

## **An Analysis of Students Academic Performance: A Case Study of Sarhad University, Peshawar, Pakistan**

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### ***Abstract***

*The researcher has tried to investigate the factors affecting academic performance of graduate students in this article. In the study academic performance (student's grades/marks) is taken as a dependent variable and the gender, age, Attendance, schooling, Household Income, residential area, medium of schooling; daily study hours and accommodation as independent variables. 100 students were selected through simple random sampling for data collection and the data was collected through structured questionnaire from the different departments of Sarhad University of Peshawar. For analysis, linear regression analysis, correlation analysis, and descriptive analysis are used. It was extracted from the findings that attendance, Household income and daily study hours significantly contribute to the academic performance of graduate students.*

**Key Words:** Academic performance, attendance, household income, age, daily study hours

### **Introduction**

Students' performance remains at top priority for academicians. Students performance is meant for making a difference locally, regionally, nationally and globally. Educators, trainers, and researchers have long been interested in exploring variables contributing effectively for improving quality of performance of learners. Student's performance is affected by internal and external variables. The researcher after studying several studies on the relevant field of research identified that there are many factors that contribute towards student's academic performance. Such as students' effort, previous schooling is among the important factor that can affect their performance (Siegfried & Fels, 1979). Another analysis showed some other factors affecting student academic performance in 81 an introductory biochemistry course at the University of the West Indies Benjamin, 1994), parents' education, family income

(Devadoss & Foltz, 1996), self motivation, age of student, learning preferences (Aripin, Mahmood, Rohaizad, Yeop, & Anuar, 2008), class attendance (Romer, 1993), and entry qualifications as the affecting factors.

Researchers conducted detailed studies about these factors contributing to student performance at different study levels. Durden and Ellis (2002) are of the opinion that student's previous educational results are also among the important factors of student's future success. Graetz (1995) suggested "A student educational success is contingent heavily on social status of student's parents/guardians in the society. Minnesota (2007) observed that higher education performance depends upon the academic performance of graduate students. Considine and Zappala (2002) noticed that parent's income or social status positively affects the student test score in examination).

Karshan (2005) concluded that students whose parents are educated score higher on standardized tests than those whose parents were not educated. Fantuzzo and Tighe (2000) claim that educated parents can better communicate with their children regarding the school work, activities and information being taught at school. Educated Parents can better assist their children in their work and participate at school. Tsinidou, Gerogiannis and Fitsilis (2010) claim that "education services are often not tangible and are difficult to measure because they result in the form of transformation of knowledge, life skills and behavior modification of learners".

The relationship between gender and academic achievement of the students has been discussed for decades Elite, (2005). Chambers and Schreiber, (2004) view that a gap between the achievement of boys and girls has been found, with girls showing better performance than boys in certain instances. Mccoy, (2005) is of the view that gender, ethnicity and father occupation are significant contributor to students' achievement. Peng and Hall (1995) had the same view about the students performance. Jeynes (2002) found that "social and economical status of students is generally determined by combining parent's qualification, occupation and income standard".

Although in many cases students who come from sound socio-economic background perform better because they have all the facilities required for better study environment such as stated by Pedrosa et.al (2006) in their study on social and educational background argue that students who come from higher socio-economic status sometimes fail to perform well in their studies due to extra comfort provided to them where as students from poor socio-economic and educational background mostly perform better than those coming from higher socio-economic and educational area.

It was observed that that employment negatively affects students' academic achievement stated that an increase in the amount of hours worked was the most important variable. In a study, more hours worked decreased the probability of being an "A grade" student Pritchard, (1996). According to Furr and Elling (2000), 29% of the students working 30-39 hours per week and 39% of those students working full time

indicated that work had an inverse impact on their academic progress. Whereas high-quality, part-time jobs that seemed to extend career-related skills may contribute to improved levels of “career maturity,” and such type of jobs are assumed to be more flexible and work with students’ schedules (Healy, O’Shea, & Crook, 1985).

While exploring the impact of absenteeism on students performance many researchers (Devadoss & Foltz, 1996; Durden & Ellis, 1995; Romer, 1993; Park & Kerr, 1990; Schmidt, 1983), provide a consensus that students who miss classes perform poorly compared to those who attend classes.

This research let the researcher to make certain assumptions about different factors contributing towards student’s academic performance those are stated below:

- H1 There is an impact of gender on students’ performance.
- H2 There is an impact of the type of school (i.e. Government /Private) on students’ performance.
- H3 There is an impact of the area of residence (i.e. Urban /Rural) on students’ performance.
- H4 There is an impact of mode of instruction in school (i.e. English /Urdu) on students’ performance.
- H5 There is an impact of accommodation facility (i.e. Hostelries/Day Scholar) on students’ performance.
- H6 There is an impact of students’ attendance on the students’ performance.
- H7 There is an impact of financial constraints on the students’ performance.

### **Research Methodology**

The study aimed at identifying student’s performance by considering different factors such as the dependent variable( graduate student academic performance which can be studies by identifying their scores or grades and gender, age, attendance, schooling, father/guardian social economic status, residential area, medium of schooling, study hour and accommodation as an independent variables. Linear regression analysis was used to assess the impact of all these independent variables on the dependent variable. The sample of 100 graduate students was selected for the study purpose from the Sarhad University of Science and Information Technology Peshawar.

Simple random sampling technique was employed in the selection of sample from the targeted population. The questionnaires were distributed to the students personally so that the true responses could be obtained. Close ended questionnaires were used for data collection. Data from Questionnaires was compiled, sorted, edited, classified and coded into the coding sheet of SPSS 20.0 (version).

The researcher has used regression analysis for conducting analysis. Correlation was also applied to check the positive or negative relationship between the significant variables. For testing the hypothesis that the academic performance of graduate students of Sarhad University was tested using built in t-test function in SPSS.

## Discussion and Result

The table 1 is the summaries the fitted or expected linear regression model by the method of least square. We use the SPSS in determining the results. The summary given below explains the academic performance based upon gender, age, attendance, schooling, father/guardian social economic status, financial constraints, part time job and residential area, medium of schooling, tuition, study hour and accommodation as independent variables.

Table 1 *Regression Analysis of Dependent and Independent Variables*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.855 <sup>a</sup>	0.731	0.644	0.65306

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Intercept)	1.414	1.422		0.994	0.327	-1.477	4.304
Average attendance of the student	0.034	0.007	0.54	4.506	0	0.018	0.049
Age of the student	-0.11	0.053	-0.241	-2.08	0.045	-0.217	-0.003
Gender of the student	-0.165	0.395	-0.043	-0.42	0.678	-0.968	0.637
To which area student belong	-0.264	0.218	-0.122	-1.21	0.235	-0.707	0.18
Where do you live?	0.012	0.25	0.005	0.046	0.963	-0.497	0.52

Medium of instruction at school	0.125	0.224	0.057	0.559	0.58	-0.331	0.581
in which college have you studied?	-0.129	0.292	-0.045	-0.44	0.661	-0.722	0.464
Your household income	0.0605	0.166	0.025	0.202	0.002	-0.303	0.37
Financial Constraints	0.207	0.259	0.088	0.798	0.431	-0.32	0.733
Daily study hours	0.259	0.102	0.325	2.555	0.015	0.053	0.466

Findings of the above analysis comprises of the following points: Adjusted  $R^2 = 64\%$ ;  $R^2$  shows that 64% variations in academic performance is due to the gender, age, attendance, schooling, father/guardian social economic status, residential area, medium of schooling, part time job, financial constraints , study hour and accommodation. The coefficients of Attendance show that test score will increase by .034 units if he remained regular throughout the program and shows higher percentage of attendance. Coefficient of attendance is also significant at 5% level of significance. The coefficients of Age shows that a unit increases in Age, decreases in academic performance by -0.110, holding other factors as constant. Age is also significant at 5% level of significance.

It was observed that if gender is female then it will decrease the academic performance by -0.165 units. Whereas the significance level at 5% shows it insignificant for the study. While studying about the impact of the coefficients of Urban (Residential Area) the researcher came to know that if we increase a unit in urban graduates this will cause of decrease in academic performance by -0.264, keeping other factors as constant. Whereas the significance level at 5% shows it to be an insignificant variable for the study.

While identifying about the Government (Medium of Schooling) it was analyzed that a unit increase in Government (Medium of Schooling) graduates gives an increase in academic performance by 0.129, keeping other factors as constant. But the significance level at 5% shows it to be an insignificant variable for the study. In order to judge the impact of accommodation whether graduate is Hostelryes or Day Scholar the researcher identified that if one unit of day scholar is increased it shows the increase in academic performance by 0.012, keeping other factors as constant. Whereas the significance level at 5% shows it to be an insignificant variable for the study.

As stated above researcher also searched about the impact of mode of instruction whether it is English or Urdu and it was observed after analyzing the data that a unit increase in English Medium (Medium of Schooling) shows the increase in academic performance by 0.125, keeping other factors as constant. Although the significance level at 5% shows it to be an insignificant variable for the study. While searching about the Schooling background (Govt/Private) the researcher analyzed that a unit increases in Govt. School (Background of Schooling) cause of decrease in academic performance by -0.129, keeping other factors constant. Whereas the significance level at 5% shows it to be an insignificant variable for the study. While studying about the impact of Income on student's performance it was observed that if we increase one unit of Income it will increase the academic performance by 0.06, keeping other factors as constant. Whereas the significance level at 5% shows it to be a significant variable for the study. In order to check whether financial constraints have any impact on students performance or not the researcher came to know after analyzing the data that if one unit of financial constraints is increased it will increase the academic performance by 0.207, keeping other factors as constant. Whereas the significance level at 5% shows it to be an insignificant variable for the study.

While searching about the impact of daily study hours on students' performance the results show that one unit increase in daily study hour's increases the academic performance by 0.259, keeping other factors as constant. Whereas the significance level at 5% shows it to be a significant variable for the study.

Table 2 *Correlation Analysis of the Significant Independent Variables*

		<b>Average attendance of the student</b>	<b>Age of the student</b>	<b>Your household income</b>	<b>Daily study hours</b>
Marks /CGPA of the student	Pearson Correlation	.773**	-0.216	.447**	.614**

The regression analysis explained the variables that cause variation in academic performance of the students. Hence the significant independent variables were selected and further relationship was identified in table 2, which showed that test score and attendance are positively correlated this implies that students who are more regular show higher scores. The next one is age which shows negative correlation with the scores. Then the household income which also showed a positive relationship although not very strong but still has a relationship with the obtained scores of the students. This relationship clarifies that the parents having high household income affect positively the performance of the students. Another important factor is study time which after attendance shows strong relationship with the students' academic performance. The overall Correlation results show that attendance and daily study hours i.e. 77 % and 61 have strong relationship with the students' performance.

Table 3 *Students' Performance and Gender*

		<b>Levene's Test for Equality of Variances</b>		<b>t-test for Equality of Means</b>				
		<b>F</b>	<b>Sig.</b>	<b>T</b>	<b>Df</b>	<b>Sig. (2-tailed)</b>	<b>Mean Diff</b>	<b>Std. E. Diff</b>
Marks / CGPA of the student	Equal variances assumed	4.82	0.03	-0.19	98	0.854	-0.107	0.579
	Equal variances not assumed			-0.35	65.6	0.737	-0.107	0.306

In above table the two tailed value (p-value) is greater than 5%, so we can not reject the null hypothesis and conclude at statistically the performance of graduate student do not vary with gender.

Table 4 *Students' Performance and Medium of Instruction*

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Diff	Std. E. Diff
Marks /CGPA of the students	Equal variances assumed	0.005	0.943	0.44	98	0.66	0.144	0.326
	Equal variances not assumed			0.44	43.58	0.66	0.143	0.326

In table 4 the two tailed value (p-value) is less than 5%, so we reject the null hypothesis and conclude at statistically the performance of graduate student vary with medium of instructions. That means if students are taught in English language or any other language effects the students performance , it might be because when students from the start are taught in international language do not have understanding problems in later stages if same language is used.

Table 5 *Students' Performance and Residential Area*

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Diff	Std. E. Diff
Marks /CGPA of the students	Equal variances assumed	3.41	.068	2.76	98	.005	3.41	1.235
	Equal variances not assumed			3.15	71.20	.002	3.40	1.082

In above table the two tailed value (p-value) is greater than 5%, so we can not reject the null hypothesis and identify that the performance of graduate student does not vary with residential area. In residential area urban and rural areas were taken, so it obvious that living areas have no significant impact on students performance.



Table 6 *Student Performance and Schooling*

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Diff	Std. E. Diff
Obtained Score	Equal variances assumed	3.52	.064	2.36	98	.024	3.043	1.290
	Equal variances not assumed			2.79	63	.006	3.042	1.089

In above table the two tailed value (p-value) is less than 5%, so we reject the null hypothesis and conclude at statistically the performance of graduate student vary with schooling perspectives as if they belong to private or government schools. Hence it is observed that schooling whether it is Private school or Government schools it definitely put effect on student's performance.

Table 7 *Students Academic Performance and Accommodation*

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Diff	Std. E. Diff
Obtained Score	Equal variances assumed	.19	.667	-1.4	98	.162	-.46	.321
	Equal variances not assumed			-1.9	42	.163	-.46	.321

In above table the two tailed value (p-value) is greater than 5%, so we can not reject the null hypothesis and identify that the performance of graduate students does not vary with where they live. Those who live at their own homes don't show greater differences from those staying at hostels.

Table 8 *Students Academic Performance and Financial Constraints*

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Diff	Std. E. Diff
Obtained Score	Equal variances assumed	4.6	.038	-.92	98	.365	-.32	.352
	Equal variances not assumed			-1.01	31.3	.323	-.32	.320

In above table the two tailed value (p-value) is greater than 5%, so we can not reject the null hypothesis and observe that the students having financial constraints perform some time same results means it does not affect the performance of graduate student.

## 5. Conclusion

To identify the student's performance different factors were considered in the study such as the academic performance of the students (Grades/ CGPS) and gender, age, attendance, schooling, father/guardian social economic status, residential area, medium of schooling, study hour, accommodation, part time job and financial constraints. Linear regression analysis was used to assess the impact of all these independent variables on the dependent variable. The results showed that the model explained 64 % impact of the students performance with the above studied variables, out of which four (i.e. Attendance , study hours, household income and age) were significant. It was observed that attendance was highly and positively correlated to the students performance which shows that students who are more regular in attending lectures obtain greater performance along with daily study hours and parental income, whereas it is inversely related to the age of the students. While testing the hypothesis the researcher identified that gender, residential area, accommodation and financial constraints have no impact on student's performance whereas medium of instruction and schooling background have and impact on student's academic performance.

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