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# Analyzing the Challenges of Implementing Online Classes in Developing Countries during COVID-19 Outbreak: A Perspective from Bangladesh

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***Abstract:*** *COVID-19 has posed a significant threat to the global education system. Rethinking alternative classes for continuing education is the central issue for coping with the new-normal system. The study aims to seek the preparedness and practicality of online education in developing countries from Bangladesh's perspective. The study examined primary data collected through a survey. In line with the descriptive analysis of the collected data, a logistic regression model has been applied to justify the hypotheses. Among sixteen variables, we have found seven variables that significantly impact the students' opinion regarding conducting classes in online. The findings show a positive association of lack of high internet speed, frequent disconnection issues during class time, mental stress about COVID-19, lack of engaging course contents, and deteriorating family financial condition with students' unwillingness towards online class during COVID-19.The study also revealed that students who have technical expertise in online classes are more interested in this type of class format. In this changing circumstance, online class format is an alternative channel to maintain the continuity in higher studies in Bangladesh. Thus the educational institutions can arrange training programs for teachers to improve the course contents. The institutions can also support the students by providing financial assistance for purchasing devices, internet data packages, guidelines for joining in online class and consulting to relieve mental stress. The government can also play a significant role by ensuring nationwide high-speed internet service and subsidy to purchase internet data for the students.*

***Keywords:*** *COVID-19, Education System, Online Education, E-learning, Distance Learning.*

## 1. Introduction

The buzzword 'Corona Virus' has unfolded many challenges to the world's century-old systems, including people's lifestyles, health, educational system, trade and businesses, industrial system, and so on. The virus's effect is so immense that it has led to the nationwide closures of many countries. Consequently, the global education system is also being affected. According to UNICEF monitoring, 129 countries of the world are ensuring nationwide closures, indicating that around 63.3% of the world's total enrolled students are being affected due to such closures. In Bangladesh, 36.79 million students from pre-primary to upper secondary levels and 3.15 million students enrolled in tertiary education face turbulence in education due to the closures of educational institutions (UNICEF, 2020).

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The impact of COVID-19 on global education can be described as destructive since many students are being deprived of education for a couple of months. UNESCO report shows this disruption in education has adverse impacts on students' lives and, consequently, society and the community. So, the countries deal with how the students can have required learning amid this prolonged lock-down scenario. As a concern, drastic changes in the educational system are required to make the education system vivid. Technology and ICT based education, mainly online education, is the most excellent solution to prominent trouble.

Online Education seems to have several advantageous and disadvantageous impacts in the application. The evolvement of the internet has created an endless horizon for distance learning. Kumar (2010) pointed out the pros of online education, describing it as convenient, less expensive, technology-driven, and beneficial. Many other studies also noted the positive parts of online learning, i.e., convenience, ease of participation, availability of blended courses (Fedynich, 2013).

Kumar (2010) identified some cons of distance learning: less social interaction, unequal technology cost, and questionable effectiveness of assessments and troublesome for the instructors. Lack of internet access and problems in mobile networks (David, 2020) lack of computer literacy and internet access (Fedynich, 2013) are also considerable negatively affecting issues regarding the feasibility of online education.

Crawford (2020) conducted desktop analysis on the higher education system of a total of twenty countries, including fourteen developing and six developed economies. Findings of the study show that developing countries tend to have differences regarding higher education, for instance, several universities keep their campuses open, while some others follow closures with no online learning facility, and some of the universities ensure fully online classes to halt semester gap. Contrarily, almost all of the developed countries i.e., such as Australia, Germany, Italy, Ireland, the United Kingdom, and the United States of America, have their campuses closed and transformed the learning mostly online and consequently expecting no semester loss of the enrolled students. The technological infrastructure, the student's and teachers' attitudes, and a comprehensive online education framework are the critical requirements for online learning. However, many developing countries have incompetence and discrepancies to ensure the factors.

Although the benefits of cyber-learning overrule the drawbacks and become an optimum solution for learning in this age of Pandemic, the effectiveness of the implementation of this technology-focused education system in developing countries is still a matter of rethink and judgment due to several challenges and constraints. The study leads to unveiling the appropriateness of online learning in higher studies in Bangladesh during the COVID-19 outbreak.

### 1.1 Objectives of the Study

The study aims to analyze the problems of implementing online classes in developing countries like Bangladesh during the COVID-19 outbreak. This study uncovers the facts of online learning in Bangladesh that aggregates some recognizable issues and challenges to embrace web-based learning systems in the country.

## 2. Literature Review

The outbreak of COVID-19 worldwide has been destroying millions of peoples' lives while threatening the world's traditional living system. The temporary lock-down has been chosen as the best alternative to suppress the worlds now fear 'Coronavirus' clutch. The nationwide lock-down approaches lead to educational institutions' closures, which disrupts the class-based educational system and lingers the enrolment periods of the students of all levels. In this unpredictable crisis, new media and new approaches to education are required to help the system go undisrupted, and consequently, many universities of the world are procuring their services online. This study focuses on how developing countries, specifically Bangladesh, are approaching the online-based education system and the challenges related to the implementation of online classes

The online platform for learning has emerged as a new and convenient medium to sustain the educational system's ground because of the universities' prolonged closedown. A flexible learning system, including online learning, which has evolved as a great alternative to face to face teacher-based education system, is a great option to combat the current education disruption to the global education community (Huang, 2020). Huang (2020) suggests that governments and educational institutions can ensure essential online educational information, replenish standardized instructions to teachers and learners regarding distance learning, and yield online training and research.

Online and remote learning has become necessary to carry on distance learning and ICT based education (Ali, 2020). Online teaching transformation concerning the traditional educational system has been a technically feasible, safe, asynchronous, and convenient approach to solving the educational system's crisis during this lock-down period (Sund, 2020). The study suggested that the construction of study materials online is similar to those of traditional classrooms, and the materials may contain textbooks, supplementary readings like articles, news parts, PDFs, etc. short span slides, videos, exercises, and case analysis. Structuring materials has also been discussed in the study in light of the SCATE model i.e., Scope, Content, Activities, Thinking and Extra (Edwards, 2012), by emphasizing creating subdivisions of chapters or units based on the learning period i.e., weekly.

Due to the breakthrough of the education system caused by COVID-19 virus, many countries of the world are pursuing an effort to continue teaching and learning through alternative channels,

mostly online. Online Education seems to have pros and cons affecting its efficacy during this Pandemic in different countries. The major factors include availability and adaptability of technology, availability of internet connection and cost of internet, students' perception and acceptability of online learning, teachers' perception and methods for online teaching etc. Availability of online learning devices such as computers or mobile phones and internet connection are basic online education requirements (Emmungil, 2008) and (Pathak, 2020).

Developed countries are well-equipped with built-up technology systems, and the shift of the education system on the web-based platform has just been an easy task. However, many developing countries tend not to fully ensure online education due to lack of technological infrastructure and some other constraints like high rates of students from lower-income families not being able to purchase the internet and devices for online education. Some studies have gathered evidence in this respect, such as lack of adequate internet bandwidth and electric devices, lower participation due to isolation and less interaction in online classes (Surkhali, 2020) in Nepal, the poor internet connection of rural students, lack of teacher's positive attitude and literacy for online teaching in Malaysia (Dealwis, 2020), lack of internet connectivity in rural areas and lack of 4G compatibility for live streaming online classes in urban areas of India (Harsha, 2020), lack of affordability to buy high-speed internet by the students from underprivileged families, lack of interpersonal relationship, insecurity of personal data over the internet (Jena, 2020).

As per BTRC's data for March 2020, the total number of internet subscribers now stands at 103.253 million. Of them, 95.168 million are mobile internet users, 8.084 million are broadband internet (Alam, 2021). The statistics show a low penetration rate of internet users in the country, which is a potential barrier to the students choosing online education. An analysis of students' perception and preference for online classes in India proves that students prefer online classes during the institutions' closures, but internet connectivity issues in rural areas pose significant threats to online classes (Muthuprasad, 2020). Unequal possession and access to technology, i.e., smartphones or laptops, and affordability to technology, i.e., purchasing internet, cause prime threats and gaps to the persistence of students' online education (Indiana University, 2018).

Bao (2020) explained that the sudden transformation of the traditional teaching system to an online-based system had caused several challenges to the faculty members, including lack of online teaching experience, lack of early preparation and technology support as well as the students' lack of an attitude towards education specifically at home due to lack of study materials or appropriate environment. The students' adaptability with this new phase of learning is another factor that is required to be examined for the plan and implementation of online classes in developing countries. Adaptability to online courses is also affected by the students' attributes like age, gender, the students' origin, prior academic performance, and the subject areas or courses (Xu, 2013).

The literature exhibits that web-based learning or online education is a great means of education in the days of prolonged educational institutions' closures. Although developed countries of the world have been capitalizing the online system for safeguarding their education system uninterrupted, developing countries are still to have the pace of analyzing the feasibility of applying the technology-based education system. There is a lack of research regarding the pros and cons of applying for online education in Bangladesh. Additionally, primary data based analysis in this field is also rare in the context of Bangladesh. This study aims to discover Bangladesh's preparedness to implement online learning for higher education based on primary data analysis.

## 3. Online Education in Bangladesh

The academic institutions in Bangladesh are experiencing long term closure due to the fear of the COVID-19 Pandemic. The secondary and higher secondary institutions remain entirely in shut down position. Public universities in the country have decided to suspend their activities altogether while private universities can continue their running semester of Spring 2020. However, many students and their parents are against the idea of resuming class through online platforms. Their main argument was lack of continuous stable internet connections, lack of proper devices, cost of data, family financial condition, mental stress, and others. On the other hand, a small portion of students and teachers of several universities argued on behalf of adopting e-learning approaches.

In an online seminar arranged by the Center on Budget and policy, the speakers opined that arranging online classes for 7.5 lakh students could cost around Tk. 10,000 crores. The Government can arrange this allocation and demanded a reduction in internet usage charges. They also pledged that education loans can be introduced for students. Public universities will have to sign a memorandum of understanding with any bank with the central bank; banks' corporate social responsibility programs will help the education sector. Other speakers of that seminar opined that students should be provided with free internet facilities plus mobile handsets and laptops, and they called for increasing the budget allocation in this sector (the business standard, 2020).

BioTED, a novel training and research initiative, has conducted a study on 42 private and public universities, and they found that only 23% of the students were in favor of taking online classes in this situation, while the rest 77% opposed the idea. Only 55.3% of the students have access to laptops, PCs, or tablets to attend an online class. It shows us that 44.7% of the students cannot attend online classes due to lack of logistics. The most critical factor for online classes is internet connectivity, and our survey revealed that 55% of the students are not supported by proper internet connections to continue with online education. They also revealed that 40% of the students are already attending online classes, among whom the majority (70%) are from Private Universities (Banglatribune, 2020).

Dhaka University is reluctant to go online class system thinking of the inconvenience of the students. Some teachers express their opinion about taking academic activities online as the university is closed due to the Corona outbreak, but not everyone from remote areas thinks that equal participation is possible in online platforms. The university's top authorities expressed their concern about the student's family's financial condition, access to a healthy life style, social distancing, mental state, and ability to buy internet and compatible device during this COVID outbreak to continue online class (Banglatribune, 2020).

The main argument against online class in developing countries is the lack of proper internet connection with stable speed. Even if they can attend classes, the experience is extremely inefficient because they have trouble following the lecture. After all, the network breaks down frequently, not able to communicate appropriately with the teachers. This problem worsens for the students who have visited or resided in the village during Pandemic due to poor internet connection. Online classes also discourage class participation because most of the students do not own a laptop or computers. It is not possible to do assignments and tasks in a smartphone. In this situation, students cannot use cyber cafes or fix their computers if there is a malfunction. Students are also expressed their opinion that online classes are not the same as in-person classes because it is less engaging than standard cases. The concern gets even worse when conducting online exams, quizzes, presentations, or any graded activity through online platforms. Students from engineering backgrounds are also concerned about the way they are being taught online. They faced difficulty understanding equations and doing math online because not all the course instructors are using whiteboards. Many students also have concerns regarding the mental pressure, such classes and exams are putting on the students during a global pandemic (Megha, 2020).

However, another group of students concerned about the semester's length favors adopting the online class system, but they are against taking exams online. Faculty members said that online connectivity is that it does not require much logistics. Some universities have been helping students by buying mobile internet packages for them, so they do not have to go outside. In practical terms, online classes may become a regular thing, given how the situation has been unfolding. It is essential to get it right and make sure no students are left behind (Megha, 2020).

## 4. Methods

This section is mainly divided into six sub-sections. Focus is given to the target groups, sampling techniques, data collection, and data analysis techniques.

### *4.1 Target Group*

The data are solely collected from the primary source. Students of eight different Private Universities with the same academic background (BBA= Bachelor of Business Administration) and continued Spring 2020 semester have been considered the target population to collect required data.

### *4.2 Instruments Used in Data Collection*

The online Google Form questionnaire has been used to collect information from the students of different Private Universities to adopt an online learning approach during COVID- 19 outbreak.

### *4.3 Data Collection*

A questionnaire was administered to the students that collected primary data on several aspects directly related to online education. Such as prior experience of online class, technical expertise, type of device and internet connection used, internet speed, duration of class, mental stress level, the attractiveness of the course contents, and the socio-economic condition of the family. Based on this data, concluding remarks has been drawn either it is the right time to adopt online learning during the coronavirus outbreak without considering the required infrastructure.

### *4.4 Sample Size*

There are around fifteen thousand students currently studying in Bachelor of Business Administration in twelve different Private Universities of Bangladesh. Among them, we have selected four hundred and nine students as a sample. The sample is consistently collected from all the universities in proportion to studying students at each university.

$$\text{Sample Size} = \frac{\frac{z^2 * P(1-P)}{e^2} \quad \frac{z^2 * P(1-P)}{e^2}}{1+\left(\frac{z^2*(1-P)}{e^2*N}\right) \; 1+\left(\frac{z^2*(1-P)}{e^2*N}\right)}$$

$$= \frac{\frac{1.96^2 * .5(1-.5)}{.05^2} \quad \frac{1.96^2 * .5(1-.5)}{.05^2}}{1+\left(\frac{1.96^2*(1-.05)}{.05^2*15000}\right) \; 1+\left(\frac{1.96^2*(1-.05)}{.05^2*15000}\right)}$$

$$= 375$$

### *4.5 Techniques of Data Analysis*

This study took the efforts to explore the influencing factors that work as a catalyst to adopting online learning in an educational institution, especially in the undergraduate level in developing economies. Descriptive analysis (e.g., frequency and percentage) was used in this study to find out the most influencing factors. The five-point Likert scale was used in this study to assess the students' opinions on the infrastructural and socio-economic aspects. Students were asked to provide their opinion in five statements, which strongly agree (SA), Agree (A), neutral (N), disagree (DA) and strongly disagree (SDA).

One of the study's prime objectives was to measure whether students are wholeheartedly supporting the decision to adopt online learning. The binary logistic regression is an appropriate technique when the dependent variable is dichotomous (Mahmud et al., 2014b). In this study,

binary logistic regression was used because the dependent variable "decision on adopting online learning" had two categories. "It is high time to adopt online learning" was coded as "one" and "It is not high time to adopt online learning" was coded as "zero". The researchers also used logistic regression to assess respondents' opinions on various socio-economic issues such as financial and social empowerment and food security status (Weber, 2014; Mahmud et al., 2014).

$$\left[\frac{P_i}{1-P_i}\right] = A_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + b_{12}X_{12} + b_{13}X_{13} + b_{14}X_{14} + b_{15}X_{15} + b_{16}X_{16}$$

Where,

$P_i$ = It is high time to adopt online learning

$1 - P_i$ =It is not high time to adopt online learning

$X_1$ = Students attended in online class before Pandemic

$X_2$= Students having technical expertise in the online class

$X_3$= Device used in attending class

$X_4$= Type of Internet used by the students

$X_5$= Status of living location during Lockdown

$X_6$= Internet speed received during class time

$X_7$= Software used in online classes

$X_8$ = Duration of class time

$X_9$ = Students facing disconnection issue during class time

$X_{10}$= Level of mental health during lock-down

$X_{11}$= Well prepared course instructors

$X_{12}$= Attractive course contents

$X_{13}$= Comfort in submitting tasks and assignments

$X_{14}$= Percentage of online class attendance

$X_{15}$= perception about cost of attending online class

$X_{16}$= Financial condition of family during lock-down

## 5. Analysis and Results

### *5.1 Descriptive statistics*

The descriptive statistics table shows that among 409 students, 74% of students have had no experience of online classes before the pandemic, and only 16% had technical expertise in participating in online classes. As of December 2020, Bangladesh's mobile phone penetration

rate is 54% (the number of unique users is nine crore among 17 crore subscribers), whereas only 41% use smartphones (GSMA, 2020).

**Table-01: Opinion of the students about the challenges of implementing online classes**

| Variable Name | Category | Responses | |
|---|---|---|---|
| | | **Number** | **Percentage** |
| Students attended an online class before Pandemic | Yes | 106 | 25.92 |
| | No | 303 | 74.8 |
| Students having technical expertise in online class | Yes | 342 | 83.62 |
| | No | 67 | 16.38 |
| Device used in attending class | Laptop | 63 | 15.40 |
| | Desktop | 7 | 1.71 |
| | Smartphone | 334 | 81.66 |
| | Tablet | 5 | 1.22 |
| Type of Internet used by the students | Mobile data | 275 | 67.24 |
| | Broadband | 112 | 27.38 |
| | Public WIFI | 18 | 4.40 |
| | Others | 4 | |
| Status of living location during lockdown | Dhaka Metro | 120 | 29.34 |
| | City Corporation | 62 | 15.16 |
| | Remote areas | 56 | 13.69 |
| | Union Parisad | 115 | 28.12 |
| | Pourasava | 56 | 13.69 |
| Internet speed received during class time | Less than 1MBPS | 259 | 63.33 |
| | 1MBPS to 4MBPS | 118 | 28.85 |
| | More than 4 MBPS | 32 | 7.83 |
| Software used in online classes | Google classroom | 236 | 57.70 |
| | Zoom | 123 | 30.07 |
| | Skypee | 37 | 9.05 |
| | Facebook messenger | 13 | 3.18 |
| Duration of class time | One hour plus | 217 | 53.06 |
| | Sixty minutes | 58 | 14.18 |
| | Forty minutes | 91 | 22.25 |
| | Thirty minutes | 43 | 10.51 |

| | | | |
|---|---|---|---|
| Students facing disconnection issue during class time | Strongly Agree (SA) | 205 | 50.12 |
| | Agree (A) | 60 | 14.67 |
| | Neutral (N) | 31 | 7.58 |
| | Disagree (D) | 94 | 22.98 |
| | Strongly Disagree (SD) | 19 | 4.65 |
| Level of mental health during lock-down | Strongly Agree (SA) | 246 | 60.15 |
| | Agree (A) | 78 | 19.07 |
| | Neutral (N) | 47 | 11.49 |
| | Disagree (D) | 28 | 6.85 |
| | Strongly Disagree (SD) | 10 | 2.44 |
| Well prepared course instructors | Strongly Agree | 6 | 1.47 |
| | Agree (A) | 53 | 12.96 |
| | Neutral (N) | 119 | 29.10 |
| | Disagree (D) | 104 | 25.43 |
| | Strongly Disagree (SD) | 127 | 31.05 |
| Attractive course contents | Strongly Agree (SA) | 2 | 0.49 |
| | Agree (A) | 14 | 3.42 |
| | Neutral (N) | 51 | 12.47 |
| | Disagree (D) | 110 | 26.89 |
| | Strongly Disagree (SD) | 232 | 56.72 |
| Opinion about submitting tasks in online | Strongly Agree (SA) | 33 | 8.07 |
| | Agree (A) | 3 | 0.73 |
| | Neutral (N) | 61 | 14.91 |
| | Disagree (D) | 125 | 30.56 |
| | Strongly Disagree (SD) | 187 | 45.72 |
| Opinion about submitting tasks in online | Strongly Agree (SA) | 33 | 8.07 |
| | Agree (A) | 3 | 0.73 |
| | Neutral (N) | 61 | 14.91 |
| | Disagree (D) | 125 | 30.56 |
| | Strongly Disagree (SD) | 187 | 45.72 |

| | | | |
|---|---|---|---|
| Percentage of online class attendance | 90-100% | 30 | 7.33 |
| | 70-89 % | 56 | 13.69 |
| | 50-69% | 60 | 14.67 |
| | 30-49% | 70 | 17.11 |
| | Less than 30% | 193 | 47.19 |
| Perception about cost of attending online class | Expensive | 237 | 57.95 |
| | Not expensive | 172 | 42.05 |
| Financial condition of family during lockdown | Good | 56 | 13.69 |
| | Moderate | 38 | 9.29 |
| | Deteriorated | 315 | 77.02 |
| Right time to adopt online learning | Yes | 34 | 8.31 |
| | No | 375 | 91.69 |

A vast majority (82%) of the students have been dependent on smartphone devices for class participation, and the use of mobile data is preferred among the participants (67%) over other networks. Approximately one-third of the participants were staying at the capital city and the same proportion of them was in the villages while participating the survey.

In case of internet connection issues, half of the participants agreed that they had faced disconnection in the network during class and more than sixty percentage have an internet connection with lower than 1 MB per second, which states some major barriers for effective online classes. According to a report by Ookla (2021), in terms of mobile internet speed, Bangladesh stands 135th among 137 countries and in terms of Broadband internet speed Bangladesh is ranked 98th among 181 countries over the world. The facts transparently visualize the respondent's challenges for participation in online classes.

Besides, many of the students strongly agreed on having mental pressure and strongly disagreed on having trained teachers or attractive class materials. A major determinant of participation in online class can bear the expenses of internet connection whereby 237 students among 409, have opined that the online class participation has been expensive for them because more than 91% of students faced deterioration in their family income level. More than 90% of the students suggested that the pandemic is not the right time to participate in online classes.

### 5.2 *Factors determining the readiness of adopting online Education during COVID-19 Pandemic*

In this section, focuses are given for which students are in favor or in against of the continuing online classes during this Pandemic. Based on the findings, this study will assist the stakeholders in improving the online class system's environment.

This study shows that students who have technical knowledge about participating in online classes are very keen to join in online classes. So the educational institutions can launch some training programs for the students about how they will join in an online class as the institutions recommend it. This technical expertise related to the online class has a higher probability of 66% of the online class decisions.

In our findings we have seen that students who are residing in remote areas are against the decision to take online classes. As a result, most of them are deprived of high-speed internet and computer lab from their institutions. As lock-down starts, they have left the city.

Another significant finding of this study is that students who have received low internet speed are declined to join in the online class format. Majority of them are using mobile data joining in the online class. Even though, majority of the students received less than 1mbps internet speed. Though in Bangladesh 4G internet has been launched, it has yet to reach all parts of the country.

Another related finding of this study is the disconnection issue while students are in a virtual class. Generally, online classes are conducted through video conference style that consumes heavy data and requires high-speed internet. Students who have faced several disconnection issues in a single class are also discouraged from joining in the online class. This issue is also a significant matter to look at while deciding on taking an online class.

This study also reveals an important issue that is the state of the mental health of the students. Students have never been experienced such type of Pandemic before. There is a strong evidence that, students are mentally stressed and unwilling to participate in online classes.

**Table-02: Factors determining the readiness of adopting online Education during COVID-19 Pandemic**

| Variables | Coefficient | Level of Significance | Odds Ratio | Probability |
|---|---|---|---|---|
| Constant | 6.829 | 0.015 | 924.166 | |
| Students attended an online class before Pandemic (dummy) | 0.664 | 0.243 | 1.942 | |
| Students having technical expertise in online class (dummy) | 1.287 | 0.025 | 1.942 | 0.660 |
| Device used in attending class (dummy) | 0.101 | 0.731 | 1.106 | |
| Type of Internet used by the students (dummy) | 0.155 | 0.696 | 1.168 | |
| Status of living location during Lockdown (dummy) | -0.606 | 0.014 | 0.546 | 0.353 |
| Internet speed received during class time (dummy) | 0.982 | 0.033 | 0.745 | 0.427 |

| | | | | |
|---|---|---|---|---|
| Software used in online classes (dummy) | 0.139 | 0.606 | 1.149 | |
| Duration of class time (dummy) | -0.290 | 0.120 | 0.748 | |
| Students facing disconnection issue during class time (dummy) | -0.319 | 0.016 | 0.727 | 0.421 |
| level of mental health during lock-down (Likert scale) | -0.296 | 0.027 | 0.744 | 0.427 |
| Well prepared course instructors (Likert scale) | -0.652 | 0.304 | 0.521 | |
| Attractive course contents (Likert scale) | -0.778 | 0.023 | 0.459 | 0.315 |
| Opinion about submitting tasks in online (Likert scale) | -0.065 | 0.766 | 0.937 | |
| percentage of online class attendance (dummy) | 0.165 | 0.419 | 1.179 | |
| perception about cost of attending online class (dummy) | 0.983 | 0.490 | 2.672 | |
| Financial condition of family during lockdown (dummy) | -0.349 | 0.047 | 0.706 | 0.414 |
| Pseudo R2 = 0.5074 | | | | |

Another significant finding of this study is the course contents as the course instructors are highly skilled from home and abroad. To some extent, this online class format is very much new for them.

There is a negative association between students opinion about high time to adopt online classes and course contents. Though the teachers have high academic and research excellence, they are not well prepared in designing their course contents that are usable in an online class format. It is expected that course instructors should use digital content to deliver their lectures.

We have also found a negative association between students' perception about attending in online class and their financial condition. As lock-down started, economic activities have been halted for a while. Though it is considered a medical crisis, this contagious disease also hits on the family's earnings. Students who used to do part-time jobs to bear the cost of tuition fees; now jobless.

## 6. Major Findings

- ❖ Students who have technical knowledge about how to join in online classes are very keen to adopt online class format.
- ❖ Students who are residing in remote areas are against the decision to take online classes.

- Students who have received low internet speed are declined to join in the online class.
- Students who have faced several disconnection issues in a single class are also discouraged from joining in the online class.
- Students who are mentally stressed, they are unwilling to join in the online class format.
- Students have found online course contents are not engaging.
- A negative association has been found between students' perception about attending in online class and their family's financial condition during lockdown.

## 7. Recommendations

This study has found some recommendations based on analysis that could help the concerned stakeholders involved with the country's education sector, including the Government.

- Like educational institutions and Government, the concerned authority should arrange training programs to take online classes and design course materials.
- Provide students technical know-how through video tutorials on how they can use the online content to make their learning process effective.
- Government and educational institutions should instigate or take a unique scheme to afford such devices like computers or smartphones in easy loans or subsidies.
- The Government should pay special attention on internet data consumed by the students. The Government can free a certain amount of data consumption daily to attend in the online class. Recently, the Malaysia government freed 1 GB of data daily for their students so that students do not think about the costs of attending online classes (Yeoh, 2021).
- True 4G internet speed must be ensured in all parts of the country to avoid disconnection issue.
- Several TV and online programs can be telecast on improving the state of mental health during a pandemic, like indoor exercises etc.
- Students should be informed about the benefits of joining in online classes to avoid session jam to timely completion of their academic calendar.
- The performance evaluation system should be synchronized, which could be convenient for the students and the course instructor.
- The government and institutions should extend their helping hand to those who are in financial hardship. Educational institutions should waive tuition fees for a tolerable percentage and extend payment duration during this Corona Virus Crisis.

- Government should make an immediate action plan on how to reopen the educational institutions during this pandemic situation, and
- Lastly, parents should motivate their children to cope with this pandemic situation and extend support in favor of online classes.

## Concluding Remarks

The number of Death recorded till June 2020 in Bangladesh was 1738, and the total number of infected persons with COVID-19 is around 1, 38,000. Considering the bitter reality, it is difficult to adopt online learning in Bangladesh, and the reality has been reflected in this study. This study is one of the earliest studies since the pandemic has started. As a result, we got little opportunity to compare our findings with other relevant studies. A few studies were done in Bangladesh, where the only descriptive study was done. They did not follow any specific model. Our study is a new addition in this segment from the perspective of Bangladesh. This study determined the first-hand experiences and opinions regarding online classes in Bangladesh using the logit model, which is extensively used to analyze qualitative data.

Our study shows that lack of proper internet speed, devices, cost of mobile data, family's financial condition, and the students' mental health are the main challenges in implementing online classes. Students who live in urban areas with expertise in attending online classes are more enthusiastic about the online class format. The study's findings will be greatly helpful for the university authorities, UGC, government, and other stakeholders to address the challenging areas and make a better plan for online classes. This study covered only the opinion of the students of private universities in Bangladesh. The opinion of publicly-owned university students has been completely ignored as public universities did not go in an online class format. Due to time and resource constraints, only ten business schools have been selected for data collection. Government and institutional assistance could improve the limitations and bring a larger cluster of students under online learning. The dilemma is whether the authority should keep pace with the world in terms of education or fight with the unseen COVID-19.

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