

The Impact of Staying in Student Dormitory on Educational Outcome: Evidence from the University of Chittagong

MOHAMMAD MORSHEDUL HOQUE
University of Chittagong
mohoque75@yahoo.com

MD. ALAUDDIN MAJUMDER
University of Chittagong
aldn786@yahoo.com

ABSTRACT

This study focuses on the university students' educational performance based on their residential status. If students perform better in their university life we believe that their labour market outcomes would also be better and hence they could contribute to the economy significantly. In order to pursue the empirical analysis we applied the ordinary least-squares (OLS) method. Primary data has been collected from a sample of 240 students studying in different disciplines at the University of Chittagong. In addition to residential status, age, dummy for gender, and dummy for whether a respondent's family owns a house in Chittagong city were used as right-hand-side variables. Our results suggest that there is no statistically significant difference the treatment group (students staying in dormitory) and that of the control group (those not staying in dormitory) in educational outcome. This finding has important policy implications. In order to harness benefits of student dormitory in terms of educational performance authority can initiate measures to restrict student politics and increase budgetary allocation for ensuring healthy meals in the student dormitories.

Keywords: Educational outcome, OLS, student dormitory

INTRODUCTION

The University of Chittagong is one of the prominent public universities operated under the supervision of the University Grants Commission (UGC) of Bangladesh. It has 23,836 students of which more than 3,500 stay in the university's 13 student dormitories. The question of whether the residential status of a student matters for educational outcome is crucially important. Many studies suggest (see, for example, Buddin, 2012) that a student with higher GPA is likely to attain better labour market outcomes. As Ali et al. (2009) reveals, students' educational outcome plays a vital role in creating best quality graduates who will become the great leaders and the efficient workforce of a country in the future and thus be responsible for the country's socio-economic development. As an emerging and developing economy, Bangladesh requires improvement of its labour force productivity, given the nexus between educational outcomes and labour market outcomes. Thus, it is necessary to find out the factors affecting university students' educational outcome.

Apparently, whether a student stays in university's student dormitory is one of important factors. Staying in student dormitory has some positive sides that may lead to better educational outcome. A residential student requires less commuting time to attend the classes. He or she

can allocate relatively longer time for study purpose and accomplishing coursework and assignments. This may enhance educational performance. There are empirical evidences in support of this. For example, Legaspi et al. (2010), surveying 100 college students of about 23 years of age, found a statistically significant correlation between commute time to the college campus and the students' educational outcome measured in their cumulative GPA. An interesting finding of this study is that students staying at college dormitories or with roommates would result in a higher GPA than those who lives with their parents.

Residential students may spend more time in computer laboratories with internet facilities. In all the student dormitories of the University of Chittagong there are adequate provisions of newspapers, magazines and reputed journals for the students. Above all, as a reputed public university, the University of Chittagong has a central library full of most-valued and rare books and other resources. Students staying in different dormitories can use the central library at their convenient time for study purposes. The increased time spent on using those facilities is helpful in obtaining good grade. In this regard, we can refer to the experimental study of Fairlie and London (2008) involving the effects of home computers on the students' educational outcomes in a community college in the USA. In this study financial-aid students with free computers were followed for two years and it was found that students receiving free computers had better grades and graduation rates than the control group that did not receive free computers.

Staying in student dormitory has some negative sides too. A residential student misses the parents' company and parental care, which affects the student morally. As a result, a negative consequence may arise in terms of educational outcome. Our observation can be substantiated by the findings of Bettinger et al. (2013). This study analyzed a program of the Norwegian government that substantially increased parents' incentives to stay home with children under the age of three. It found a significantly positive treatment effect on older siblings' 10th grade GPA. Although, because of their maturity level, our respondents are self-dependent to a significant extent, the positive role of parents' company and parental care in their lives cannot be ignored.

It is tempting for a residential student to engage in tuitions to cover his or her dormitory expenses. In this case, less study time will be available which might adversely affect academic performance. This point can be supported by Rokicka (2014). It performed a longitudinal study of young people in England where the impact of school students' part-time employment on educational outcomes was studied. Its results suggest that working part-time during the last year of compulsory education has a negative impact on educational achievements and on participation in education in subsequent years.

Generally the quality of meals served in student dormitories is not good. The meals are claimed to lack hygiene and proper nutrient contents. Research suggests that healthy nutrition radically improves students' cognitive function and academic achievement. Specifically some vitamins and minerals play a critical role in brain growth and learning. Besides, staying hydrated is also important because a drop of just 2% in body fluid can cause difficulty with solving mathematical problems and trouble focusing on a page of text or a computer screen¹.

In our country, student wings of political parties actively exercise their activities in university's student dormitories. Thus, likelihood of getting involved in student politics is higher for those staying in dormitory. Though participating in political activities is supposed to enhance students' leadership quality, the political atmosphere of Bangladesh is so horrible that positive effects of politics are overwhelmingly offset by its negative effects. As a result, political connection may downgrade students' educational performance. Empirical studies also

¹ <http://blog.jumpinforhealthykids.org/how-does-nutrition-affect-student-performance>: Accessed July 4, 2018

support this observation. For example, Gyamerah et al. (2014) revealed that student politics affects student leaders' academic performance adversely since they dedicate more time to campaigning purpose. When they assume official responsibility they concentrate more on their leadership role than paying attention to educational activities.

Staying in dormitory, therefore, has enhancing as well as deterring effects on educational outcome of the university students. The net effect depends on the relative strength of these two opposing forces. The purpose of this study is to identify this net effect. One important source of motivation for this study is to see whether the government should increase the residential infrastructural development for the students in public universities or not in the future. This study can provide effective information to the concerned authorities in this regard.

LITERATURE REVIEW

There is a dearth of studies investigating the impact of staying in student dormitory on university students' educational outcomes. Particularly, the case of Bangladesh remains totally unexplored. Not a single study was found that deals with the issue for the case of Bangladesh.

However, by means of online searches we got an impression that in this particular research area a few studies were conducted focusing on countries other than Bangladesh. One such important study is Turley and Wodtke (2010). It showed that different groups of students are differentially affected by their living environments. Using a sample of 1st-year students from the National Postsecondary Student Aid Study, it found that the type of residence during college has no significant effect on 1st-year academic performance. But black students living in campus have significantly higher outcomes than those who live off campus with their families.

Etikan et al. (2017) investigated if students staying in campus residential dormitory have better academic performance compared to students living outside the campus environment as a result of the facilities available on the campus. The results of this study suggest that there is no significant difference in the academic performance of the students residing on-campus and those residing off-campus.

In view of the above review, it has to be admitted that there is a huge gap in the existing literature. The current study is an attempt to fill that gap in the sense that it is the first of its kind.

METHODOLOGY

Survey Method

Once we agreed on a research question, we decided that the best way to answer our question is to conduct a survey. We felt that a survey would be the simplest and easiest research method. Due to time constraints, we agreed to personally hand out questionnaires instead of sending them to people through the internet or mail. By handing out the questionnaires, we got responses immediately because we did not have to wait until respondents mailed the filled-in questionnaires back to us or respond electronically. It was also convenient to hand out the questionnaires personally because we could just give them to classmates and acquaintances. Therefore, our sampling technique was based on convenience sampling.

After we made the decision to conduct a survey, we began to brainstorm the factors that would most likely to affect the educational outcome. With these factors in mind, each of us separately came up with questions that relate to factors that affect GPA. We then combined our

questions and removed irrelevant questions because we wanted to keep the ones that were significant. We further revised our questions so that they would be more focused on the research question. During this process, we reworded the questions so that respondents would know exactly how to respond. It was really important that our questionnaire was short and fit two pages because we did not want to overwhelm and discourage our respondents.

After we prepared our questionnaire, we began discussion on how we should go to execute our research. We decided to have a sample size of 240 students because we felt that it would be feasible, considering our time constraints. To further expedite the surveying process, we have selected a representative student for each class and handed out 20 questionnaires each. This way, a student could hand the questionnaires out to their respective classmates and acquaintances. After each person had the questionnaire filled in and returned to us, we inputted the results into Microsoft Excel. After a careful scrutinizing and dropping observations having missing value(s) for any variable under consideration, we were left with a sample of 155 observations.

Variables

In this study, educational outcome is represented by ‘recently earned GPA’. This is our dependent variable. Our main independent variable is ‘staying in student dormitory. It is a dummy variable which assumes the value of 1 if a student stays in student dormitory and 0 otherwise. Considering the fact that omitting variables which are correlated with both dependent variable and main independent variable is likely to cause omitted variables bias (see Wooldridge, 2016, p. 78), we used the gender, age, and whether the family of a student owns house in Chittagong city or not as covariates.

Performing a two-sample *t*-test with equal variance, we see that our treatment group (those staying in dormitory) and control group (those not staying in dormitory) are statistically significantly different in terms of gender, age and whether their families own houses or not. The summary of the test results is presented in Table 1. This is the justification for why we included these three control variables to disentangle the causal effects of staying in student dormitory on educational outcome.

Table 1: The differences in the sample means of covariates between subsamples

Variables	Mean Difference	p-value	Statistical Significance
Dummy for gender	0.274	0.0073	Significant
Age	1.580	0.0001	Significant
Dummy for owning house	0.122	0.0714	Significant

Empirical Strategy

The econometric strategy we used in this study is the ordinary least-squares (OLS) method. We model our regression equation as follows:

$$gpa_i = \beta_0 + \beta_1 gender_i + \beta_2 age_i + \beta_3 hall_i + \beta_4 house_i + u_i \dots \dots \dots (1)$$

where *gpa* is recently earned GPA, *gender* is a dummy for gender that takes the value of 1 if the respondent is a male student and 0 otherwise, *age* is a respondent’s age, *hall* is used as a dummy to indicate our main independent variable ‘staying in student dormitory’. This dummy equals 1 if a student stays in dormitory and 0 otherwise. Finally, *house* indicates whether a

student's family owns a house in Chittagong city or not. It takes a value of 1 if a respondent's family owns a house in city and 0 otherwise.

EMPIRICAL RESULTS

Summary Statistics

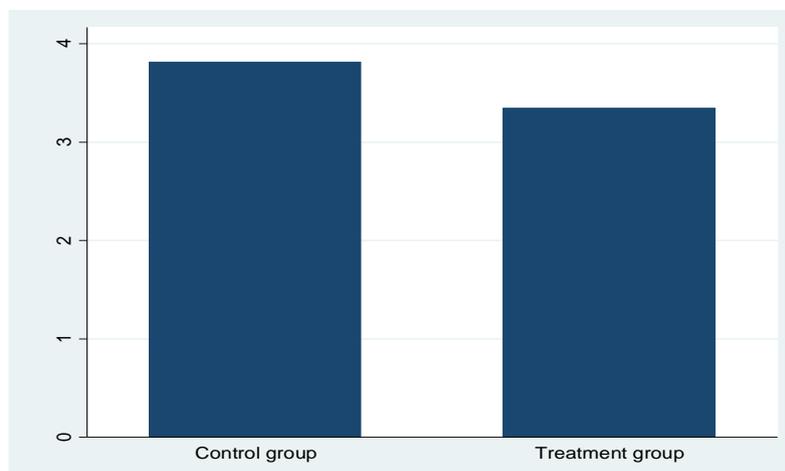
Table 2 reports summary statistics for full sample and subsamples. For brevity, only sample means are presented. Of the sampled students, 15.5% stay in university's student dormitories. Male students constituted 69% of the sample. The average age of respondents is just above 23 years. Families of more than 10% of respondents own houses in Chittagong city. Regarding our dependent variable, we see that on average, the GPA of a student is 3.74 on 4.00 scales.

The remainder of the summary statistics gives an impression that the treatment and the control group are different in all the variables under consideration. Of particular importance is the difference in the dependent variable. Students who stay in university's dormitory apparently earn lower GPA than nonresidential students. This is also visualized in Diagram 1. However, causality cannot be confirmed out of this, since this difference is based on unconditional means.

Table 2: The sample means of variables for full sample and subsamples

Variables	Full sample	Treatment group	Control group
Outcome variable			
Recently earned GPA	3.739	3.305	3.819
Main independent variable			
Dummy for staying in dormitory	0.155	1.000	0.000
Covariates			
Dummy for gender	0.690	0.458	0.733
Age	23.206	24.542	22.962
Dummy for owning house	0.103	0.000	0.122
Number of observations	155	24	131

Diagram 1: Comparing mean GPA of treatment group and control group



OLS Method

Since simple mean difference based on unconditional means hardly says anything about causality, we controlled three covariates mentioned earlier by means of the OLS method in order to disentangle causal effects of staying in student dormitory on educational performance. We estimated Equation (1) and the results of this regression are reported in Table 3.

Table 3: Results from OLS regression

Variables	Coefficient	Robust Standard Error	t-value	p-value
Main independent variable				
Dummy for staying in dormitory	0.0440475	0.1641832	0.27	0.789
Covariates				
Dummy for gender	-0.0680696	0.1130251	-0.60	0.548
Age	-0.3499919	0.0254362	-13.76	0.000
Dummy for owning house	0.1909102	0.1710549	1.12	0.266
Constant	11.88195	0.5874196	20.23	0.000

Obviously, the negative coefficient of the key independent variable, which was found from unconditional mean difference, turned to positive coefficient once we controlled for gender, age and residential status. However, the coefficient was not statistically significant. This leads us to conclude that staying in student dormitory does not have any causal effect on students' educational outcome.

CONCLUSION

Empirical evidence reveals that educational attainment positively influences labour market outcomes², which, in turn, positively affect economic development. There are many factors that determine educational attainment from tertiary to university levels. Among these factors, 'staying in student dormitory' seems to be important. So far our knowledge goes, there is not a single study that examines the effect of this factor on educational outcome in the context of Bangladesh. This study tries to mitigate this gap.

Based on a questionnaire we surveyed 240 students of the University of Chittagong to conduct this study. We pursued convenience sampling method to select our sample. Dropping observations due to missing value(s) gave us the final sample of 155 observations. In order to control for observed heterogeneity we used three covariates, namely, gender, age, and whether a respondent's family owns a house in Chittagong city.

Our results suggest that there is no significant impact of staying in university's student dormitory on educational outcome. As we mentioned earlier, several reasons might be responsible for this. For example, being deprived of parents' company and parental care, high possibility of getting involved in student politics, low quality of food served in student cafeteria and getting tempted to engage in private tuition(s) to increase personal earnings may have deterred the positive effects of staying in student dormitory.

²Buddin, R., 2012 (op. cit.)

The findings have important policy implications. While adopting policies regarding the provision of student dormitories in public universities, government should keep in mind that given the present circumstances, benefits of residential facilities in terms of educational success cannot be reaped. Beneficial effects are completely offset by adverse effects. To harness the potential benefits, government can do a couple of things. It can allow student politics in university campus only in a very restricted form. It should have a long-run plan of making student politics completely separate from national politics. Besides, government can increase budgetary allocation for ensuring the provision of healthy food in student dormitories.

REFERENCES

- Ali, N., Jusoff, K., Ali, S., Mukhtar, N. & Salamat, A. (2009). The Factors Influencing Students' Performance at Universiti Teknologi MARA Kedah, Malaysia. *Canadian Research & Development Center of Sciences and Cultures*, 3(4), 81-90.
- Bettinger, E., Haegeland, T. & Rege, M. (2013). *Home with Mom: The effects of stay-at-home parents on children's long-run educational outcomes* (Statistics Norway Research Department Discussion Paper 739). Norway: Statistics Norway.
- Buddin, R. (2012). *Implications of Educational Attainment Trends for Labor Market Outcomes* (ACT Research Report Series 2012(7)). Iowa City: ACT.
- Etikan, I., Bala, K., Babatope, O., Yuvali, M. & Bakir, I. (2017). Influence of Residential Setting on Student Outcome. *Biometrics & Biostatistics International Journal*, 6(4).
- Fairlie, R. W. & London, R. A. (June 2012). The Effects of Home Computers on Educational Outcomes: Evidence from a Field Experiment with Community College Students. *The Economic Journal*, 122(561), 727-753.
- Gujarati, D. N. (2003). *Basic Econometrics*. New York: McGraw Hill/Irwin.
- Gyamerah, D. A., Ofori, B., Afotey, A. A., Tetteh, G. N., & Agyeiwaa, L. (2014). *Assessing the Impact of Student Politics on Academic Performance among Student Leaders – A Case Study of Koforidua Polytechnic* (Doctoral Dissertation). Retrieved from http://www.academia.edu/11908049/assessing_the_impact_of_student_politics_on_student_leaders_academic_performance
- Legaspi, C., Perez, R., Remigio, A. & Sengsourya, J. (n.d.). *Factors Affecting GPA*. Retrieved from http://public.csusm.edu/fangfang/Teaching/BUS304/TeamPresentation-Spr08/Report_Group3.pdf
- Rokicka, M. (November 2014). *The impact of students' part-time work on educational outcomes* (ISER Working Paper Series 2014-42). Essex: Institute for Social & Economic Research, Essex University.
- Turley, R. N., Wodtke, G. (2010). College and Academic Performance: Who Benefits from Living on Campus? *Urban Education* 45(4).
- Wooldridge, J. M. (2016). *Introductory Econometrics: A Modern Approach*. Boston, MA: SOUTH-WESTERN CENGAGE Learning.