

## SOCIO-ECONOMIC BACKGROUND AND PERFORMANCE OF THE STUDENTS OF A PRIVATE UNIVERSITY: A CASE STUDY

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**Abstract:** *The study seeks to consider socio-economic background of the students enrolled at PU with a view to assessing individual performances and improvements. The assessment covers comparative achievements of different school of PU namely Business, Engineering and Liberal Arts and Social Science. Since performances of the students depend on the University curricula and quality of the faculties and also on parent/ guardian's income level, gender, religion, accommodation arrangement, past academic background and socio-economic and cultural status, the paper tries to statistically evaluate comparative importance of factors behind their performances. The analysis attempted to collect data through population survey (SIMS), but had to rely on random sample survey as required data were not available in SIMS, and regressions were run to evaluate comparative importance of the factors. The results showed that parents' income and father's education level have influence on academic performance of a student. Past academic track records of the students plays an important role in University achievements. Business School seems to be performing better than other schools. Further, the results recommend choice of career preferences of the students, opportunities and alternative options for better job opportunities. As most students were found to prefer job and Business students like it in banks/financial institutions and Engineering students in construction and telecommunications industries, the University may be recommended to take appropriate policy package.*

**Keywords:** *Academic Achievement, Socio-economic background, Bangladesh*

**JEL Codes:** *J01, J24, C13*

### Introduction and Background

Bangladesh is the seventh largest nation in the world with a population of about 148 million. It has enormous potential for rapid development in the new world economy. The people of the country are ambitious, hard working, extremely conscious of democratic norms and the value of education, especially higher education. Unfortunately it is one of the poorest countries of the world. Poverty is the main impediment of pursuing quality education in this country. It also causes malnutrition, diseases, living in an abject condition and illiteracy of the mass people. Historically Bangladesh has been beset with sluggish economy with reinforcing vicious circle of poverty. Despite initial poor conditions, war devastation and vulnerability of natural disaster, Bangladesh's

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achievements in macro-economic management and social development in recent years have been impressive. National poverty (poverty incidence), which stood at 92 percent of 75 million people in 1970, fell to 59 percent in 1980 and further to 49.8 percent in 1990 and 41.4 percent in 2004 when population doubled. Proportion of population below extreme poverty line (2122 kcal) came down to 31.5% in 2010 and is expected to be 29% by 2015. In Bangladesh, per capita income increased by 36 percent during the nineties. Social indicators also show improvement in the country. Infant mortality has been reduced from 92 per 1,000 live births in 1991 to 45 per 1,000 live births in 2009. The human development index in 1995 was 452, which rose to 543 in 2007. In terms of human development, the net enrolment rate in primary education increased from 60.5 percent in 1991 to 95.6 percent in 2010. Gender parity in primary and secondary education has been achieved. The country aims at ensuring access for all children to primary education. (MoF, 2012)

Bangladesh believes human development especially improvement in educational status as an engine of development. Since education is one of the fundamental rights of every citizen, the government is committed to bring about qualitative improvements such as enhancement of education quality, de-politicization of educational institutions, and ensuring a higher salary scale for teachers. Keeping in mind that education is one of the main strategies for poverty reduction and socio-economic development; steps have been taken to create equal access for all at all stages of learning and improving the value of schooling. (MoF 2009, 2010, 2011).

With the improvement in poverty situation of Bangladesh, the quality of education and number of educational institutions have gone up. At present, there are 18770 secondary schools, 1822 higher secondary colleges, 1470 general colleges, 9376 madrasa, 171 polytechnic institutes, 64 government technical schools and colleges, 31 public universities, 51 private universities and variety of other educational institutions in Bangladesh. Out of 292,000 university students about 133,000 students attend private universities.

Presidency University (PU), established in 2003 with the aim of imparting high quality education through teaching and research, is one of the prominent universities of Bangladesh. The emphasis of PU is on creating an institution dedicated to excellence in teaching, research, training, community services and thereby leading to character building at the grass-root level. One of the main objectives is to develop human resources capable of leading the nation and also of undertaking responsibilities for the socio-economic development of the country. The university shall also do everything possible to protect Bangladesh's social and cultural heritage and project the same everywhere. Presidency University has three schools containing four departments with a strong emphasis on research-based education. Currently more than 1,500 students are enrolled. The number of faculty members teaching at the university is nearly 100. In 2008, it opened a new branch in nearby Banani, Dhaka to cater to the growing number of students. Current Vice Chancellor of the university is Prof. Dr. Muhammad Mahboob Ali, has been working from 4th April, 2013. He is a very dynamic person. Permanent

campus of the university is unavailable. Azimur Rahman School of Engineering students as still land is disputing among the board members demanded for IEB accreditation.

Despite all these developments, the education sector of Bangladesh needs further qualitative improvement. For this we need to clearly understand factors of good academic performances of the students at all levels, which determines whether a student can pursue higher education and whether a student will be able to contribute to the society or not. But such an analysis is beyond the capacity of the present researchers. Thereby, we have decided to find the factors behind students' performance in terms of their CGPA at Presidency University.

### **Literature Review**

Haverman and Wolf (1995) found that children attainment depends on the social investment in children; the parental investment in children; and the choices that children make, given the investments in and opportunities available to them. But in Bangladesh this kind of choice is limited to a section of urban students. However, Haverman and Wolf in their paper reviews different researches since 1970s and find some common determinants of children performance, the most commons are those related to human capital of parents. The human capital of the mother is usually more closely related to the attainment of the child than is of the father. The income level of the family is positively associated with the education attainment of the child. Growing up in a family in which the mother chooses to work appears to have a modest adverse effect on education attainment due to loss of childcare time, though have some other positive effects. The children of a one-parent family or experiencing divorce are negatively related to the level of schooling attained. The number of siblings, religiousness, schooling, and the presence of books at home are found to have large and significant effect on children performance.

According to Acemoglu and Pischke (2001) family income explains difference in the enrollment rates of children in a four-year college. These effects are different between rich and poor family.

Woessmann (2004) concludes in his study that family background has strong and similar effects on both Europe and the USA. He also estimates the model using a QR approach where he concludes that there is weak evidence of variation in the family background influence.

Pedrosa, Dachs, Maia, Andrade and Carvalho presented a paper at an international conference in 2006 on a similar issue. The main result found by them was that students coming from disadvantaged backgrounds, in both educational and socioeconomic aspects, have a higher relative performance than their complementary group. This can be considered as a phenomenon which the authors named "educational resilience".

Guimaraes and Sampaio published a paper in Education Economics in 2011 on family background and students' achievement on a university entrance exam. This paper describes Brazilian experience and considers personal characteristics such as age, gender, race, religion, family income, parents' education and family size, school attended, tutoring classes, among others. Using least squares and QR, the authors found that family

background and study environment are key determinants of student performance. Parental particularly mothers' schooling impacts positively. Important other variables are family income and students' personal characteristics. The analysis of private and public tutoring classes shows that students that had extra private tutoring classes increased their scores significantly. Private tutoring and better schooling reflect parents' income position. Their quantile estimates concentrated on father schooling and family income. Apart from estimating comparative importance of different factors, the study highlighted how the Brazilian educational system, which is similar to several other developing countries, is designed in a way that inequality tends to persist across generations.

In Bangladesh the relationship between family background and student performance is not expected to be different from other countries. Since the country is poor than other countries where this type of researches were conducted we need to estimate the relative importance of the determinant. We do not find any research on this issue. However, depending on these theoretical and empirical findings, we set up our empirical model and estimate it to data on Grade Point Average scores at a private university namely Presidency University in Bangladesh.

### **Determinants of Students' Performance**

Most of the researches conducted around the globe generally found that students' performance depends on their family background and on personal background. However, the word 'family background' has been used by different researches with diverse meanings in dissimilar contexts. Nevertheless, the family background generally includes income of the parents and education level of father and mother. Income is important as a poor parent cannot afford to send his/her child to a good school where tuition fees are higher, and cannot afford good books, food and undisturbed study time. Furthermore, a child may have to work with parents to supplement income. Number of siblings with age structure may be another factor of income. A family which has grown up children can earn to help parents; while with minor children can create an economic pressure on father/mother. It should be noted that a student coming from rural areas have weaker educational background than an urban ones. In Bangladesh some districts are more advanced in education and children of their inhabitants have a knack for formal schooling; while there are different scenarios in other districts. Religion may affect student's particularly girls' ability and attitude towards education.

Out of personal background, gender is the most important determinant to pursue higher education. Generally female students are more vulnerable and have less access to formal knowledge. Past records of their educational achievements (especially SSC and HSC) show their aptitude level and knowledge base. It can be assumed that a good student at secondary and/or higher secondary level can perform better at the undergraduate and graduate level. Age may also be considered as another determinant as younger male or female student can work harder than older students.

**The Data and Sources**

Though the coverage of Students Information Management Service (SIMS) of Presidency University is quite extensive, it could not provide us with all the information we need. Therefore a set of questionnaire was prepared and distributed randomly to the students, of which 165 filled-in questionnaires were returned. It may be mentioned that while distributing questionnaire we did not noted who was a student of Business or Engineering or Liberal Arts and Social Science (LA & SS) School. After receiving the filled-in questionnaire we found, 60 students from Business School and 85 students from Engineering School and 25 students from LA &SS School responded to our questionnaire.

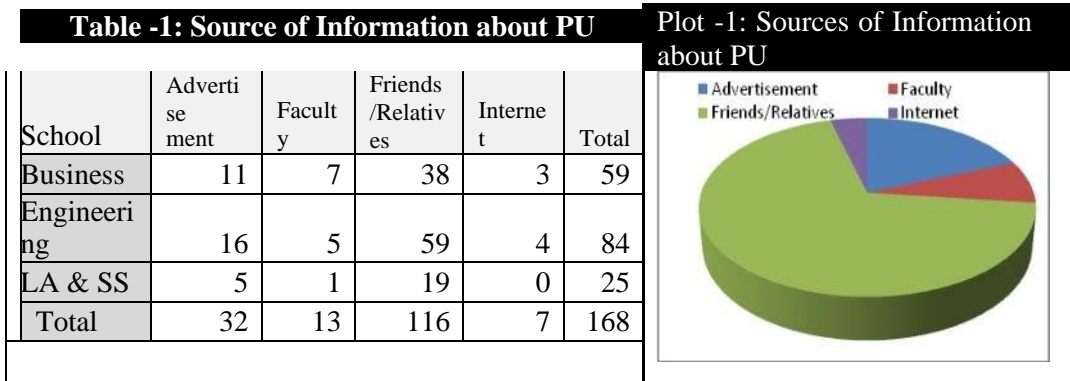
Total number of students at PU is about 1200. Allowing 7% margin errors, 95 percent confidence level and 50 percent response distribution, sample size may be calculated at 169.<sup>3</sup> Against the required sample size of 169, our number of respondents was 170 – which are considered to be acceptable.

Time period of the study is January 2014 to March 2014.

**Analysis of Data**

Following results may be seen from the data collected:

1. PU’s public relation seems to be weak, and it could not sufficiently attract students through advertisements published in dailies of the country. In fact most of the students that are enrolled in the University could know about it from friends and relatives. Following Table-1 and Plot-1 shows comparative importance of different sources of information.



(Source : Data collected)

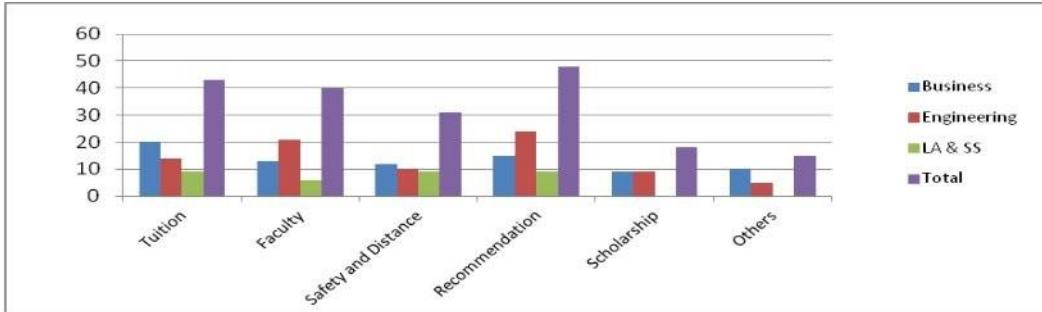
<sup>3</sup> Following formula may be used

$$n = \frac{\left( \frac{P[1-P]}{Z^2} + \frac{P[1-P]}{N} \right)}{R}$$

Where:  
 n = sample size required  
 N = number of people in the population  
 P = estimated variance in population, as a decimal: (0.5 for 50-50, 0.3 for 70-30)  
 A = Precision desired, expressed as a decimal (i.e., 0.05, 0.03, 0.1 for 5%, 3%, 10%)  
 Z = Based on confidence level: 1.96 for 95% confidence, 1.6449 for 90% and 2.5758 for 99%  
 R = Estimated Response rate, as a decimal

2. About 95 percent students of Presidency University, before enrolling at the University level courses, studied under national curricula (SSC and HSC) in Bangla, while about 4 percent students studied O-level and A-level under EDEXCEL in English medium. Only 1 percent student came from madrasas or received diploma.
3. Number of female students accounts for only about 23 percent of total. Most of the women studies Business under Business School (10%) and English under LA & SS School (9%). Only about 3 percent of the total students go to Engineering School.
4. Average age of PU students is 24.98 years with median of 23 and mode of 21 years. Standard deviation was calculated at 6.20. Younger students, with average age of 21.8 years and standard deviation of 2.2, go to LA & SS School. Average age of Business School students is 25.8 years but they have the highest standard deviation of 7.6. While mean age of Engineering Students is 25.4 years with lower standard deviation of 5.7.
5. PU could not attract many of the non-Muslim students. PU is dominated by Muslim students who account for 89 percent of the total students. LA &SS has 1 percent, Engineering 3 percent and Business 6.5 non-Muslim student, of which most of them are Hindus.
6. Students came from different districts of the country and no concentration of district is discernible.
7. Of the total, 55 percent students went to secondary and higher secondary schools/colleges that are located in urban areas. Remaining students got schooling from rural institutions.
8. About 45 percent students resides in either 'mess' or with relatives/friends. Remaining students live with their parents.
9. About 22 percent students reported that tuitions fees have attracted them to come to Presidency University, 21 percent students favored faculty qualifications and experiences, and 25 percent students were advised by their family members or knowledgeable persons to study at this University. Some students were however attracted by short distance from their respective residences and safety as it is located near the diplomatic zone. A few considered scholarship policy pursued by the University. Following Plot-2 and Table-2 demonstrate reasons for getting admitted into PU.

**Plot – 2: Major Factors Behind Choosing PU**  
(Number of Students)



(Source : Drawn by Authors’)

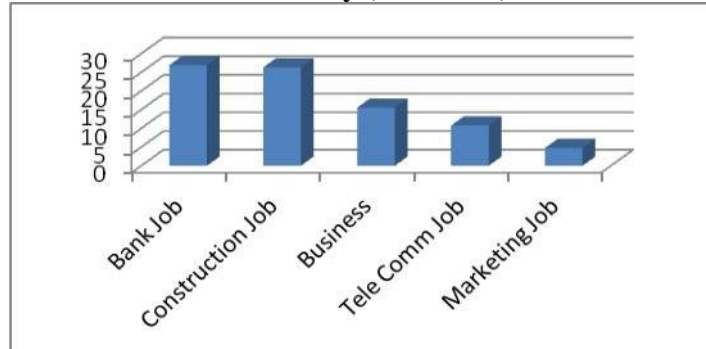
**Table -2: Factors Behind Choosing PU (Number of Students)**

School	Tuition	Faculty	Library	Computer /internet	Safety	Distance	Recommendation	Curriculum	Scholarship	Others	Total
Business	20	13	1	2	2	10	15	6	9	1	79
Engineering	14	21	3	2	5	5	24	0	9	0	83
LA & SS	9	6	0	0	5	4	9	0	0	0	33
Total	43	40	4	4	12	19	48	6	18	1	195

(Source : Collected by Authors’)

10. Though PU students, after graduation, prefer employment, about 16 percent of them plan to run their own businesses. Job in banks and financial institutions are most favored – around 27 percent. Because of the recent flourishing construction and development of land and buildings business about 26 percent students want to work there. Telecommunication sector attracts 11 percent students. Marketing job is the least preferred – only 5 percent.

**Plot-3: Career Preference of Students of Presidency University (% of total)**



(Source : Drawn by Authors’)

## The Model

Since the country's main economic goal is to alleviate poverty and ensure growth, education is considered as a vehicle to our goal and engine of development. It is true that education helps alleviation of poverty, but it is also true that because of the abject poverty in Bangladesh children are unable to get standard education. We need to clearly understand the inter-relationship between education and poverty. Thereby this study seeks to consider socio-economic background of the students with a view to assessing individual educational performances. Since we are unable to establish this relation in the country at a large, we attempted establishment of the relation for the students who are enrolled at Presidency University.

In this paper we are particularly interested in estimating the relationship between family background variables and students' achievement on PU exam scores. Thus, we may estimate three similar equations, one each for Azimur Rahman School of Engineering, Moazzam Hossain School of Business and Samsul Alamin School of Liberal Arts and Social Science in the following manner:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \varepsilon \dots \dots (1)$$

where  $Y$  is the cumulative grade point average of a student from one of those three schools and  $X_s$  are family background variables, and  $\varepsilon$  is an error term. The parameters of interest are represented by the  $X_s$ . More specifically,

$X_1$ = Family income level (Thousand Taka)

$X_2$ = Mother's education level,

$X_3$ = Father's education level,

$X_4$ = Gender,

$X_5$ = Age,

$X_6$ = Past academic background (SSC, HSC or equivalent results in terms of GPA),

$X_7$ = Religion,

$X_8$ = Secondary and Higher Secondary school/college location (Urban, Rural),

$X_9$ = Number of dependents on parents' family income,

$X_{10}$ = Accommodation in family (or otherwise)

Our general assumptions are as following. A student, whose family income is higher, could go to better school/colleges, afford tutors, buy different kinds of books and receive other facilities. Thereby family income should have positive effects on their academic performances. Number of parents' dependents may affect a student; more the dependents, lower will be per head income and houses will be crowded deteriorating environment for study of individual children. Students from school and colleges located in small town/rural areas may not perform better than that from urban areas. Education level of parents of the students should be positively related to better academic performances. Female students face many constraints while male student may have to supplement income for the family. It is difficult to have a priori knowledge of gender performances. Academic performance also depends on religious background because of many socio-



cultural factors. Age has been considered by many as a factor, some believe that matured students can better perform while some other contents that younger the student better the performance. Obviously, a student with better past academic achievements can do better at the university level.

**Estimation of the Model**

(1) **M. H. School of Business:** We ran a regression using equation (1) for students of MH Business School, and found that most of the explanatory variables could not pass t-tests. In this situation we worked with possible alternatives by dropping some explanatory variables. The best result is reported below:

**Regression Results: M. H. School of Business**

CGPA =	0.4498	+ .0077 Age	+ 0.3141 Educated Father	+ 0.0052 Income	+ 0.3089 Past Results
t-statistics	0.9566	4.04***	1.93*	2.62**	2.87***
Adjusted R <sup>2</sup> =	0.3408	F-statistics =	8.63***	Sample =	60

(Source : Estimated Results)

\*= 5%, \*\* = 1% and \*\*\*= less than 1% Significance level

The result shows that level of father’s education, parents’ income, past results and age are important in determining performances as measured by CGPA in Presidency University. All of them exerted positive influence. Among the variables past result and education of father turned out to be the most influential. The coefficients of all of the variables are statistically significant as measured by t-tests. Nonetheless, the co-efficient for mother’s education was very low and did not pass the t-test, possibly because most of the mothers were not academically influential. It seems that business studies are a matter of studying hard, because more matured students are doing better than younger class fellows.

(2) **A. R. School of Engineering:**

Academic performance of the students at the Engineering School is influenced by the past results of the student, income of the family and father’s education status as found by the regression result reported below. The age, religion, mother’s education level, gender and other variables did not show any statistical relationship with CGPA achieved in the Presidency University. Though adjusted R<sup>2</sup> is lower compared to the result found for Business School, F-statistics is highly significant.

**Regression Results: A. R. School of Engineering**

CGPA =	1.010265	+ 0.239317 Educated Father	+ 0.004524 Income	+ 0.451725 Past Results	
t-statistics	1.97	1.74**	1.48*	3.48***	
Adjusted R <sup>2</sup> =	0.1476	F-statistics =	5.79***	Sample =	84

(Source : Estimated Results)

\*= 10%, \*\* = less than 10% and \*\*\*= less than 1% Significance level

### (3) School of Liberal Arts and Social Sciences

All of the respondents of our sample survey in LA & SS School were students of English Language Department. The Department is dominated by the younger and female students. Most of them claimed that they went to school/college located in small towns. Accordingly, our regression results shows that age, female, rural and past results could statistically explain performances of the students measured by CGPA achieved at PU. Adjusted R<sup>2</sup> stood at 0.375 and F-statistics was 4.44 with significance level of 1 percent.

#### Regression Results: School of Liberal Arts and Social Sciences

CGPA =	-0.281049	+ 0.071626 Age+	0.301641 Female	+ 0.327676 Rural	+ 0.406069 Past Results
t-statistics	-0.28	2.09*	2.16*	2.11*	3.48***
Adjusted R <sup>2</sup> =	0.3746	F-statistics =	4.44**	Sample =	24

(Source : Estimated Results)

\*= 5%, \*\* = 1% and \*\*\*= less than 1% Significance level

#### Findings and Conclusions

- Most important variable for all the schools turned out to be past result variable. That indicates that better students are doing well in this University. We should not be contented with this result as it may show that teaching at this University has no contribution to better performances of the students.
- Coefficient of past results is highest for Engineering School; which may mean that the students are doing well because they are meritorious and have good academic track records, not because of the teaching they are getting at the Engineering School.
- Coefficient of past records for Business School may indicate that teaching in this school is better and it is helping to their good performances rather than depending on the past academic track records.
- Matured students are performing better than younger students as depicted in the value of the coefficient for age in all the Schools of the University.
- Though parents' education particularly mothers' education is supposed to influence positively to the performances of the children, our results only support that fathers' education do have some influence.
- Parents' income levels exert sufficient influence for Business and Engineering Schools and have almost no effect on the students of English Department. This may indicate that study in the Department is less expensive or that some of the students can earn to support their studies.
- It is interesting to note that students came from small towns are doing better in English Department. This may mean that students from urban areas with English Medium background are not interested to study at this University.
- Behaviors of most of the administrative staff including Deputy Registrar and Director (Administration) towards students are unfriendly.