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Relevance to the Introduction of E- Learning on Higher Education of Bangladesh: An Experience from the Educational Cost of COVID-19

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Abstract

The great lockdown caused by the current COVID-19 pandemic has significant consequences on the global Higher Education (HE) sector. The present study calculates the economic costs of HE during Covid-19 in Bangladesh which includes both students' individual loss and institutional cost. Following the Trimmed Mean Method (TMM), the study used a purposive random sample survey conducted on 105 students enrolled in HE in different categories of institutions to identify the students' individual cost during this pandemic. The institutional cost of HE is analyzed through breaking down the budget allocated in the education sector in Bangladesh and reviewing the literatures. Finally, the net loss in HE is calculated by removing the cost of the students continuing their study through online from the total cost of Higher education which sums up the institutional and students' individual costs. The result indicates that Bangladesh experiences a huge economic cost due to this pandemic. The findings of the study might be helpful for the policymakers to frame effective education policies during the pandemic like COVID-19.

Keywords: COVID-19, Pandemic, Higher Education, Economic Cost, Bangladesh

JEL Code: I2, H5

Introduction

The coronavirus pandemic caused by SARS-CoV-2 virus affected all areas of our daily life. Unlike previous pandemics, the COVID-19 spread all around the globe and poses a drastic impact on education, travel, and international trade in addition to health issues [1]. The impact of this shocking pandemic in education involves every tier of the education system (primary, secondary, and tertiary). Higher education (HE), referred as the basic requirements for employment, is crucial for the current and future economy as it produces the caliber and diversity of the graduates, prepares the professionals, researchers, and innovators [2]. But the global HE community is facing serious challenges amid coronavirus pandemic [3].

Following WHO's pandemic strategies, such as social distancing, lockdown, travel ban etc., educational institutions are in unscheduled closure [4]. The number of students stuck at home is estimated 1.37 billion which is 80% of the global student population [5]. Many countries moved toward distance learning following the ban in the face to face education but started to face new challenges emerged from the equity issues, infrastructure, broadband capacity, and pedagogic capacity [2].

Bangladesh, which has the most Covid-19 cases in South Asia after India and Pakistan, detected the first case on March 8, 2020. Bangladesh first started a nationwide lockdown on March 26, 2020 and has expanded six times, including the educational institutions across the country in the response to new cases found [6]. The HE of Bangladesh has been confronting major challenges due to Coronavirus pandemic. According to Ahmed (2020), 4 million students of HE in

Bangladesh of over 5,000 institutions including public and private universities, affiliated colleges, and professional institutions are in lockdown from March 26, 2020 [7]. The general lockdown for the whole country was extended till May 30, 2020 but the education sector is still in an unscheduled closure and will continue until a considerable improvement of the situation [7]. In addition to the educational loss, the prolonged shutdown may cause a heavy economic cost as both education providers and the students need to maintain a fixed cost regardless of whether the educational institutions are open or closed.

To minimize the adverse shock of a prolonged closure, distance learning is the only way to continue educational activities. One way of distance learning is online delivery which is more perfectly used in the countries well equipped with the required equipment and other forms of the distance learning include email delivery, television, radio, and mobile applications [2]. But ensuring equal access to distance learning remains a challenge considering the affordability and availability of the remote learning equipment. In Bangladesh, only 5.6% of the households own a computer or tablet, internet is accessed in only 37% of the households, 50% of the households have a television [8]. Despite all the limitations, the distance learning remains the only option to minimize the disturbance [4].

To introduce new policies with a view to overcoming the crisis it is essential to estimate the economic cost due to COVID-19. There are very limited number of researches conducted which relates COVID-19 in Bangladesh, almost all the studies focused on medical and health issues. Some newspaper articles highlighted the impact of COVID-19 on HE in Bangladesh but none of them underscored the economic loss in a scientific way. In Bangladesh, no exact data on the financing of the HE sector is available. By using different literature and self-constructed survey this study estimates the economic loss during this pandemic. This paper encompasses 7 sections. The next section provides a review of the existing literature. Section 3 describes the current scenario of HE and section 4 describes the situation of COVID-19 in Bangladesh. The data and methodologies used in the study are included in section 5. Section 6 discusses the findings of the study and Section 7 summarizes the study by incorporating some policy implications.

Literature Review

The coronavirus pandemic has resulted in almost 14,118,115 confirmed cases and almost 602,948 deaths globally as on July 18, 2020 [9]. In this trend, Bangladesh surpasses about 200 thousand coronavirus infections and about 3000 death on July 18, 2020 [10]. Throughout the literature, there is consistent evidence that the pandemic is a dynamic situation, will affect not only the health sector but the education sector also. There is increasing concerned that the economic outcomes of coronavirus will also affect the HE institutions and their measures for the long run [11,12].

Several empirical studies like Burgess & Sievertsen (2020) found that the global lockdown of education institutions is going to cause a major (and likely unequal) interruption in students' learning. This reality is also supported by Johnson, Coleman, & Batten (2020), they observed that the Impacts from the pandemic have enlarged PhD students' financial strain to the point that may result in many being forced to departure research studies [11,12]. Even though teaching is moving online, on an untested and unprecedented scale, this is evident that COVID-19 has affected all levels of the education system, from pre-school to tertiary education [7,13].

Meltzer, Cox & Fukuda (1999) examined the likely economic effects on the influenza pandemic in the USA and evaluate several vaccine-based interventions [14]. At a gross attack rate of 15-35%, the number of influenza deaths is 89-207 thousand and estimated mean total economic impact for the US economy is D73.1- D 166.5 billion. In the current situation, the World Bank predicted COVID-19 could be the reason of extreme poverty for 40-60 million population worldwide [15].

In a recent study, Nunu (2020) argued that service-oriented economies will be particularly negatively affected and have more jobs at risk [16]. Developing countries will be more affected by this crisis (more than 15% of GDP). The results suggest that on average, each additional month of crisis costs 2.5-3% of global GDP. So, dropout is the ultimate reality of post pandemic Bangladesh because of certain economic recession. In the UK, a £427 bn package of emergency loan guarantees to help those in financial difficulty [13]. The policy actions at the beginning of the crisis, during the crisis and in post-crisis will be different. The impact of the COVID-19 is now compared to the economic crisis of the Great Depression in 1930 [17].

In our study, we explore the economic impact of HE in Bangladesh and address some cost minimizing issues. According to Sampa Iftekhar (2016), the best advantage of the distance learning is one can learn from it anywhere and at any time [18]. It does not matter in which part of the world students are living in. Students also could easily get access to course materials. Nagrale (2013) suggests that Google classroom is one of the most well-known platforms of enhancement of teachers' workflow [19].

A very meager amount of study has been observed focusing on the coronavirus issue in Bangladesh. Almost all the studies are from health and medical context. To date, some newspaper articles focused on the impact of the current pandemic on HE and probable solution of the crisis. However, none of them identified economic cost in HE due to the pandemic situation in Bangladesh. Thus, this study may be helpful for the policymakers to shape educational management strategies during a pandemic in Bangladesh.

Present Scenario of HE in Bangladesh

In Bangladesh, HE is provided by three ways: diploma programs in polytechnics under the technical and vocational education and training (TVET), graduate and postgraduate programs in universities and affiliated colleges under the National University Universities are autonomous entities that provide HE and undertake research and innovative activities under University Grant Commission (UGC) of Bangladesh [20,21]. Colleges under the national university are typically less autonomous teaching oriented HE entities.

HE sector in Bangladesh is under the authority of the Ministry of Education (MoE). The Ministry of Education has two division, Secondary and Higher Education Division (SHED) and Technical and Madrasa Education Division (TMED). The SHED is liable for secondary education and HE, while the TMED is accountable for TVET and 'Madrasa'. In terms of legislative framework, there has been no specific legal framework to provide regulatory directives in the HE sector [22]. Thus, the National Education Policy (NEP) 2010 to some extent describes the overall development of the HE sector. The NEP 2010 defines the MoE as the top body for policy direction and management of the HE sector in Bangladesh. The SHED of the MoE manages the HE sector through DSHE and one attached body UGC. The UGC, is the authority for managing and coordinating public and private universities, maintaining the quality of university education, managing the allocation of government funding to universities [22].

The exact allocation of HE budget is difficult to identify because of the aggregate allocation of the budget on education system. SHED is accountable for both secondary and HE but higher secondary student's budget is included in HE budget. In this case different literature and Budget analysis of SHED help us to find the HE budgets. Figure 1 exhibits the budget for education in Bangladesh.

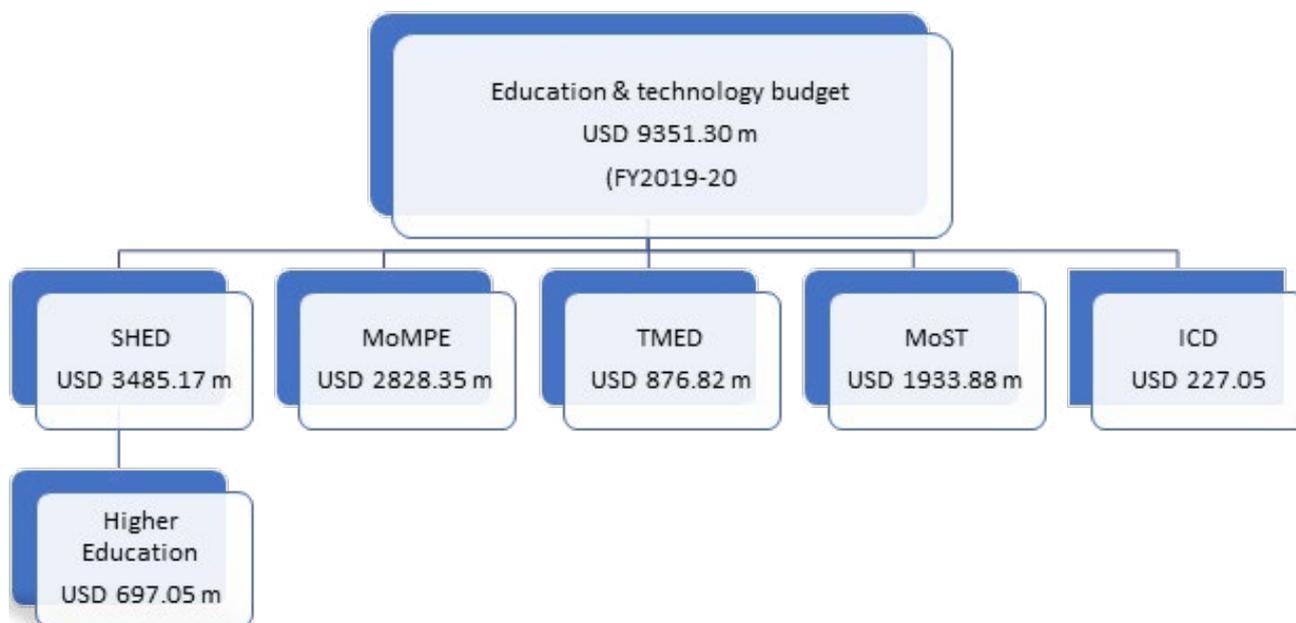


Figure 1: Distribution of Education and Technology Budget in Bangladesh

Source: Bangladesh Budget (2019-20)

Note: SHED is Secondary and Higher Education Division, MoMEPE is defined as the Ministry of Mass & Primary Education, TMED is the Technical and Madras Education Division, MoST indicates Ministry of Science & Technology, and ICD is Information and Communication Department. 20% of SHED is allocated in HE [22].

HE contributes to the development of a hypercritical mass of professionals and experts needed for sound economic development in modern knowledge-driven economies. So increased budgetary allocations toward investment in HE is highly justified.

Bangladesh provides a relatively low public funding allocations to the tertiary education compared to the international standards and in terms of proportion of GDP spending in education, Bangladesh is placed 155th out of 166 countries [22].

Present Scenario of Covid-19 in Bangladesh

Bangladesh, which has the most Covid-19 cases in South Asia after India and Pakistan, first started a nationwide lockdown on March 26, 2020 and has expanded six times, including the educational institutions across the country in the response to new cases found [6]. As of 17th July 2020, according to the Institute of Epidemiology Disease Control and Research (IEDCR) (2020), there are 199357 confirmed COVID-19 cases in Bangladesh including 2547 related deaths and case mortality Rate is 1.36% [10].

Figure 2 summarizes the coronavirus COVID-19 scenario in Bangladesh in terms of total number of fortnightly positive cases, recovery, and death. The figure indicates that the positive cases of the COVID-19, number of recovered people and number of deaths followed an upward trend for Bangladesh. The number of positive cases was low in the first month and started increasing sharply from the second week of April which continues until it downturned slightly after the first week of July. The number of recovered people follows a slow increase as well at the initial stage and shows drastic improvement between last week of May and the first week of June probably due to the revised criterion to declare a patient recovered. There is a clear ups and downs in the number of deaths in the considered period with maximum deaths in between second and third week of June.

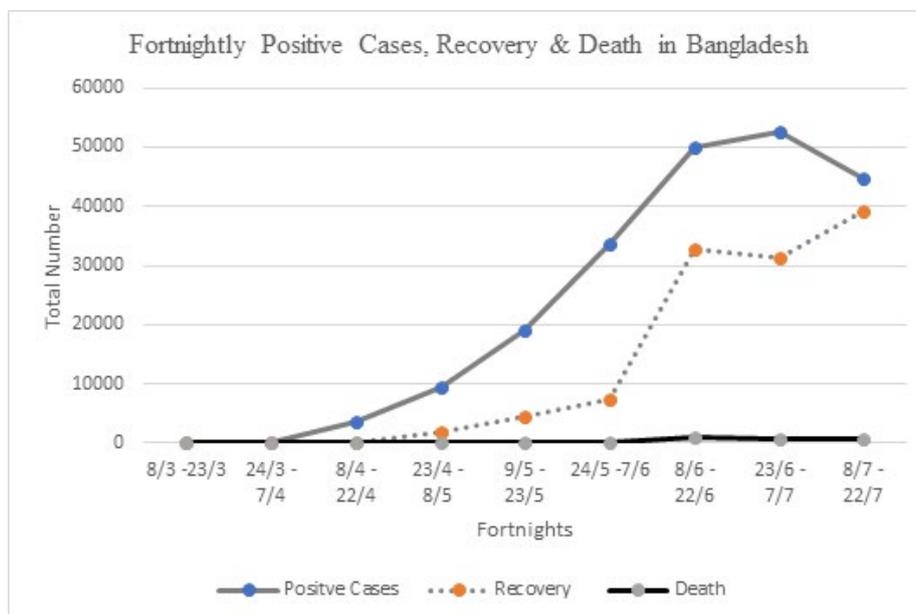


Figure 2: COVID-19 Scenario in Bangladesh

Source: Worldometer, 2020 [23]

It is clear from the figure that the number of positive cases started decreasing from the second week of July. It apparently seems that the situation is improving in Bangladesh, but a better understanding of the scenario requires a comparison of the positive cases with the number of cases tested. Table 1 encapsulates the scenario of COVID-19 in Bangladesh with taking the rate of percentage change of the indicators into consideration. The number of tests shows an increasing trend until the first week of July and so the rate of positive cases. The number of test decreases probably due to the introduction of charge for testing the coronavirus [24]. From the second week of July, the number of people tested is observed to follow a decreasing fashion, but the percentage of test reported positive remained significantly high. It implies that thanks to the lower cases of tests, the number of positive cases is low even though the people are being infected at a very high rate. Initially, the recovery rate was quite low until the first week of June, it however started to increase drastically from the second week. Unlike the rate of positive cases and rate of recovery, the death rate was initially so high in Bangladesh but decreased eventually in a continuous pattern.

| Fortnights | No. of Test | No. of cases | Rate of positive cases | Recovery | Recovery Rate | Death | Death Rate |
|------------|-------------|--------------|------------------------|----------|---------------|-------|------------|
| 8/3 - 23/3 | 509 | 5 | 0.98 | 5 | 100.00 | 3 | 60.00 |
| 24/3 - 7/4 | 3669 | 144 | 3.92 | 28 | 19.44 | 14 | 9.72 |
| 8/4 - 22/4 | 28341 | 3608 | 12.73 | 59 | 1.63 | 103 | 2.85 |
| 23/4 - 8/5 | 78824 | 9362 | 11.87 | 2009 | 21.46 | 86 | 0.91 |
| 9/5 - 23/5 | 123221 | 18944 | 15.37 | 4385 | 23.15 | 246 | 1.29 |
| 24/5 - 7/6 | 163312 | 33691 | 20.62 | 7417 | 22.01 | 103 | 0.30 |
| 8/6 - 22/6 | 232732 | 50017 | 21.49 | 32852 | 65.68 | 947 | 1.89 |
| 23/6 - 7/7 | 245761 | 52659 | 21.42 | 31347 | 59.52 | 649 | 1.23 |
| 8/7 - 22/7 | 193129 | 44809 | 23.20 | 39100 | 87.25 | 600 | 1.33 |

Table 1: Rate of Covid-19 Positive Cases, Recovery Rate and Death Rate in Bangladesh

Source: Worldometer, 2020

Note: Rate of positive case is the percentage of test case reported positive, recovery rate defines the percentage of infected people recovered, and the death rate indicates the percentage of infected people died.

Data & Methodologies

The study mainly focuses on two types of costs: institutional cost, and students' individual cost. Institutional costs are the amount government spend in higher studies and student's individual costs are the expenses the students spend in terms of rent, expenses on food and other personal costs. Data have been collected from both primary and secondary sources. We collected data randomly from 105 different graduates using purposive random sampling from 8 different divisions of Bangladesh, among them 78 % respondents were male and rest of them were female. 40 students from the public university, 47 students from the National university, 2 students from the open University and 16 students from the private university were interviewed through a structured questionnaire to know their average expenditure per month. Table 2 presents a category-wise distribution of the sample.

| | Division | | | | | | | | |
|--------|----------|------------|--------|---------|---------|----------|--------|-----------|-------|
| | Dhaka | Chattogram | Sylhet | Rangpur | Barisal | Rajshahi | Khulna | Mymensing | Total |
| Male | 9 | 12 | 21 | 12 | 9 | 7 | 6 | 6 | 82 |
| Female | 4 | 3 | 5 | 3 | 1 | 2 | 4 | 1 | 23 |
| Total | 13 | 15 | 26 | 15 | 10 | 9 | 10 | 7 | 105 |
| | 12.38 | 14.29 | 24.76 | 14.29 | 9.52 | 8.57 | 9.52 | 6.67 | 100 |

Table 2: Category-Wise Sample Distribution

Source: primary data collected through survey

To identify the institutional loss in HE the study used the HE budget following Bangladesh's national budget for the fiscal year 2019-20. We used 150 sources and Table 3 summarizes the sources used in the study. The estimation of total loss in education requires to know the number of students in HE. This study detected the number of students by summing up the online information provided in the website of Ministry of Education, University Grant Commission of Bangladesh, and universities in Bangladesh. The universities along with their web address and number of students are enlisted in appendix 2.

| Survey type | Example | Number | Percentage |
|------------------------|---|--------|------------|
| University websites | www.nu.ac.bd | 3 | 5 |
| HE related Information | Budget of Bangladesh (2019-20) | 5 | 03.34 |
| Journals | IOSR Journal of Business and Management | 18 | 12.00 |
| Daily News paper | www.dailystar.net | 4 | 2.66 |

Table 3: Sources Used for Analysis

Source: Authors' estimation

To determine the individual students' cost the study applied Trimmed mean method. Trimmed Mean method is an averaging technique, often used in reporting economic data, which adjusts the outliers by eliminating a small portion of the exceptionally large and small values [25]. Then we calculated Institution's expenditure per student's yearly from Government budget (2019-20) and University Grants Commission's annual report 2018 different literature review and turned all monetary value to the current value by using future value formula. Hence the study derives the total economic costs in HE by summing up both students' individual cost and institutional cost [21]. Finally, we derived the net loss in HE during pandemic by removing the cost of the students continuing their study online.

Results and Discussion

This study attempts to find the institutional loss due to the pandemic as the institutions need to spend a fixed amount even if the colleges and universities are shuttered. Table 4 represents the institutional loss in HE in Bangladesh. The result indicates that the institutions' per day expenditure is USD 2.90 million. However, the expenditure in HE varies according to the category of the universities. The highest per student per year is observed in the public universities which is 83-fold of that of the national university. The national university provides higher education through the colleges for a large number of students, but the total expenditure allocated is the lowest comparing with other types of universities.

| University Type | Total Students | Yearly institutional investment for per student (current value) BDT | Yearly loss (BDT) | Per day loss (million)BDT/ USD |
|---------------------|----------------|---|-------------------|--------------------------------|
| National University | 2788783 | 815 | 2272858145 | 6.23 (USD 0.073) |
| Public University | 818040 | 68093 | 55702797720 | 152.61 (USD 1.79) |
| Open University | 333615 | 3821 | 1274742915 | 3.49 (USD 0.041) |
| Private University | 361792 | 85196 | 30823231232 | 84.45 (USD 0.993) |
| Total | 4302230 | 157925 | 90073630012 | 246.78(USD2.90) |

Table 4: Institutional Loss

Source: UGC's annual report 2018 and Universities website.

Note: Yearly institutional investment for per student was P indicates BDT 741 for National University, BDT 61900 for Public University BDT 3474 for Open University, BDT 77451 for Private University in 2018, rate of interest is assumed $r = 10\%$ and $n=1$. We used future value formula $FV = p(1+r)^n$ to find the current monetary value in terms of 2018.

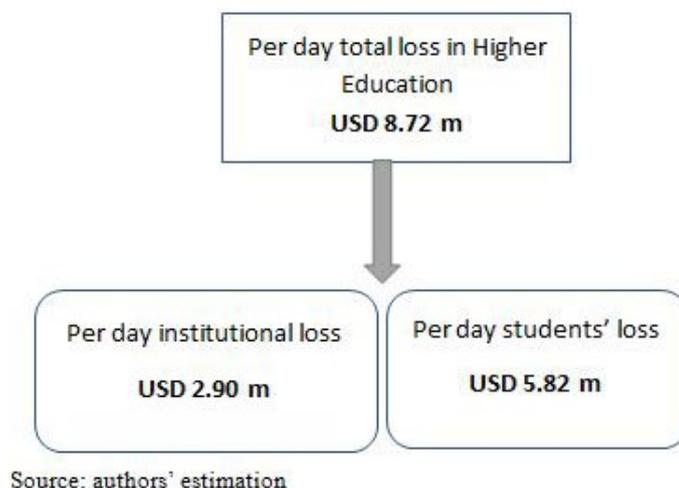
Students also have a fixed cost regardless of whether the institutions are open or closed. To find the students' individual cost this paper uses 40% Trimmed mean method by removing the lowest 20% and the highest 20% value. Table 5 summarizes the students' individual loss during the current pandemic based on the survey result. The survey result is analyzed in appendix 1. Per students per day individual cost is higher for the students from private university whereas students from the Open university spend the least amount Total number of students in higher education is 4302230 and the students' total cost per day is estimated as USD 5.82 million. Students at the private universities spend the highest individual cost compare to other categories. However, per day total cost is found highest for the national university as the number of students is much higher than in other categories.

| University Type | Total Students | per student per day expenditure | 12 month loss (BDT) | per day in million BDT (USD) |
|---------------------|----------------|---------------------------------|---------------------|-------------------------------|
| National University | 2788783 | 109 | 110951731655.00 | 303.98 (3.58) |
| Public University | 818040 | 125 | 37323075000.00 | 102.26 (1.20) |
| Open University | 333615 | 111 | 13516411725.00 | 37.03 (0.44) |
| Private University | 361792 | 143 | 18883733440.00 | 51.74 (0.61) |
| Total | 4302230 | Using 40% TMM | 180674951820.00 | 495 (5.82) |

Table 5: Students' Individual Loss

Source: Authors' estimation

So, per day institutional cost and students' individual cost of higher education during pandemic are found USD 2.90 m and USD 5.82 m, respectively. Summing up these two costs, the total economic cost due to the pandemic becomes USD 8.72 m per day. Figure 3 breaks down the per day total loss in higher education. The result is consistent with the total cost in higher education estimated by the World Bank [22].



However, the whole cost calculated so far is not the loss due to the pause in educational activities caused by COVID-19 as some institutions are continuing their academic activities through online.

Literature suggest that a very few numbers of students in HE is involved in the online learning in Bangladesh. Our survey result also reveals the same findings. As the objective of this study is to derive the economic cost in higher education, we need to consider the students continuing their studies using online method. Table 6 represents Students' learning method during this coronavirus pandemic. Only 20% of the sample students are continuing their studies trough online method. However, 10% of the students are independent learner and 5% of the students are going through the family-centered learning. Our findings from survey is consistent with Islam, Tanvir, Amin & Salman (2020) as their survey suggests that 23% of the students in HE are going through the online education method [26].

| Learning Method | Number | Percentage |
|------------------|--------|------------|
| Online | 21 | 20% |
| Independent | 11 | 10% |
| Family_ centered | 5 | 5% |
| Zero learner | 68 | 65% |
| Total | 105 | 100% |

Table 6: Students Learning Methods During Covid-19

Following the survey result, we need to deduct the cost of 20% of the students' cost to find the net economic loss in higher education as they are continuing the study. We are ignoring the independent learners and family-centered learners as they are not in any institutional procedure. Removing 20% online learners, total economic loss of remaining 3,441,784 students becomes USD 6.96 m. As Bangladesh is going through a closer in academic institution from Mid-March, the total loss becomes USD 835.2 m as of Mid-July. Thus, it projects that the economic loss in HE will be USD 252.8 m and USD 2540.4 m if the pandemic prolongs for 6 months and 12 months respectively if institutions remains closed and does not improve the online learning coverage. Table 7 covers the projection of economic loss in HE in Bangladesh due to the current pandemic.

| Daily net loss (million in USD) | Loss so far (million in USD) | Projected loss for 6 months (million in USD) | Projected loss for 12 months (million in USD) |
|---------------------------------|------------------------------|--|---|
| 6.96 | 835.2 | 252.8 | 2540.4 |

Table 7: Projection of Economic Loss in HE Caused by COVID-19 Pandemic

Source: Authors' estimation

Conclusions

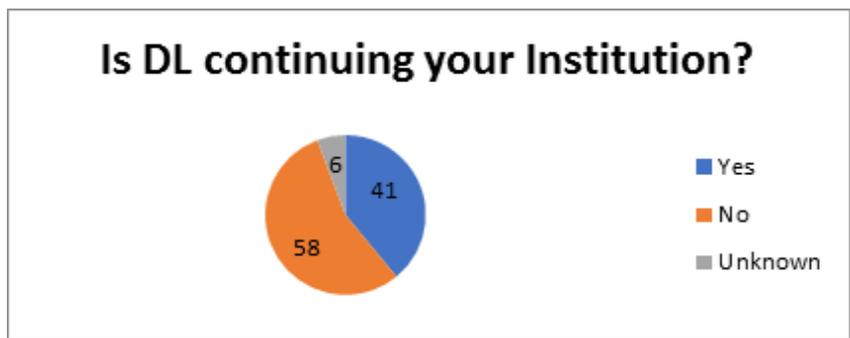
This paper investigated the economic loss in HE sector in Bangladesh caused by the coronavirus pandemic using both primary and secondary data. The primary data collected from 105 students enrolled in the higher study through purposive random sampling which includes the individual student's economic loss due to closure of the academic activities. The secondary data covers the institutional loss analyzing the budget allocation for the education sector. The findings confirm that the HE sector in Bangladesh faces significant economic loss due to the COVID-19 outbreak. As the economic loss due to the pandemic is huge, the result suggests that the cost may be minimized by introducing different forms of distance learning. To avoid more loss in higher education the study further suggests to take some bold steps, such as initiating online training for the teachers, forming a central video-streaming channel including free downloading option, ensuring free internet connection for the teachers and students. Thus, the current study may be helpful for the policymakers to form the policy to overcome the crisis in a pandemic period. However, the possible optimal number of students is essential to identify to run the distance learning method effectively. The study offers an avenue for further research on the feasibility and the probable outcome of distance learning in higher education in Bangladesh.

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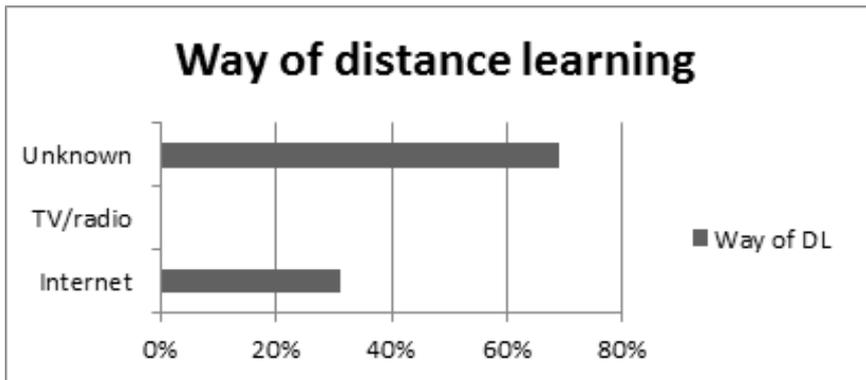
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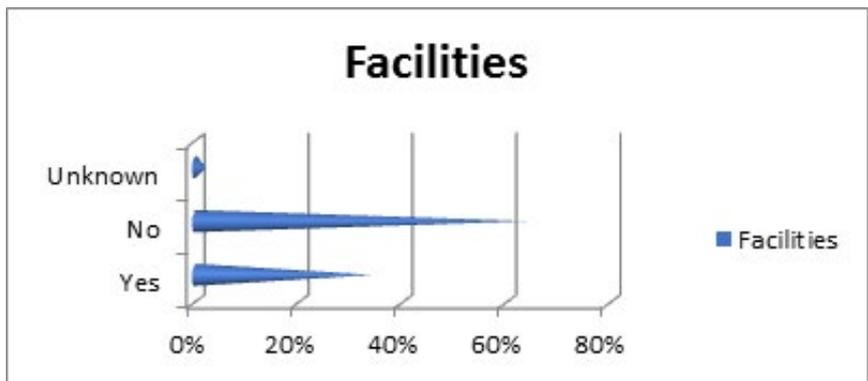
Appendix 1: Survey Result



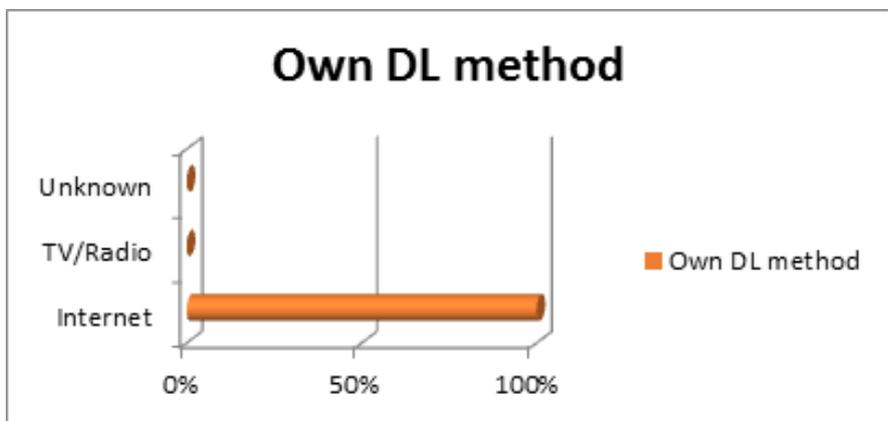
1. Is Distance Learning (DL) continuing in your institution during Covid-19?



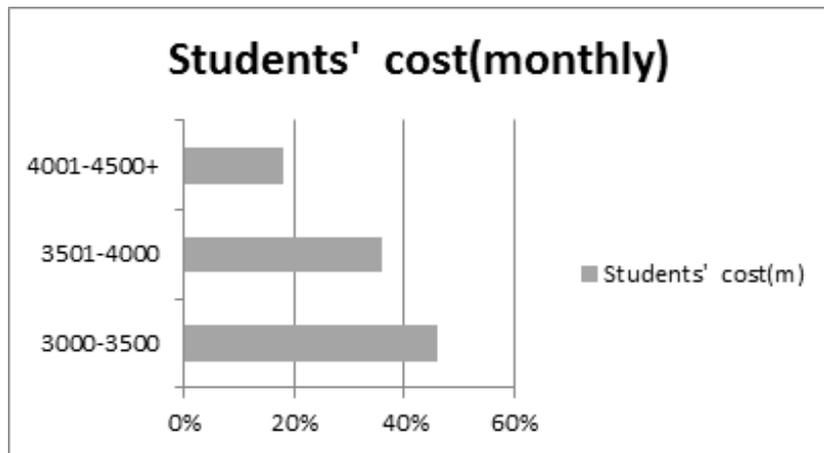
2. In which way Distance Learning (DL) is implementing in Bangladesh?



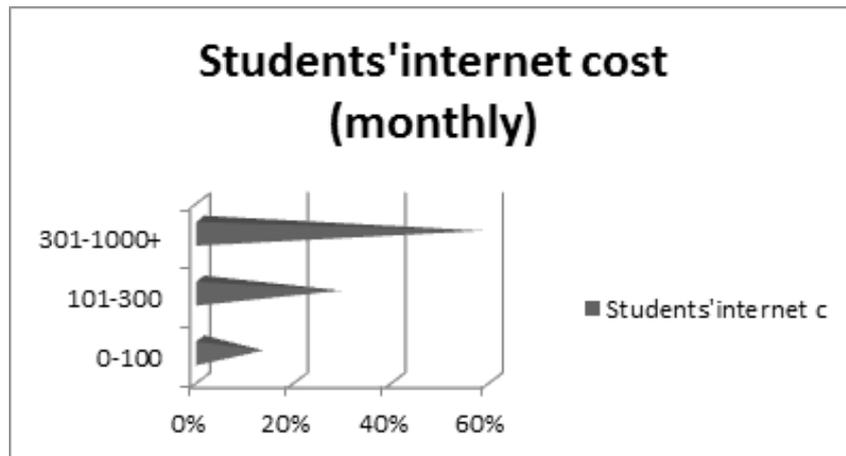
3. Do you have enough facilities to avail DL?



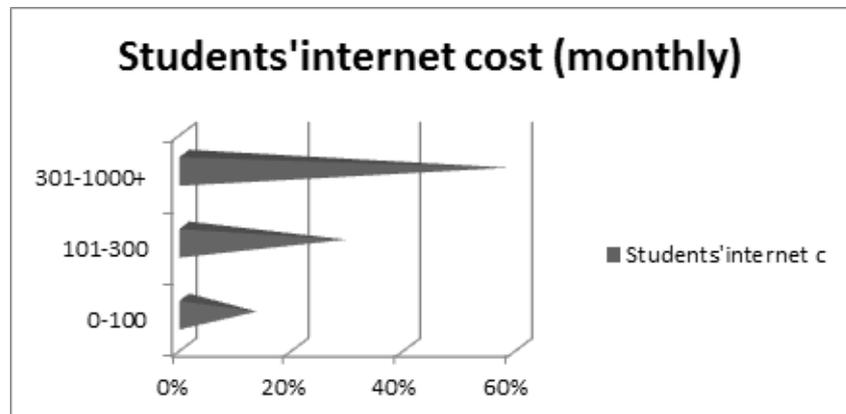
3. Do you have enough facilities to avail DL?



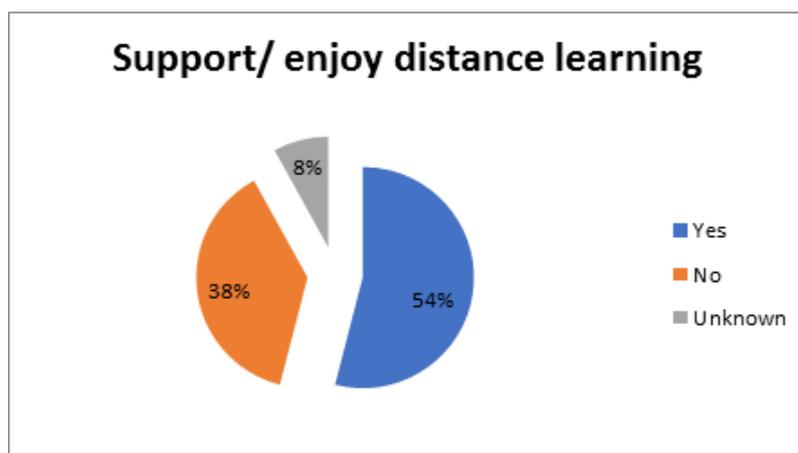
5. How much you spend monthly for food and house rent (If any) during Covid-19?



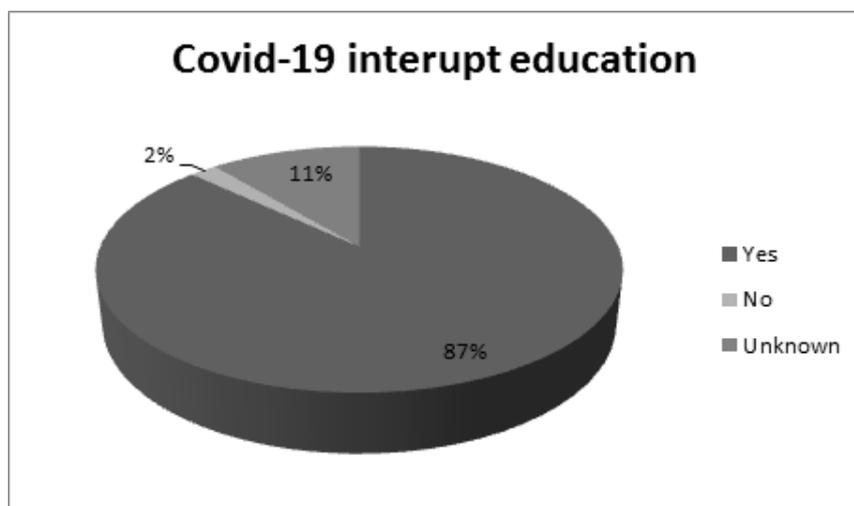
6. What is your approximate average cost (If any) for Internet in Covid-19 period?



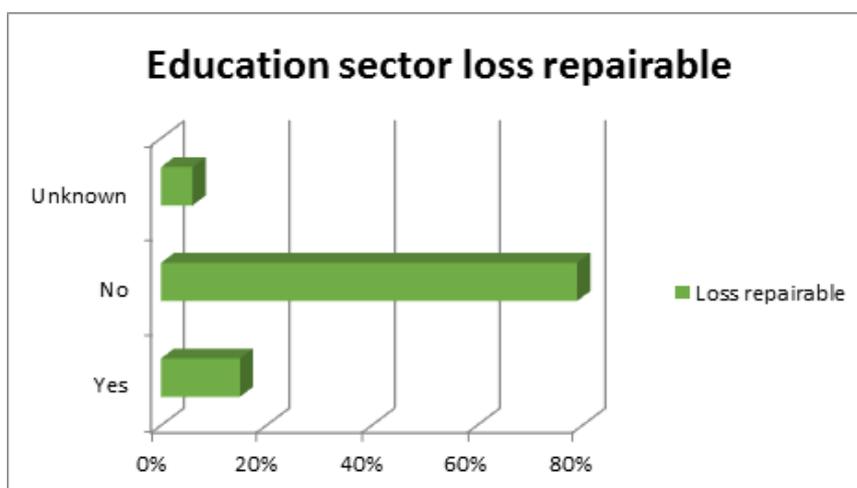
7. What was your monthly average cost in non-Covid-19 situation?



8. Do you support/enjoy DL?



9. Overall, do you think Covid-19 interrupt the education sector?



10. Do you think that this educational interruption is repairable?

Appendix 2: University website used for determining the number of students

| Serial | University Type | Websites |
|--------------------------------|---|---------------------------|
| 1. Private Universities | | |
| 1 | North South University | www.northsouth.edu |
| 2 | University of Science & Technology Chittagong | www.ustc.edu.bd |
| 3 | Independent University, Bangladesh | www.iub.edu.bd |
| 4 | Central Women's University | www.cwu.edu.bd |
| 5 | International University of Business Agriculture & Technology | www.iubat.edu |
| 6 | International Islamic University Chittagong | www.iiuc.ac.bd |
| 7 | Ahsanullah University of Science and Technology | www.aust.edu |
| 8 | American International University-Bangladesh | www.aiub.edu |
| 9 | East West University | www.ewubd.edu |
| 10 | University of Asia Pacific | www.uap-bd.edu |
| 11 | Gono Bishwabidyalay | www.gonouniversity.edu.bd |
| 12 | The People's University of Bangladesh | www.pub.ac.bd |
| 13 | Asian University of Bangladesh | www.aub.edu.bd |
| 14 | Dhaka International University | www.diu.ac |
| 15 | Manarat International University | www.manarat.ac.bd |
| 16 | BRAC University | www.bracu.ac.bd |
| 17 | Bangladesh University | www.bu.edu.bd |
| 18 | Leading University | www.lus.ac.bd |
| 19 | BGC Trust University Bangladesh | www.bgctub-edu.net |

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| 20 | Sylhet International University | www.siu.edu.bd |
| 21 | University of Development Alternative | www.uoda.edu.bd |
| 22 | Premier University | www.puc.ac.bd |
| 23 | Southeast University | www.seu.ac.bd |
| 24 | Daffodil International University | www.daffodilvarsity.edu.bd |
| 25 | Stamford University Bangladesh | www.stamforduniversity.edu.bd |
| 26 | State University of Bangladesh | www.sub.edu.bd |
| 27 | City University | www.cityuniversity.edu.bd |
| 28 | Prime University | www.primeuniversity.edu.bd |
| 29 | Northern University Bangladesh | www.nub.ac.bd |
| 30 | Southern University Bangladesh | www.southern.edu.bd |
| 31 | Green University of Bangladesh | www.green.edu.bd |
| 32 | Pundra University of Science & Technology | www.pundrouniversity.edu.bd |
| 33 | World University of Bangladesh | www.wub.edu.bd |
| 34 | Shanto-Mariam University of Creative Technology | www.smuct.edu.bd |
| 35 | The Millennium University | www.themillenniumuniversity.edu.bd |
| 36 | United International University | www.uiu.ac.bd |
| 37 | University of South Asia | www.southasia-uni.org |
| 38 | Eastern University | www.easternuni.edu.bd |
| 39 | Uttara University | www.uttarauniversity.edu.bd |
| 40 | Metropolitan University | www.metrouni.edu.bd |
| 41 | Victoria University of Bangladesh | www.vub.edu.bd |
| 42 | Bangladesh University of Business & Technology | www.bubt.ac.bd |
| 43 | Presidency University | www.presidency.edu.bd |
| 44 | University of Information Technology & Sciences | www.uits.edu.bd |
| 45 | Primeasia University | www.primeasia.edu.bd |
| 46 | Royal University of Dhaka | www.royal.edu.bd |
| 47 | University of Liberal Arts Bangladesh | www.ulab.edu.bd |
| 48 | Atish Dipankar University of Science & Technology | www.adust.edu.bd |
| 49 | Bangladesh Islami University | www.biu.ac.bd |
| 50 | ASA University Bangladesh | www.asaub.edu.bd |
| 51 | East Delta University | www.eastdelta.edu.bd |
| 52 | European University of Bangladesh | www.eub.edu.bd |
| 53 | Varendra University | www.vu.edu.bd |
| 54 | Hamdard University Bangladesh | www.hamdarduniversity.edu.bd |
| 55 | BGMEA University of Fashion & Technology(BUFT) | www.buft.edu.bd |
| 56 | North East University Bangladesh | www.neub.edu.bd |
| 57 | First Capital University of Bangladesh | www.fcub.edu.bd |
| 58 | Ishakha International University, Bangladesh | www.ishakha.edu.bd |
| 59 | Z.H Sikder University of Science & Technology | www.zhsust.edu.bd |
| 60 | Exim Bank Agricultural University, Bangladesh | www.ebaub.edu.bd |
| 61 | North Western University | www.nwu.edu.bd |
| 62 | Khwaja Yunus Ali University | www.kyau.edu.bd |
| 63 | Sonargaon University | www.su.edu.bd |
| 64 | Feni University | www.feniuniversity.edu.bd |
| 65 | Britannia University | www.britannia.ac |
| 66 | Port City International University | www.portcity.edu.bd |
| 67 | Bangladesh University of Health Sciences | www.buhs.ac.bd |
| 68 | Chittagong Independent University | www.ciu.edu.bd |
| 69 | Notre Dame University Bangladesh | www.ndub.edu.bd |

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| 70 | Times University, Bangladesh | http://www.timesuniversitybd.com |
| 71 | North Bengal International University | www.nbiu.edu.bd |
| 72 | Fareast International University | www.fiu.edu.bd |
| 73 | Rajshahi Science & Technology University (RSTU), Natore | www.rstu.edu.bd |
| 74 | Sheikh Fazilatunnesa Mujib University | www.sfmuniversity.org |
| 75 | Cox's Bazar International University | www.cbiu.ac.bd |
| 76 | Ranada Prasad Shaha University | www.rpsu.edu.bd |
| 77 | German University Bangladesh | www.gub.edu.bd |
| 78 | Global University Bangladesh | www.globaluniversity.edu.bd |
| 79 | CCN University of Science & Technology | www.ccnust.edu.bd |
| 80 | Bangladesh Army University of Science and Technology(BAUST), Saidpur | www.baust.edu.bd |
| 81 | Bangladesh Army University of Engineering and Technology (BAUET), Qadirabad | www.bauet.ac.bd |
| 82 | Bangladesh Army International University of Science & Technology(BAIUST), Comilla | www.baiust.edu.bd |
| 83 | The International University of Scholars | www.ius.edu.bd |
| 84 | Canadian University of Bangladesh | www.cub.edu.bd |
| 85 | N.P.I University of Bangladesh | www.npiub.edu.bd |
| 86 | Northern University of Business & Technology, Khulna | www.nubtkhulna.ac.bd |
| 87 | Rabindra Maitree University, Kushtia | |
| 88 | University of Creative Technology, Chittagong | |
| 89 | Central University of Science and Technology | |
| 90 | Tagore University of Creative Arts, Keranigonj, Bangladesh (Academic programs have not yet started) | |
| 91 | University of Global Village | www.ugv.edu.bd |
| 92 | Anwer Khan Modern University | www.akmu.edu.bd |
| 93 | Rupayan A.K.M Shamsuzzoha University (Academic programs have not yet started) | |
| 94 | Z.N.R.F. University of Management Sciences | www.zums.edu.bd |
| 95 | Bandarban University | www.bubban.edu.bd |
| 96 | International Standard University | www.isu.ac.bd |
| Serial | 2. Public University | |
| 1 | University of Dhaka | www.du.ac.bd |
| 2 | University of Rajshahi | www.ru.ac.bd |
| 3 | Bangladesh Agricultural University | www.bau.edu.bd |
| 4 | Bangladesh University of Engineering & Technology | www.buet.ac.bd |
| 5 | University of Chittagong | www.cu.ac.bd |
| 6 | Jahangirnagar University | www.juniv.edu |
| 7 | Islamic University | www.iu.ac.bd |
| 8 | Shahjalal University of Science & Technology | www.sust.edu |
| 9 | Khulna University | www.ku.ac.bd |
| 12 | Bangabandhu Sheikh Mujib Medical University | www.bsmmu.edu.bd |
| 13 | Bangabandhu Sheikh Mujibur Rahman Agricultural University | www.bsmrau.edu.bd |
| 14 | Hajee Mohammad Danesh Science & Technology University | www.hstu.ac.bd |
| 15 | Mawlana Bhashani Science & Technology University | www.mbstu.ac.bd |
| 16 | Patuakhali Science And Technology University | www.pstu.ac.bd |
| 17 | Sher-e-Bangla Agricultural University | www.sau.edu.bd |
| 18 | Chittagong University of Engineering & Technology | www.cuet.ac.bd |
| 19 | Rajshahi University of Engineering & Technology | www.ruet.ac.bd |
| 20 | Khulna University of Engineering and Technology | www.kuet.ac.bd |
| 21 | Dhaka University of Engineering & Technology | www.duet.ac.bd |
| 22 | Noakhali Science & Technology University | www.nstu.edu.bd |
| 23 | Jagannath University | www.jnu.ac.bd |

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| 24 | Comilla University | www.cou.ac.bd |
| 25 | Jatiya Kabi Kazi Nazrul Islam University | www.jkkniu.edu.bd |
| 26 | Chittagong Veterinary and Animal Sciences University | www.cvasu.ac.bd |
| 27 | Sylhet Agricultural University | www.sau.ac.bd |
| 28 | Jessore University of Science & Technology | www.just.edu.bd |
| 29 | Pabna University of Science and Technology | www.pust.ac.bd |
| 30 | Begum Rokeya University | www.brur.ac.bd |
| 31 | Bangladesh University of Professionals | www.bup.edu.bd |
| 32 | Bangabandhu Sheikh Mujibur Rahman Science & Technology University | www.bsmrstu.edu.bd |
| 33 | Bangladesh University of Textiles | www.butex.edu.bd |
| 34 | Barisal University | www.barisaluniv.edu.bd |
| 35 | Rangamati Science and Technology University | www.rmstu.edu.bd |
| 36 | Bangabandhu Sheikh Mujibur Rahman Maritime University | www.bsmrmu.edu.bd |
| 37 | Islamic Arabic University | www.iau.edu.bd |
| 40 | Rabindra University, Bangladesh | www.rubd.org |
| 41 | Bangabandhu Sheikh Mujibur Rahman Digital University | www.bdu.ac.bd |
| 42 | Sheikh Hasina University | https://shubd.net/ |
| 43 | Khulna Agricultural University | |
| 44 | Bangamata Sheikh Fojilatunnesa Mujib Science and Technology University | https://bsfmstu.ac.bd/ |
| | 3. National University | www.nu.edu.bd |
| | 4. Open University | www.bou.edu.bd |
| Category-wise students | | |
| | University Type | Total Students |
| | National University | 2788783 |
| | Public University | 818040 |
| | Open University | 333615 |
| | Private University | 361792 |
| Total Higher Education Students in Bangladesh | | 4302230 |
| Source: Authors' estimation | | |