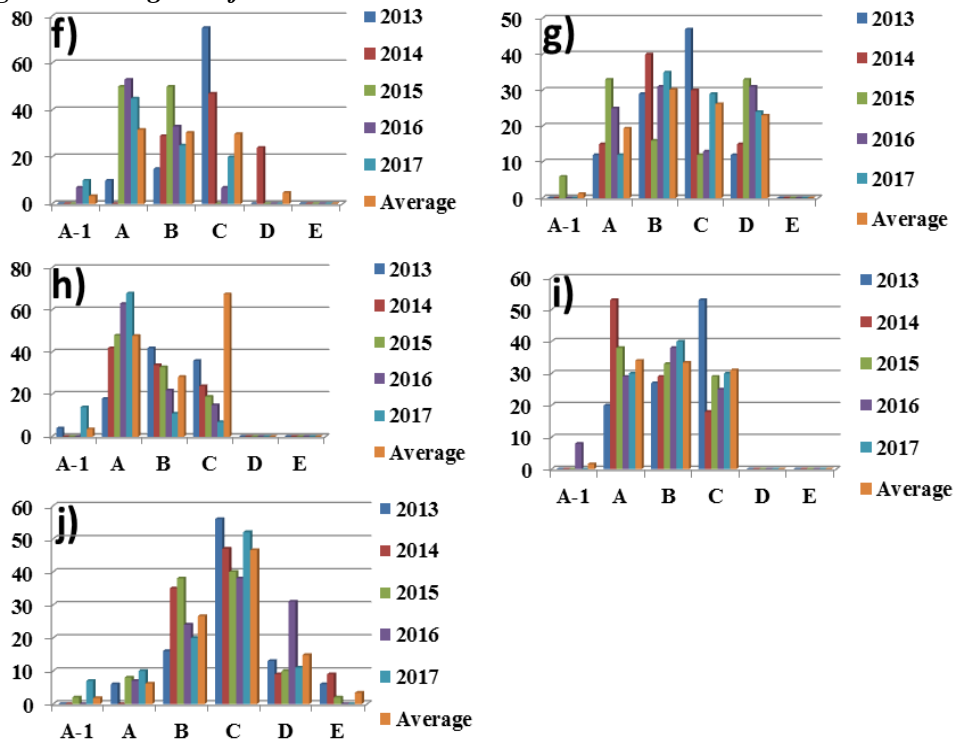


Figure 12 (a-e) explains the performances of five different private schools for previous five years, and discussed them separately as grade-wise (Grades A-1, A, B, C, D and E) along with averages of Al-Emaan Public School, Surjaani Town, Karachi, Khursheed Academy, Sector 2, North Karachi, Barkat Children Academy, Taiser Town, Karachi, Good Luck Public Academy, Taiser Town, Karachi and National Grammar School, Sector 11/G, New Karachi respectively.

Figure 13 indicates the comparative relation between public and private schools for A-1 grade. For all public schools as $y = -0.06x + 1.46$ and $R^2 = 0.0032$ (2)
 And for all private schools as

$$y = -0.28x + 3.16 \quad \text{and} \quad R^2 = 0.1617 \quad (3)$$

The details for A-1 grades for all public and private schools are shown in Figure 4.13 (a, b) with a regression line. Statistical Mean has been taken on the vertical axis in the range of five different schools and the number of schools has been taken on the horizontal axis. The regression line is showing a negative trend because of poor performance.

Figure 13: Comparative relations between Government and Private Schools for A-1 Grade

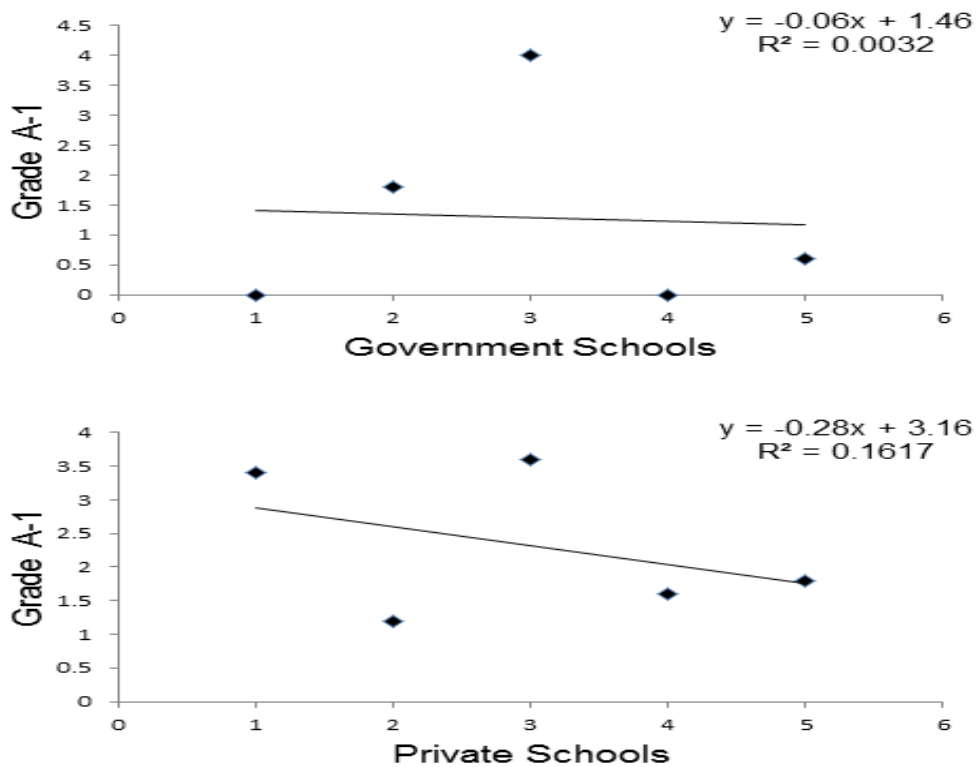


Figure 14 expresses the comparative relation between public and private schools for A grade. For all public schools as

$$y = 0.96x + 13.24 \quad \text{and} \quad R^2 = 0.0075 \quad (4)$$

And for all private schools as

$$y = -3.62x + 38.66 \quad \text{and} \quad R^2 = 0.1324 \quad (5)$$

The details for A grades for all public and private schools are shown in Figure 14 (a,

b) with a regression line. Statistical Mean has been taken on the vertical axis in the range of five different schools and the number of schools has been taken on the horizontal axis. The regression line is showing a positive trend for public schools and a negative trend for private schools because of unsatisfactory performances.

Figure 14: Comparative relations between Government and Private Schools for A Grade

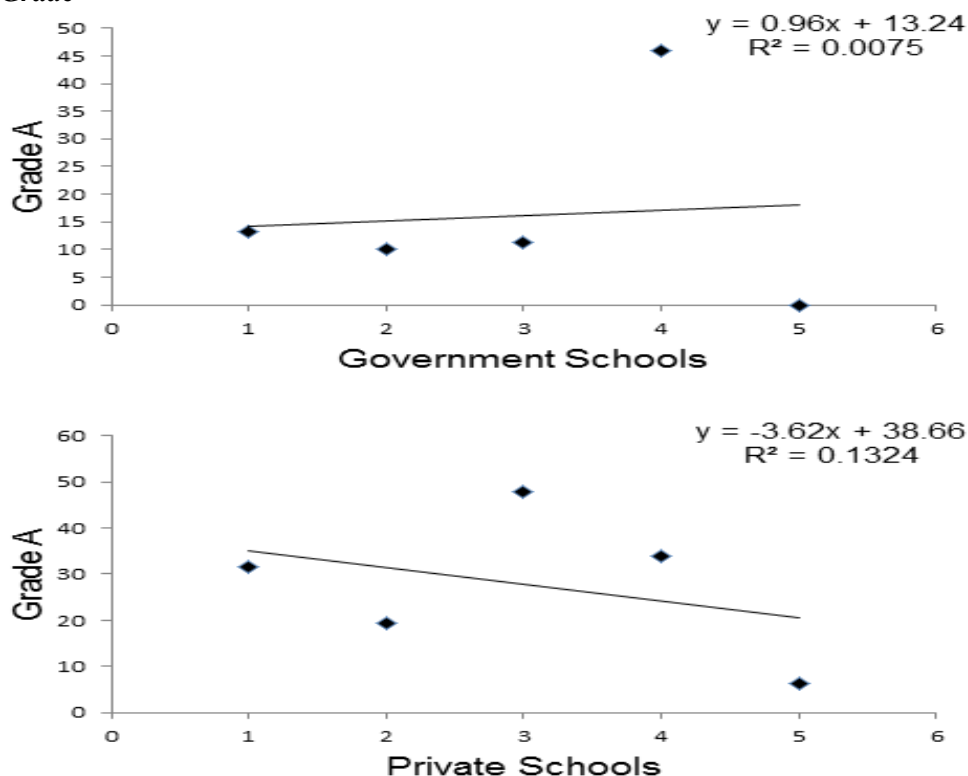


Figure 15 shows the comparative relation between public and private schools for B grade. For all public schools as $y = - 6.72 x + 44.76$ and $R^2 = 0.396$ (6)
 And for all private schools as $y = - 0.44 x + 31.12$ and $R^2 = 0.0754$ (7)

The details for B grades for all public and private schools are shown in Figure 15 (a, b) with a regression line. Statistical Mean has been taken on the vertical axis in the range of five different schools and the number of schools has been taken on the horizontal axis. The regression line is showing a negative trend because of poor

performance. But the performances of private schools are better than public schools.

Figure 15: Comparative relations between Government and Private Schools for B Grade

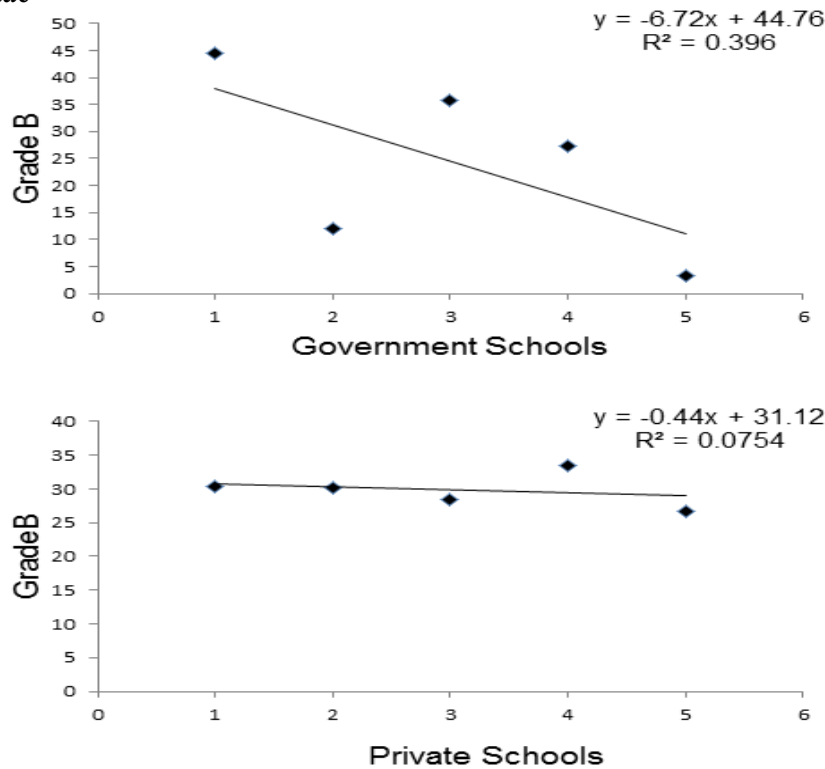


Figure 16 shows the comparative relation between public and private schools for C grade. For all public schools as

$$y = 2.04 x + 21.08 \quad \text{and} \quad R^2 = 0.2649 \quad (8)$$

And for all private schools as

$$y = 3.84 x + 19.24 \quad \text{and} \quad R^2 = 0.3838 \quad (9)$$

The details for C grades for all public and private schools are shown in Figure 16 (a, b) with a regression line. Statistical Mean has been taken on the vertical axis in the range of five different schools and the number of schools has been taken on the horizontal axis. The regression line is showing a positive trend because of poor performance. However, performances of public schools are not higher than of private schools' performances.

Figure 16: Comparative relations between Govt. and Private Schools for C Grade

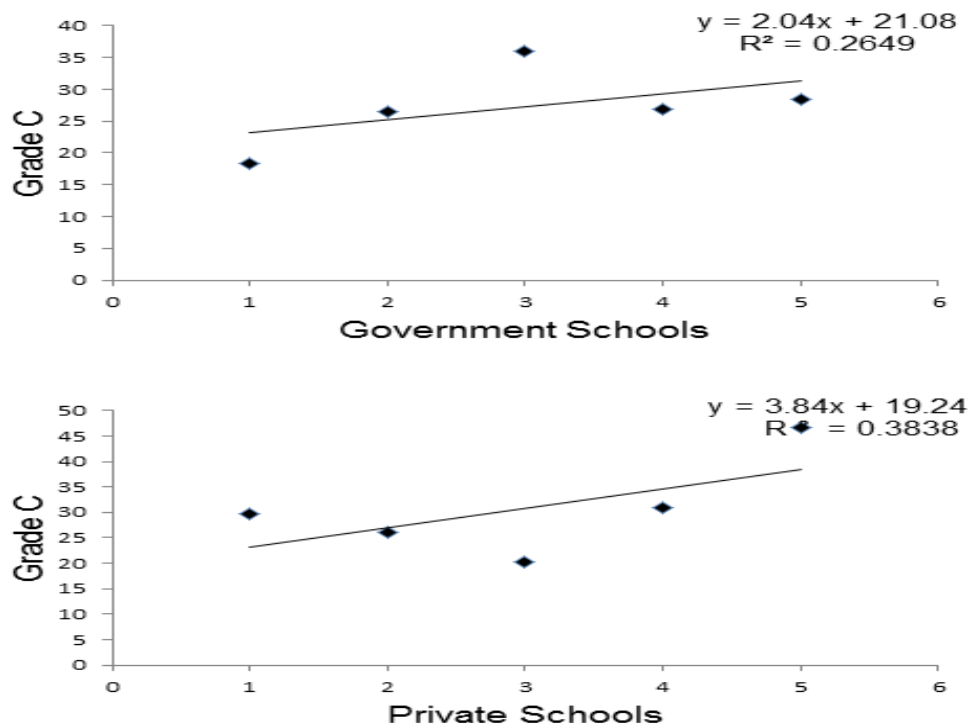


Figure 17 explains the comparative relation between public and private schools for the D grade. For all public schools as

$$y = 7.48 x + 2.28 \quad \text{and} \quad R^2 = 0.2072 \quad (10)$$

And for all private schools

$$y = - 0.3 x + 9.42 \quad \text{and} \quad R^2 = 0.0022 \quad (11)$$

The details for B grades for all public and private schools are shown in Figure 17 (a, b) with a regression line. Statistical Mean has been taken on the vertical axis in the range of five different schools and the number of schools has been taken on the horizontal axis.

The regression line is showing a negative trend because of poor performance. But performances of private schools are better than in public schools.

Figure 17: Comparative relations between Government and Private Schools for D Grade

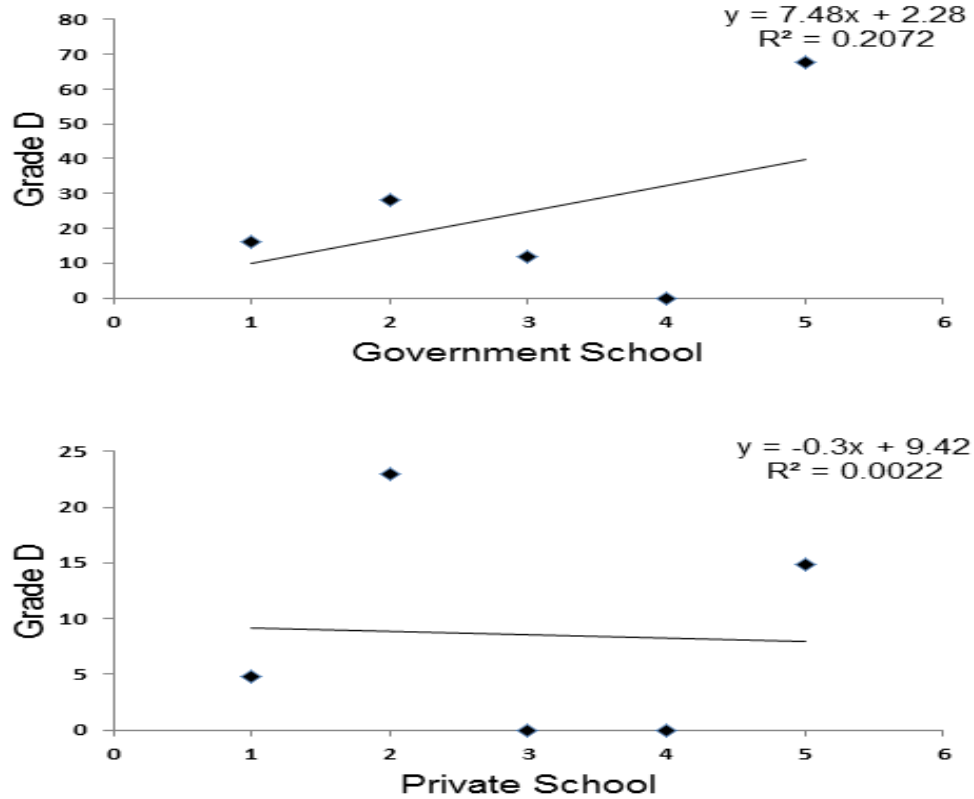


Figure 18 indicates the comparative relation between public and private schools for E grade. For all public schools as

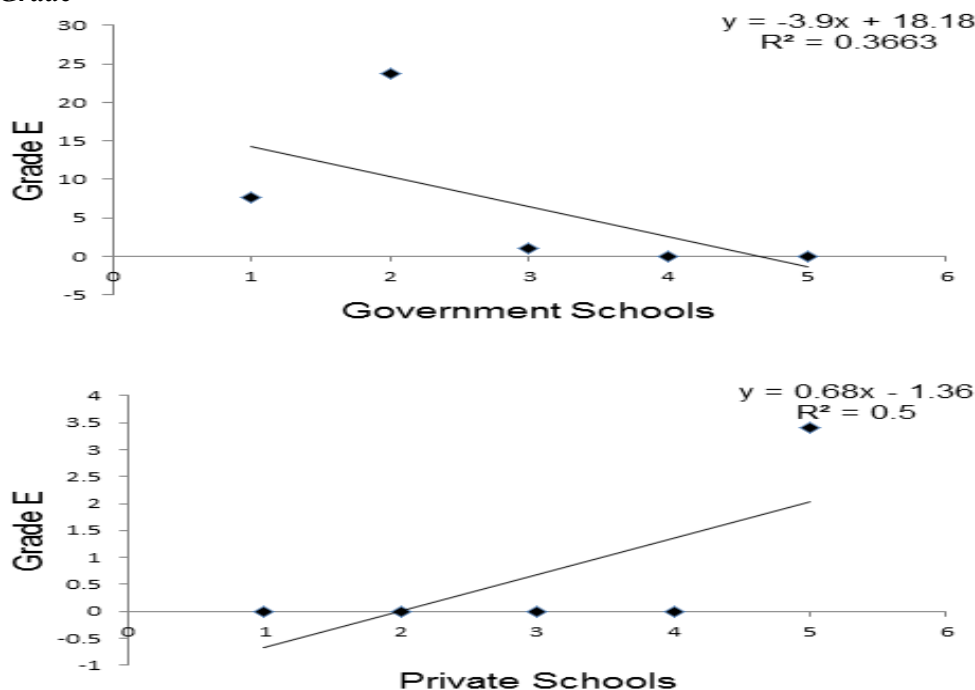
$$y = - 3.9 x + 18.18 \quad \text{and} \quad R^2 = 0.3663 \quad (12)$$

And for all private schools as

$$y = 0.686 x + 1.36 \quad \text{and} \quad R^2 = 0.5 \quad (13)$$

The details for B grades for all public and private schools are shown in Figure 18 (a, b) with a regression line. Statistical Mean has been taken on the vertical axis in the range of five different schools and the number of schools has been taken on the horizontal axis. The regression line is showing a negative trend for public schools and a positive trend for private schools because of ignorance of government. But the performances of private schools are higher than public schools due to competent management.

Figure 18: *Comparative relations between Government and Private Schools for E Grade*



DISCUSSION

The most crucial factor improve the personality of individuals is education. The education system of Sindh has not been able to play its role effectively in nation-building. Two major kinds of institutions of Karachi are public and private schooling systems: Nowadays, the majority of students in Karachi prefer to take admissions in private schools due to their systematic academic curriculum, better education system, knowledge creation, and recreational activities. However, they are more expensive. Teachers' appointments should be done via the merit system by National Testing System (NTS) or another third reliable party should be mandatory and proper training of those teachers should be conducted after certain periods. The gradual visits of concern education officers can play a very important role in this regard to enhance the education system in public schools of Karachi. The parent's and teachers' meetings should be compulsory in public schools twice a month to improve the results. Students can be benefitted from the help of extracurricular activities in which outdoor sports and physical fitness training are included as well as awareness of "Health is Wealth" can play a vital role in students' learning process and enhancement of their results to compete with the students of private schools. Public schools should be fully equipped with necessities and requirements in the best interest of students. The main objective

of this research is to find out the main causes of worse results of public schools in Secondary School Certificate (SSC) examinations and their solutions. Public schools have not performed well during the previous five years of this research period in SSC Examinations. Implementation of suggested measures can improve the performance and achievements of public schools.

RECOMMENDATIONS

1. Appointments of teachers should be done via the merit system by National Testing System (NTS) or another third reliable party.
2. The gradual visits of concern education officers can play a very important role in this regard to enhance the education system in government schools of Karachi.
3. The parent's and teachers' meetings should be compulsory in government schools twice a month for betterment of students' future.

REFERENCES

- Ahmed, G., Munshi, P., Jumani, N. B. (2015). Impact of In-Service Teacher Training At Elementary Level In Sindh Province. *The Sindh University Journal of Education*, 44(2), 149-164.
- Ahmad, I., Rehman, K., Ali, A., Khan, I., Khan, F. A. (2014). Critical Analysis of the Problems of Education in Pakistan: Possible Solutions. *International Journal of Evaluation and Research in Education (IJERE)*, 3(2), 79-84.
- Amjad, R., McLeod, G. (2014). Academic Effectiveness of Private, Public and Private-Public Partnership Schools in Pakistan. *Idara-e-Taleem-o-Aagahi, Lahore. International Journal of Educational Development*, 37, 22-31.
- Aslam, H. D. (2013). Analysis of professional development practices for school teachers in Pakistan: A comparative case study of public and private schools of Pakistan (Punjab). *International Journal of Human Resource Studies*, 3(4), 311-326.
- Aslam, Monazza, Geeta. (2011). What Can Teachers Do to Raise Pupil Achievement? *Economics of Education Review*, 30(3), 559-574.
- Arseven, A. (2015). Mathematical Modelling Approach in Mathematics Education. *Universal Journal of Educational Research*, 3(12), 973-980.
- Awan, Ghafoor, A., Zia, Asma. (2015). Comparative Analysis of Public and Private Educational Institutions: A Case Study of District Vehari-Pakistan. *Journal of Education and Practice*, 6(16), 122-130.
- Bedi, Arjun, S., Garg, Ashish. (2000). The Effectiveness Of Private Versus Public Schools: The Case of Indonesia. *Journal of Development Economics*, 61(2), 463-494.
- Behlol, M. G., Anwar, M. (2011). Comparative Analyses of the Teaching Methods and Evaluation Practices in English Subject at Secondary School Certificate (SSC) and General Certificate of Education (GCE O-Level) in Pakistan. *International Education Studies*, 4(1).
- Card, D., Krueger, A. B. (1992). Does school quality matter? Return to Education and the Characteristics of Public Schools in the United States. *Journal of Political Economy*,

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- 100(1), 1-40.
- Coleman, J., Hoffer, T., Kilgore, S. (1982). Cognitive outcomes in public and private schools. *Sociology of Education*, 55(2-3), 65-76.
- Emmanuel, J., Lockheed M., Wattanawaha N. (1988). The relative efficiency of private and public schools: The case of Thailand. *World Bank Economic Review*, 2(2), 139-164.
- Hanushek, E. A., Rivkin, S. G., Taylor, L. L. (1996). Aggregation and the estimated effects of school resources. *Review of Economics and Statistics*, 78(4), 611-627.
- Hussain, A., Awan, A. G. (2018). Comparison of the Achievements of Public and Private Secondary Schools in District Khanewal-Pakistan. *Global Journal of Management, Social Sciences and Humanities*, 4(3), 574-605.
- Julian, R. B. (1995). Does school quality matter? Evidence from the National Longitudinal Survey of Youth. *The Review of Economics and Statistics*, 77(2), 231-247.
- Memon, M. (2008). Curriculum change in Pakistan: An alternative model of change. *Curriculum and Teaching*, 12(1), 56-65.
- Memon, R. G. (2007). Education in Pakistan: The key issues, problems and the new challenges. *Journal of Management and Social Sciences*, 3(1), 47-55.
- Muhammad, A., Ahmad, K. I., Muhammad A., Muhammad S., Amir R. M. (2013). Quality of Education in Private Educational Institutions in District Faisalabad, Pakistan, *J. Glob. Innov. Agric. Soc. Sci.*, 1(1), 41-44.
- Muhammad, I. (2012). Public versus Private Secondary Schools, A qualitative comparison. *Journal of Research and Reflections in Education*, 6(1), 40-49.
- Paul, G., Hanan, J. (1994). Student achievement and schooling choice in low income countries, evidence from Ghana. *Journal of Human Resources*, 29, 843-864.
- Rashid, S. (2011). Factors Influencing Student Achievement Scores: Public vs. Private Schools. *Forman Journal of Economic Studies*, 7, 99-116.
- Rehman, H., Khan, N. (2011). The flaws in Pakistan's Education System. *Abasyn Journal of Social Sciences*, 4(1), 70-83.
- Shaikh, A. A., Jamshaid Ahmed, J., Ahmad, B. (2014). Role of Teacher Related Factors in Basic Education: A Case of Govt. Secondary Schools in Karachi, Pakistan. *Journal of Management Info*, 4(1), 167-197.
- Yaseen, M., Zaman, S., Rasheed, N. (2017). An Empirical Study on the Role of Parents in Academic Achievement of Children in Private Schools of Karachi. *International Journal of Criminology and Sociology*, 6, 84-92.