Impact of Socio-Economic and Academic Background on Students' Achievement in Higher Education: A Study of Assam University

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Abstract

Socio-economic and academic background is an important indicator for pursuing higher education and for performing better achievement. The paper examines the relationship between academic performance of the students of higher education with socio-economic background and their past academic performance. This paper also examines the differences in the achievements among different socio-economic groups. The study adopts multi-stage random sampling to collect data of 200 samples from a central university situated in Silchar, Assam. To analyze the data mean difference test and multiple regression analysis is used. The study reveals that although both socio-economic and academic backgrounds are important in determining the performance of the students in higher education, but academic factors are more influential than socioeconomic factors.

Key words: Socio-economic background, Higher education, Academic past performance
JEL Classification: I21.

1. Introduction

Education is recognized as one of the crucial elements of the national development and in particular higher education plays a vital role in building the knowledge-based society for the nation. Socio-economic background is one of the most widely used indicators for measuring academic achievements of the students in education research. Increasingly, researchers examine educational processes, including academic achievement, in relation to socio-economic background (Renato et al 2006; Sirin 2005; Bornstein & Bradley, 2003; Rego and Sousa 1999; Brooks-Gunn & Duncan, 1997; Coleman, 1988; McLoyd, 1998). Differences in socio-economic factors create individual differences and that leads to variation in academic achievements which are influenced by heredity and environment of the students. Heredity and environment plays a crucial role for the development of individual and leads to difference in academic achievements.

Heredity factors include features on a person inherited from their parents and forefathers through genetic transmission. Environmental factors include surrounding of the individuals which helps in shaping the behavior of the individual, viz; family, educational institution, peer group, neighborhood, etc. Once heredity consists of all the structures, physical characteristics, functions or capacities derived from parents and other ancestors (Douglas and Holland 1947).

After birth all things related to external environment physical, cultural and psychological influences each and every aspect of growth and development of an individual. Parents are in most immediate relation with their son and daughter. Their financial status and education do have an important influence on the personality development of their son and daughter. Educated parents can better understand the educational needs of their son and daughter's aptitude. They can help their children in their early education which affects their proficiency in their relative area of knowledge. Belonging to strong financial background, parents can provide latest technologies and facilities in a best possible way to enhance

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educational capability of their children. Parental education and socio-economic factors have greater importance on students' educational achievements. They are providing financial and mental confidence to students. Explicit difference can be observed between those students who belong to different financial status and different parental educational level (Azhar et al. 2013).

2. Review of Literature

There are several literatures on measuring the impact of socio-economic variables and past academic records influencing the performance of students on different level of education both at national and international perspectives. Some of these are mentioned below.

Okioga (2013) examine the impact of students' socio-economic background on academic performance of students in Kisii University College. The study reveals that the student's social economic background influences student academic performance since education plays a major role in skill sets for acquiring jobs, as well as specific qualities that stratify people with higher and lower social economic status. The middle class parents take an active role in their children's education and development by using controlled organized activities and fostering a sense of entitlement through encouraged discussion. Families with lower income do not participate in this movement, causing their children to have a sense of constraint. A division in education attainment is thus born out of these two differences in child rearing. Lower incomes families can have children who do not succeed to the levels of the middle income children have a greater sense of entitlement, more argumentative, or better prepared for adult life.

Azhar, et al (2013) examine the ways in which student's academic achievements are effected by parental education and their socio-economic status. Students are selected from M.A. 3rd level with the demographic information of gender, roll no and department. Parental education and socio-economic status are independent variables and student's achievement is dependent variable. The study reveals that students belonging to strong financial status perform better than those of weak financial status. But, parental education boosts up their children's performance.

Wan and Cheo (2008) examine the determinants of economics undergraduates' academic performance in the top national universities of Singapore and Malaysia: the National University of Singapore (NUS) and the University of Malaya (UM). Using three basic components of economics as the dependent variable, i.e. basic microeconomics, basic macroeconomics and statistics / econometrics, it is found that students' pre-university grade is the most important determinant in undergraduates' performance. It is also found that the type of subjects taken before admitting in university, including both economics and mathematics, has no significant impact on students' academic performance. The type of pre-university programme taken prior to admission, and ethnicity were found to be important determinants among students of University of Malaya, but not of National University. This is a significant finding since Malaysia does practice a modified quota system based on ethnicity in one of the pre-university programmes. There is no significant difference between male and female performance in economics controlling for other socio-economic background.

Renato et al (2006) examine the performance of undergraduate students admitted in the State University of Campinas from 1994 to 1997 and their socio-economic and educational background. The study is based on a hierarchical model and the result that students coming from disadvantaged backgrounds, in both educational and socio-economic aspects, have a higher relative performance than their complementary group. They also report on an affirmative action program established for undergraduate admissions, partially motivated by those findings, and present evidence from initial evaluation studies showing its positive impact.

Rego and Sousa (1999) examine the relationship between the academic performance of university students on entrance grade and socio-economic background with the help of three independent samples taken from the University of Aveiro, Portugal. The findings suggest that entrance grade explains only 12-28 per cent of the degree performance variance and socioeconomic background does not seem to influence performance in higher education.

3. Objectives

This paper seeks to examine the following objectives.

- To examine the differences in the performance of the students in higher education across the family of different socio-economic group.
- To examine the impact of socio-economic background and past academic achievements of the students on their present academic performance in higher education.

4. Hypotheses

On the basis of above mentioned objectives the following hypotheses can be framed.

- There are no significant differences in the performance of the students in higher education across the family of different socio-economic group.
- Socio-economic background and past academic achievements of the students have significant impact on their present academic performance in higher education.

5. Methodology

The study is based on primary data. The data has been collected from various Post Graduate departments of Assam University, Sichar (A Central University under the Act of Indian Parliament) by using two stage random sampling method. In the first stage, 25 departments have been selected through random sampling method from 33 departments of the university. In the second stage, a total of 200 observations have been collected taking eight from each department through scheduled questionnaire.

To examine the relationship between the students' socio-economic background and their academic performance in higher education following multiple regression analysis is used.

$$PI_i = \alpha + \sum_{k=1}^{8} \beta_k X_{ki} + \sum_{j=1}^{4} \delta_j D_{ji} + u_i$$

Where, i=1,2,3.....,200, k= 1,2, ... 8 and j=1,2.,.4, and α indicates a constant term, u_i indicates an error term which follows normal distribution with mean zero and constant variance.

X_k is set of quantitative variables measuring socio-economic and academic background of the students viz; X_1 = LNINCM, represents annual family income in natural logarithmic term, X_2 = SBLNG, denotes number of siblings of the student, X_3 = FMLMEM denotes number of family members, X_4 = FTHREDN denotes father's education measured in terms of successful years of completion of formal education, X_5 = MTHREDN denotes mother's education measured in terms of successful years of completion of formal education, X_6 = ENTRYGRD stands for entry grade of the students in their pre university examination or higher secondary examination, weights are assigned into 3:2:1 ratio for first, second and third divisions respectively, X_7 = NPTUTRS denotes number of private tutors per year of graduation and X_8 = LNEXPPT denotes expenditure on private tutors per month in terms of natural logarithm and in case of the students having no private tutors are the value of expenditure on private tutors is taken as one, hence the log of that value is equal to one.

Here, D_j is the set of qualitative variables present in the model. D_1 = SCIENCE denotes science dummy which takes value one for natural science students and zero otherwise, D_2 =

GEN denotes dummy for general castes which takes value one for general caste students and zero otherwise, D_3 = OBC denotes dummy for other backward castes (OBC) which takes value one for OBC caste students and zero otherwise, D_4 = SC denotes dummy for schedule castes which takes value one for schedule caste students and zero otherwise.

Academic achievement of the students in higher education is measured in terms of grade achieved in the first degree of higher education i.e., graduation result. Further, weights are assigned to first, second and third divisions (class) as 3:2:1 ratio respectively and then number of papers for pass and honours courses are multiplied with the respective weighted results of the students. Degree results are an alternative variable for measuring the quality of education, since it is the most obvious outcome of every HEI (Das and Das 2014, Johnes and Taylor 1990). One can easily distinguish two HEIs with same pass rate, it one has more number of first class and second class than the other. Hence it is more justified to measure output by assigning proper weights with the quality and level of performance (Das and Das 2014, Johnes and Taylor 1990). Variables related to students' socio-economic background are parental occupation and qualification, students past record, number of family members and siblings of student whether the student having any private tuitions or not, etc. are included in the model according to the data availability and necessity of the study.

Again in country like India heterogeneity in education sector or elsewhere exists due to several social factors; viz; class, caste, religion and gender also. The Constitution of India with the objective to create an egalitarian society wherein social, economic and political justice prevailed and equality of status and opportunity are made available to all. But Indian society is characterized by a high degree of structural inequality based on the tenets of the caste system.

Though, every caste has suffered from the unequal and hierarchal assignment of rights to some extent, but the erstwhile untouchable castes located at the bottom of the caste hierarchy suffered the most as they were historically denied the rights to property, business, education, civil, cultural, and religious rights. Hence, in this study variables like, caste, gender, religion etc are also taken into consideration. To analyze the objectives simple statistical tools like; mean difference of the students' performance in higher education for different groups are used. To analyze the impact of socio-economic factors on students' academic achievements regression analysis is used.

6. Results and Findings

The results of the study reveal that there is significant impact of socio-economic and academic background of the students on performance in higher education. Table 1 reveals that there exists variation in performance of the students in higher education based on the different socio-economic ground. Among the different socio-economic groups, caste is found most prominent factor for variation in performance, while most academic factors are found significant in creating disparity in performance of higher education. In comparison to different castes, general caste students are performing better; while in comparison to other castes ST students are performing worst. In comparison to other castes OBC students are performing less, while SC students are better than OBC and ST students. Hence, it is concluded that among different category of students, performance in higher education for General students are highest followed by SC category students, while it is very poor in case of ST and OBC students. It is also found that the students pursuing higher education with honours are significantly performing better than pass course students. Hence, inclusion of weight in regression model is justified more justified in this study (Table 1).

Annual family income of the students who are studying higher education in this region is clustered around the median and modal value of Rs. 2,00,000 with mean Rs. 2,26,476 and standard deviation Rs. 136684.7. Hence, the income group of higher and lower

strata is considered by taking Rs. 2,00,000 as the divisor as majority of the family income lies in this range. It is also observed that the students belonging to the family with higher income of more than two lacs are performing better than below income group, though their difference is statistically insignificant. In this study among the students of different religions, Muslim students are performing better than the students of other religions and their difference is significant while in case of difference between Hindu and Christian with other religions are insignificant. There exists negligible difference in performance of the students with different types of fathers' occupation and here it is found that student's performance are comparatively better whose father engaged in service sector than that of others service. The students of the employed mother in this study are performing moderately better than the children of house wives. This may be due to the reason that employment of mother is related with educational level and empowerment of their mother which has a positive impact on children's educational attainment. Among different socio-economic variables, number of family members is negatively associated with performance indicator of higher education while number of siblings is positively related with it (Table 2).

This reflects that family member of same generation are helpful in improving performance in higher education, possibly because of the reason that the elder siblings provide guidance to the younger siblings. The coefficient of log of annual family income and parental education in this study are insignificant (Rego and Sousa 1999), though theoretically parental education is supposed to be positively associated with children's' educational attainment (Azhar et al 2013). Three castes dummy for general category, other backward class (OBC) and scheduled caste (SC) are considered in this study; dummy for scheduled tribe (ST) is dropped to avoid multi-collinearity problem. From the findings, it is observed that dummy variable for both general category and SC category are positive and significant. This implies with the increase in the number of general and SC category students' performance in degree level would be improved as they are performing better than OBC and ST students. Hence, it is observed that affirmative action in higher education for this region in spite of increasing the number of students in reserved category (especially for OBC and ST) is not successful for improving the quality of higher education. This may be due to the reason that these students are coming generally from poor socio-economic background (Table 2).

The coefficient of natural science dummy is positive and it denotes that students pursued graduations in natural science stream background are better than social science students. This is also clear from Table 1, where the mean difference of these two groups is significant and is in favour of natural science students. This may be due to the reason that there is more prospect of scoring better marks in natural science subjects than other subjects, or probably due to the reason that science students are more serious in pursuing their study. The coefficient of entry grade i.e, past results is found most crucial determinants of performance in higher education. This implies that students having good past academic are doing well in degree also. This probably due to the reason, that students having good academic background are the students with good innate capability, which are necessary and helpful in attaining good academic results. Again number of private tutors and expenditure on private tutors are significant, but it is surprising that number of private tutors is positively related while expenditure on private tutors is negatively related with the performance indicator of education. This reflects that tutors charging higher fees are not helpful in improving results of the students in higher education i.e; charging higher fees does not imply quality teaching always. The students taking guidance from more number of private tutors are performing better while with less fess.

Hence, it is observed that the performance of the students who are taking guidance from the private tutors charging low fees are better than that of who are taking guidance from

the private tutors charging higher fees. Again from the micro level observation, it is found that out of the total sample 119 students are paying tuition fees below mean (Rs. 560.77). From the data set it is observed that 15 students have obtained first class without paying any private tuition fees, whereas 11 students have secured first class in graduation by paying private tuition fees more than Rs.1000. So, the students who are paying more for improving their results marginal cost is higher than compared to the students those who are have paid less fees or no fees for private tuition. The picture is similar in case of other category of results, and hence it shows the inverse relationship between performance in higher education and excessive expenditure on it.

7. Conclusions

The study reveals that performance in higher education in case of this region is more influenced by academic background more than socio-economic factors. Family income and parental education is insignificant in this study which implies that importance of family in determining performance of the students in higher education. Among the other socio economic variables number of siblings, general and schedule caste dummies are positively while the number of family member is negatively related with the performance indicator of higher education. Performance is directly influenced by past academic record and number of private tutors, while expenditure on private tutors is inversely associated with it. Science graduate students are scoring better in higher education either probably due to their good academic pasts with good innate ability or due to the examination pattern and variation in the procedure of assessing their performance among different stream due to variation in nature of subjects.

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Table 1: Performance of the students across different socio-economic background

	Groups		Observations	Mean	Standard Errors	t-value	P-value
Annual income	Lower Income group	X_1	87	5.904215	0.231	25.571	0.000
	Higher Income group	X_2	113	5.778761	0.223	25.893	0.000
	Mean Difference (X_1-X_2)			**0.1254536**	**0.321**	**0.391**	**0.6965**
Father's Occupation	Other occupation	X_1	189	5.877	0.164	35.768	0.000
	Cultivation	X_2	11	5.091	0.766	6.650	0.000
	Mean Difference (X_1-X_2)			**0.786**	**0.783**	**1.003**	**0.337**
	Other Occupation	X_1	164	5.837	0.180	32.347	0.000
	Business occupation	X_2	36	5.815	0.356	16.347	0.000
	Mean Difference (X_1-X_2)			**0.023**	**0.399**	**0.057**	**0.955**
	Other Occupation	X_1	52	5.532	0.309	17.928	0.000
	Service occupation	X_2	148	5.939	0.188	31.546	0.000
	Mean Difference (X_1-X_2)			**-0.407**	**0.361**	**-1.126**	**0.263**
Mather's Occupation	House Wife	X_1	160	5.804	0.186	31.218	0.000
	Employed Mothers	X_2	40	5.950	0.309	19.195	0.000
	Mean Difference (X_1-X_2)			**-0.146**	**0.361**	**-0.403**	**0.687**
Castes	Others Castes	X_1	192	5.898	0.164	35.900	0.000
	ST	X_2	8	4.297	0.606	7.086	0.000
	Mean Difference (X_1-X_2)			**1.606**	**0.628**	**2.559**	**0.033**
	Others Castes	X_1	182	5.828	0.169	34.493	0.000
	SC	X_2	18	5.889	0.541	10.885	0.000
	Mean Difference (X_1-X_2)			**-0.061**	**0.567**	**-0.108**	**0.915**
	Other Castes	X_1	134	6.346	0.185	34.254	0.000
	OBC	X_2	66	4.793	0.269	17.780	0.000
	Mean Difference (X_1-X_2)			**1.553***	**0.327**	**4.748**	**0.000**
	Other Castes	X_1	92	4.964	0.229	21.584	0.000
	General	X_2	108	6.574	0.199	33.008	0.000
	Mean Difference (X_1-X_2)			**-1.610***	**0.304**	**-5.293**	**0.000**
Religions	Others	X_1	196	5.862	0.163	35.976	0.000
	Christian	X_2	4	4.417	0.762	5.794	0.000
	Mean Difference (X_1-X_2)			**1.446**	**0.779**	**1.855**	**0.152**
	Others	X_1	162	5.755	0.179	32.129	0.000
	Muslim	X_2	38	6.167	0.366	16.867	0.000
	Mean Difference (X_1-X_2)			**-0.412**	**0.407**	**-1.011**	**0.316**
Gender	Others	X_1	41	6.089	0.342	17.786	0.000
	Hindu	X_2	158	5.767	0.182	31.646	0.000
	Mean Difference (X_1-X_2)			**0.322**	**0.388**	**0.831**	**0.409**
	Female	X_1	139	5.849	0.196	29.954	0.000
	Male	X_2	61	5.798	0.286	20.301	0.000
	Mean Difference (X_1-X_2)			**0.0511**	**0.346**	**0.148**	**0.882**
Stream	Social Science	X_1	128	4.755	0.162	29.379	0.000
	Natural Science	X_2	72	7.750	0.193	**40.112**	0.000
	Mean Difference (X_1-X_2)			**-2.995***	**0.252**	**-11.882**	**0.000**
Type of College	Women's College	X_1	13	4.795	0.371	12.930	0.000
	Co- Education	X_2	187	5.906	0.169	34.941	0.000
	Mean Difference (X_1-X_2)			**-1.111***	**0.407**	**-2.725**	**0.014**
	Others	X_1	14	4.429	0.429	10.299	0.000
	Permanent Affiliated	X_2	186	5.939068	0.167	**35.435**	0.000
	Mean Difference (X_1-X_2)			**-1.510***	**0.461**	**-3.273**	**0.000**
Course Pursued	Pass Students	X_1	87	3.996	0.152	26.263	0.000
	Honours Students	X_2	113	7.248	0.163	44.412	0.000
	Mean Difference (X_1-X_2)			**-3.252***	**0.223**	**-14.573**	**0.000**
Location of the college	Students of rural area	X_1	36	6.472	0.363	17.815	0.000
	Students of urban areas	X_2	164	5.693	0.177	32.006	0.000
	Mean Difference (X_1 - X_2)			**0.779*** **	**0.405**	**1.926**	**0.051**

Source: Calculated results from the field survey conducted during January 2014 to April 2014

*Note: *, ** and *** coefficients are significant at less than one, five and 10 percent level of significance respectively.*

Table 2: Impact of socio-economic background and entry grades on students' performance

Variables	Coefficients	Standard Errors	t-value	P > |t|	[95% Confidence Interval]	
CONSTANT	1.38	2.31	0.6	0.55	-3.17	5.94
GEN	1.26**	0.58	2.17	0.03	0.11	2.41
OBC	0.34	0.58	0.58	0.56	-0.81	1.49
SC	1.11***	0.67	1.69	0.09	-0.19	2.41
SBLNG	0.19***	0.12	1.67	0.09	-0.034	0.43
FMLMEM	-0.13**	0.06	-2.1	0.03	-0.26	-0.01
FTHREDN	-0.01	0.06	-0.24	0.81	-0.13	0.1
MTHREDN	0.01	0.06	0.25	0.80	-0.10	0.13
LNINCM	0.04	0.21	0.21	0.83	-0.37	0.46
SCIENCE	2.31*	0.24	9.46	0.00	1.83	2.79
ENTRYGRD	6.58*	1.13	5.83	0.00	4.35	8.8
NPTUTRS	0.40*	0.14	2.83	0.00	0.12	0.69
LNEXPPT	-0.13**	0.06	-2.16	0.03	-0.25	-0.01

$F(12, 187) = 21.46^{***}$, $R^2 = 0.5794$, Adjusted $R^2 = 0.5524$, Number of observations = 200

Source: Estimated results from the field survey conducted during January 2014 to April 2014
*Note: *, ** and *** coefficients are significant at less than one, five and 10 percent level of significance respectively.*