



## **Educational Performance and its Determinants: A Case Study of Quaid-i-Azam University**

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### **ABSTRACT**

In this study, we examine the socio-economic factors affecting educational performance of university students. This study is based on data mainly taken from school of economics, and 17 other departments of Quaid-i-Azam University. In perception analysis, 51.97% of 177 participants favored government's educational policies and 87.42 % of 159 participants concur that preservation of self-respect boosts educational performance. Descriptive analysis embodies that Grades of students decreases 5 % on average in Quaid-i-Azam University (male faces a deterioration of 7.3% and female faces a decline of 2.67% on average). Moreover, study time of students/day (250 sample size) increase 1.21 hours on average in university. Additionally, we find that there is a decline of 9.6 % in grades of Punjabi student while a deterioration of 4.7 % in grades Baluchistan and Sindh urban/rural. Regression analysis of this study shows that students having good grades in past, not affiliated with council system of university (based on ethnic groups) or student politics, giving proper time to study and sleep and regularly attending classes have good grades in the university than that of others. BMI has negative relation with grades of students but it's not much significant.



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## **1. Introduction**

While observing and measuring the factors affecting educational performance of student(s), we use top-down process for better analysis. First of all, we establish the fact how educational performance affects our society at macro level then we point out the factors significantly affecting it. Educational performance is directly linked with human capital and human capital is linked with our society and economy squarely.

In economics, we study four factors of production i.e. land, labor, capital and organization. Economic growth of a country is always ensued by a combination of all these factors of production. Mostly developing countries are blessed with labor while developed countries have enormous capital. China was a labor abundant country like other developing countries, but it is due to efficient management of human capital that she is now emerging as a new global power. Therefore, we can say that developing countries can thrive with help of human capital. Therefore, while observing economic conditions of a developing country like Pakistan, one cannot ignore the most important one, the labor force, which can be regarded as the backbone of developing countries. Pakistan has 75 million potential labors, but still it is an underdeveloped nation. It is only due to the mismanagement of labor force

because empirics show our labor force can't function properly in country's geographical boundaries but serves efficiently under good masters. Economic survey of Pakistan 2013-14 affirms it by representing the level of foreign remittances sent by our puny labor force working abroad i.e.12.89 billion \$(roughly 1/3<sup>rd</sup> of our budget). It is not advisable to call that trifle back to country, as foreign remittances enhance our reserves, but efficiently utilize our huge remaining resource inside the boundaries. It is sad that Labor force is neither truly valued nor rewarded and their skills, brilliance and educational knowledge faces discouraging rewards. On macro level, human capital or labor force experiences a full process of training, valuation, utilization and finally reward for labor. Underdeveloped countries like Pakistan despite having enormous labor resources still can't bring a boom to the economy. The reason is crystal clear that like many other countries of Africa and Asia, country is not paying proper attention to the basis of the effective use of labor force. There are huge loopholes in the infrastructure which are not allowing the proper training and valuation of the labor force. Human capital can't give its maximum output if not properly trained, evaluated or rewarded. Evaluation of human capital plays a significant role on each and every stage of training and utilization. Educational institutes train and evaluate our human capital for enhanced production levels in economy. Educational performance shows the adeptness of under training human capital while evaluation by exams motivates or discourages them to increase or decrease their proficiency. Therefore, it is essential to deeply scrutinize the reasons and factors affecting educational performance and ultimately contributing in national economy on macro level.

## **2. Literature review**

Educational performance is the measure of a student's observation, hard work and ability to understand a course. We may measure the educational performance in terms of average grades obtained by students on graduation or university level. We can also measure the students' academic performance using CGPA, GPA and their test results as a measure. Most of the researchers around the world use the GPA to measure the student performance (Darling, 2005; Galiher, 2006; C. E. Ross & Broh, 2000; Stephens & Schaben, 2002). They use GPA to measure student performance in a particular semester. Besides them, some other researchers, measure student performance through the result of particular subject or the previous year result (Hijazi & Naqvi, 2006).

As long as it is a matter of determination of educational performance, we may rationally assume that it is affected by different socio-economic, psychological and physical factors. We may broadly categorize all of determinants, found in literature, in sub categories of socio-economic factors, physical health, favorable and non-favorable factors. First of all, we may enlighten the socio-economic factors' significance. Albert Bandoora, a famous psychologist, say

"Man makes himself from his surroundings by attention, retention, reproduction, motivation and reinforcement"

Socio-economic factors have significant impact on human life in all spheres. Kirschner and Karpinski (2010) in a unique study, facebook® and academic performance, find that students who spend more time on facebook have relatively lower academic grades because due to facebook they spend less time on studies. Jacobson (2010)<sup>1</sup> find a strong influence of peers on educational performance and social sports is also positively and significantly affect the educational performance. Blevins (2009) find that socioeconomic status of students is positively and significantly associated with educational performance. Nonis and Hudson (2006) find that there is no influence of time spent on studying or work on educational performance. Educational performance of the intermediate students is positively related to communication skills, learning facilities, and proper guidance and negatively related with family stress (Mushtaq & Khan, 2012). Nejad, Fossati, and Lemogne (2013) demonstrate that academic performance of the students is significantly related to the native settlement status and occupation of the students. Additionally, individual's motivations to become successful in university entrance, the influence of the friends and family members, personal motivations in higher education and individual's expectations of

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<sup>1</sup> He took data of 321 participants of grade 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> to deduce the stated result in his work, Academic Performance in Middle School: Friendship Influences.

education are significantly associated with the educational performance. Farooq, Chaudhry, Shafiq, and Berhanu (2011) shows that there is a significant impact of socio economic status and parents' education on academic performance of a student; furthermore, they find that females get more grades than males. Robbins, Stommel, and Hamel (2008) shows that attention problems of the students are associated with educational performance of students. Grace, Jethro, and Aina (2012) find a strong relationship between role of parents and educational performance of the students. They emphasized the role of parents and their proper attentions to the matters of student's education have significant impact. Mustard et al. (2008)<sup>2</sup> do a unique thing and check the determinants of educational performance when means of learning and exam is online find that there is an association among students' participation, demographics, gender and nationality has strong association with their grades.

On individual's sphere, health of human being also plays significant role in determination of educational performance. Therefore, some of the researches focus on the health and physical conditions as a major determinant of the educational performance as

"A healthy body contains a healthy mind"

Verani, McGee, and Schrag (2010), an institute, publishes a report, The Association Between School-Based Physical Activity: Including Physical Education and Academic Performance in which they find that physical activity has positive relationship with educational performance. Belot and James (2009) find that providing good food to students has increased educational performance and decreased the absence from school. Ahrberg, Dresler, Niedermaier, Steiger, and Genzel (2012) find that there is a significant relationship between sleeping and educational performance as he concluded that students with less than 7 hours sleep had poorer performance in schools. A. Ross and Anderson (2010) shown that both obesity and food insufficiency has significant negative impact on educational performance. Therefore, quantity also matters in educational performance but quality matters a lot. Moustaki et al. (2011) find that a low level of glucose in blood decreases the memory level and educational performance but a higher level of glucose has no effect on educational performance. Rausch (2013), in comprehensive study, states that a good balanced, adequate and proper diet has positive impact on health as well as educational performance while having the habit of eating junk foods has a negative impact on health and mental abilities that leads to lower grades. BMI and academic performance has inverse relationship (Sabia, 2007), he finds that in 14-17 years old girls there is existence of causality because an extra weight of 50-60 pounds is subject to 8-10 % decline in the percentile of grades in white females while there is less association in blacks.

There are some factors which have a direct and positive relation with educational performance. First of all, we have scholarships which have positive relationship with academic performance. Henry and Rubenstein (2002) proved that merit-based scholarships improve the grades of students; relationship between grades and merit-based scholarships is significant and strong. Government's policies to help students are positively and directly affecting the grades whether any NGO helps the poor students or not (Wang, Duncan, Shi, & Zhang, 2013). There is positive relationship between grades and attendances of a student (Stanca, 2006). He find that an irregular student is poor in grades and his/her grades are subject to decline. Although impact of attendance was quite low but strongly significant. Publicity, encouragement and monetary help of an educational institute also have positive relationship with student's grades (King & Mathers, 1997). But publicity and encouragement have greater impact on educational performance than that of monetary help. Furthermore, negative publicity had severe negative impact on overall student's grades of that educational institute. They purposed PBSF<sup>3</sup> (performance-based school fund), which is to be allocated to schools according to their overall performance. Financial matters comprising of merit-based scholarships or some other channels have also positive, strong and significant impact on academic performance. Students get satisfaction from financial matters in terms

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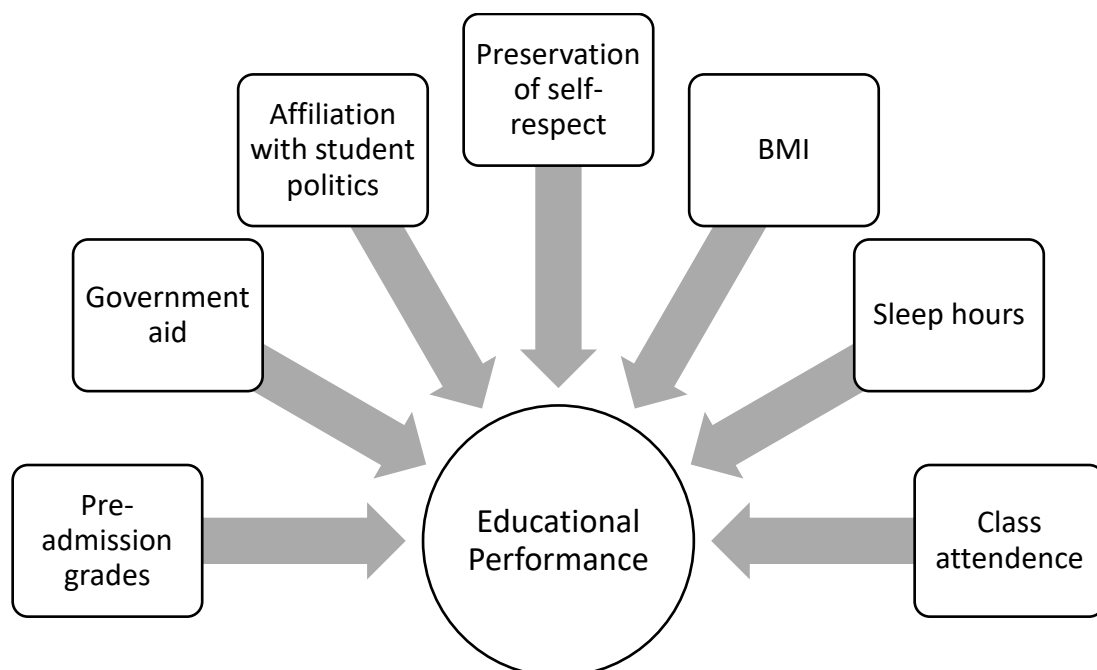
<sup>2</sup>Online Students: Relationships between Participation, Demographics and Academic Performance

<sup>3</sup> It is failed in case of Pakistan as chief minister Punjab's announcement of this scheme paved the way to corruption because head of institutes started registering only the students from their institute who are brilliant for reward. Therefore, this scheme to enhance educational performance failed.

of grades (Jian et al., 2009). Kleinman et al. (2002) find that USBP (universal free breakfast for student’s program) has a positive and significant impact on educational performance and psychological functioning of the students. Elliott and Richards (1991) find that there is negative impact on the educational performance if parents divorced between the age of 7-16 but there is no impact on grades if their parents remarried. O’Hare and McGuinness (2009) find that critical thinking changes over the Course of a degree and that these abilities are not well captured by traditional Academic assessments. Baker (2012) finds a positive relationship between monthly spending and educational performance of the students. De Baca (2010) found that academic resiliency and educational performance are strongly associated. Francis et al. (2004) find that academic motivation and educational performance are associated with students’ attitude towards studies. Galiher (2006) find that students with preprimary education have 8% higher grades on average than that of others.

Similarly, there are some factors which have negative/inverse relationship with academic performance. Finn and Frone (2004) finds that Cheating in examination hall has inverse and significant impact on educational performance and cheating is most common in lower achieving students. Academic performance and delinquency association is strong in lower performers, males and white people in comparison with their opposites (Maguin & Loeber, 1996). Misbehavior has also inverse and significant relationship with educational performance (Myers, Milne, Baker, & Ginsburg, 1987), they further disclose that stability in grades of whites is higher than that of blacks. Oettinger (1999) depicts negative relationship between extensive employment in school days and grades in racial minorities, while there is no impact of extensive employment on grades if it is done in summer vacations. A regular employment at modest week hours is associated with higher grades but there is slight decline in grades due to employment and vice versa. Jacobson (2010) find that a student having higher gaming frequency is poorer in grades as he can’t give proper time to studies. Benford and Gess-Newsome (2006) find that inadequate student recruitment standards, student academic under preparedness, lack of student and faculty’s ethnic and cultural diversity and interaction, and ineffective and inequitable instructional techniques are the main reasons of grades decline in university level.

### 3. Theoretical Framework, Hypothesis and Data



**Figure 1: Theoretical Framework**

Hypothesis underpinning this study is, “regular high attendance rate, lower BMI, good educational background, no affiliation to student politics, lower sleep hours, government aid, and preservation of self-respect in educational institute have positive impact on educational performance.”

Data of 35 students who got government's assistance in form of "Shehbaz Sharif laptop scheme", "PEEF" or "Direct reward" is collected from Quaid-i-Azam University Islamabad. Grades of those students before assistance and after assistance are collected through survey. (In laptop scheme, laptops were distributed in students who secured 70% or higher grades in graduation or higher studies. In PEEF, students who are relatively better in their districts get financial assistance from Government on semiannual basis. In direct reward students are awarded with cash prizes for securing highest marks in any division of Punjab).

In addition to above stated data, we have collected Data of 400 students from Quaid-i-Azam University taken and comparison between post and pre-admission grades will be made in next section of descriptive analysis. All other data of grades is taken from School of Economics while data relating to other variables is taken through surveys and questionnaires filled by hand or taken through social media. Data ranges from fall 2010- fall 2013 batches of school of economics belonging to different educational, ethnic and religious backgrounds. Data of monthly spending is taken through questionnaires and data of self-respect variable is taken through an online survey conducted on social media (Facebook).

We have collected data about the perception, perception about a variable's movement. We have collected the data what people perceive about "PML-N's educational policies and its impact on education"; we have collected data of 177 individuals from 17 different departments of Quaid-i-Azam University as well as from 2 departments of Punjab University. We also collected data of the perception about the impact of "humiliating behavior of an educational institute towards the students" on the grades of students. For this purpose, data of 159 individuals is collected. Data collected from 17 different departments of Quaid-i-Azam University and 2 of Punjab University is authentic as it ensures that all the respondents were at least university level graduates of two highly ranked universities.

#### 4. Research Methodology

We use regression analysis, descriptive analysis and perception analysis to test our hypothesis. Firstly, we scrutinize the methodology of regression analysis. In regression analysis we use following model,

$$Postgrades = \alpha_0 + \alpha_1 attendance + \alpha_2 council + \alpha_3 Pregrades + \alpha_4 sleep * studyatqau + \alpha_5 Bmi + \mu \quad (1)$$

Self-respect of a student is basically a measure of a student's mental satisfaction from his/her Alma mater. It shows that if a student is hurt by any teacher or staff member of that educational institute then his mental satisfaction level decreases and resultantly his/her performance decreases. Meanwhile if a student's self-respect is not hurt then there may be an upward trend in the grades and there exist a positive relationship between self-respect and grades. It happens in most of the educational institutes of a country like Pakistan that the staff of the institute intentionally or unintentionally teases the students and the applications of students remain on the desk of clerk. Red tapes as well as the behavior of the staff causes a student's self-respect to fall and that fall results in bad mental condition and students feel deprived and their restlessness of mind don't let them focus on studies with full concentration. So theoretically there exists a positive relationship between grades and self-respect.

Pre-grades are the pre-admission grades of the students of Quaid-i-Azam University. If a student has good and sound educational background, then most probably his/her grades would subject to increase. BMI<sup>4</sup> is an obesity measurement tool. It tells us how obese a person is? The more a person is obese the more he will be lazy and dull in studies and his/her grades would be lower than that of others. Sleep\* is the sleeping hours of a

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<sup>4</sup>Ross (2010) shown that both obesity and food insufficiency has significant negative impact on educational performance.

BMI and academic performance has inverse relationship (Sabia, 2007), he finds that in 14-17 years old girls there is existence of causality because an extra weight of 50-60 pounds is subject to 8-10 % decline in the percentile of grades in white females while there is less association in blacks.

student per 24 hours. Sleep should have a positive relation with the grades of students because a person having proper sleeping order may have good nerves to grasp the things. Attendance is the percentage of classes attended by students; it is perceived that a more regular student will be better in grades. Council is the affiliation of the students with council system (based on ethnic groups). Students affiliated with council system are more indulged in extracurricular activities, so they are perceived to be poorer in grades.

Secondly, we use descriptive analysis, in which we observe the different tendencies of pre-admission grades and post admission grades using "Paired t-test" on different gender, ethnic and social grounds.

Lastly, we use perception analysis, in which we may observe and measure the percentage of our sample perceiving insulting behavior and government aid a significant factor in determination of educational performance.

## **5. Results**

We analyze our results obtained descriptive, perception and regression analysis. In descriptive and perception analysis<sup>5</sup> we use different techniques on different parts of the data collected through questionnaires and surveys while in regression analysis we use comprehensive regression analysis on whole of the data.

### **5.1. Descriptive and Perception Analysis**

We use "Paired" t-test to check the difference between the pre and post grades and educational performance of the students in Quaid-i-Azam University. Data of 300 students from Quaid-i-Azam University is taken and compared. A comparison made through "Paired" t-test shows us that there is at least a 5 % decline in the grades of students on average in Quaid-i-Azam University\*. Further classification of the research shows that decline in the grades of students having domicile of Punjab is larger than Sindh and Baluchistan, as there is 9.6 % decline in the grades of students belonging to Punjab while there is only 4.7 % decline in the grades of Students belonging to Baluchistan and Sindh Urban/Rural. Girls face a 2.67% decline in grades on average while boys face a drastic decrease in grades of almost 7.3 % on average. These results indicate that Grades of students after getting admission in Quaid-i-Azam University deteriorate. Furthermore, we can draw from it that University's grading system is girls centric and boys get lower grades than that of girls. Furthermore, data of 250 students represents that study time of students/day increased by 1.21 hours on average at Quaid-i-Azam University as compared to graduation.

Empirical analysis of the data collected of 177 individuals through different sources (Facebook survey and questionnaires) shows us that 51.97% of people, having at least graduate level mental growth, are in favor of government's educational policies like Laptop scheme, PEEF and Direct reward scheme. While data of 159 individuals, collected through same sources, depicts that 87.42% respondents feel that a humiliating behavior of teacher or administrative staff has a negative relationship with educational performance. While data of 35 students got financial help from government's educational policies, shows that grades of 6 students decreased after government aid while grades of 4 students remained constant meanwhile remaining 25 students reported an increment in the marks after government help

### **5.2. Regression Analysis**

We use data of 267 students in above regression. In our model<sup>6</sup>, we get reliable, unbiased and efficient results as model has quite considerable goodness of fit or  $R^2=0.62$ , with a lower autocorrelation or  $D-W=1.99$  and higher significance i.e.  $F\text{-statistic}=0.00006$ . In our model we find positive relationship in case of Pre-grades, attendance and

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<sup>5</sup> All of the result discussed in perception and descriptive analysis are significant at 5 % level of significance.

<sup>6</sup> We have taken almost 17 variables (i.e. age of students, gaming frequency, health of student, medium of instruction before getting admission, outdoor and indoor gaming, gap between under graduation and graduation admission, financial condition and monthly spending etc), but found them insignificant so dropped and discussing only final model ( $\text{Postgrades}=\alpha_0+\alpha_1\text{attendance}+\alpha_2\text{council}+\alpha_3\text{Pregrades}+ \alpha_4\text{sleep}*\text{studyatqau}+\alpha_5\text{Bmi} +\mu$ )

sleep\*Studyatqau with a significance level of 10%, while negative determinants established are council and Bmi having 10% and 30% level of significance respectively. We can say Bmi is least significant in our model.

**Table 1**

**Impact of different variables on "Grades" or educational performance is found as follows**

Independent	Parameters	T-test value
C	19.54123	(1.673205)
Pre-grades	0.573657	(3.886502)
Attendance	0.075413	(1.701852)
Bmi	-0.226214	(-1.028625)
Council	-5.144596	(-2.014645)
Sleep*Studyatqau	0.054489	(1.828199)
R <sup>2</sup>	0.62	
D.W	1.99	
F.stat.	0.00006	

## 6. Conclusion and Policy implications

### 6.1. Conclusion

Purpose behind this study is to find out the main significant factors affecting the educational performance of students at graduation level in Pakistan. For this purpose, we choose Quaid-i-Azam University, No.1 university of Pakistan according to HEC (higher education commission) ranking. Students having most diverse educational and socio-economic background can best be found only in this University; therefore, we can say that we have chosen the best possible data set for our study. Deterioration in grades of students in University has been the most common and controversial issue in this university for many years. When students belonging to different ethnic and socio-economic background come here, they see a vast, new, and more competitive world here. In result, sometimes they give up and sometimes immunize and fight to survive in competitive environment, but still new and old features affect them in their academic life in this University.

Our findings of descriptive analysis indicate that grades of male students, and students belonging to Punjab face deterioration as compared to female students and students belonging to Baluchistan and Sindh in Quaid-i-Azam university. While on average study time of students increases in Quaid-i-Azam University followed by deterioration in average marks of students as compared to their graduation marks. This shows university's strict standards on grades and higher level of Girl centrism<sup>7</sup> in grading. Most of graduates of Quaid-i-Azam University and Punjab University are satisfied with government's educational policies and there is a clear increase in the majority of students' grades who got government aid in form of Laptop etc. A significant majority of students thinks that humiliating behavior of educational institute is major hurdle in the improvement of grades.

Our regression analyses' findings indicate that students having good grades in past, not affiliated with council system of university (based on ethnic groups) or student politics, giving proper time to study and sleep and regularly attending classes have good grades in the university than that of others. Bmi has negative relation with grades of students but it's not much significant.

### 6.2. Policy Implication

For a balanced improvement in grades of students so that they may be valued according to their potential and be encouraged to work hard, there should be a check on teaching staff's grading and council system is needed to be eradicate or improve so that it may not negatively affect the educational performance of students and along with this a strict check on the attendance of students should be assured by teaching faculty. Government should continue its educational policies but with some wisdom. It should first

<sup>7</sup> Intentionally or unintentionally biasedness found, more work on this subject is needed. A more reliable result can be attained in future.

make it sure that student getting aid is deserving or not and then it should also be assured that students not utilizing public money in positive direction should permanently be declared illegible for any government aid in future.

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