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USER ATTITUDE TOWARDS PREFERENCE OF E-LEARNING IN BANGLADESH

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ABSTRACT

Information and Communication Technology (ICT) is crucial in facilitating the teaching and learning process in the current educational setting during COVID-19. In this context, the global demand for the integration of ICT in Education has rapidly increased. During the COVID-19 pandemic, e-learning gained widespread popularity as people remained indoors for health and safety reasons. This situation led to a rapid increase in positive attitudes toward e-learning. This study investigates the factors influencing students' attitudes toward e-learning and examines whether this Attitude impacts their Preference for e-learning. Utilizing survey data from 400 respondents collected between January and March 2024, this research employs a purposive sampling approach with questionnaires measuring awareness of e-learning, e-learning education facilities, benefits, costs, attitudes, and preferences, all on a five-point Likert scale. Factor analysis categorizes the data into six factors, which are then validated using Cronbach's alpha in IBM SPSS Statistics 26. A structural equation model (SEM) is developed in IBM SPSS AMOS 22 to analyze the Preference for e-learning education based on attitudes and their associated factors, further validated through convergent and discriminant validity. The results reveal that e-learning facilities and benefits positively influence attitudes towards e-learning, while the Cost of e-learning negatively impacts these attitudes. However, awareness of e-learning only significantly affects attitudes. A positive attitude towards e-learning significantly enhances the Preference for e-learning education. The findings of this study highlight the critical role of perceived benefits and cost considerations in shaping student attitudes and preferences for e-learning education.

INTRODUCTION

The education system, which traditionally relied on the triangular relationship between school, instructor, and student, has increasingly embraced new, diverse, and multi-channel options facilitated by technological advancements. One of them is referred to as "online learning". Online Education is a flexible means of delivering learning materials encompassing all online learning types. Online learning allows instructors to engage with students who cannot partake in a conventional classroom curriculum and assist students who want to study alone and at their own pace. The prevalence of distance learning and online degrees is substantial, and they are experiencing tremendous growth across several disciplines. Furthermore, there is a burgeoning proliferation of educational establishments and organizations that provide opportunities for remote learning through online platforms. Students pursuing online degrees must exercise caution to verify their coursework is completed through a recognized and certified institution. Amidst the COVID-19 pandemic, Information and Communication Technology (ICT) is crucial in facilitating the teaching and learning process in the current educational setting. Hence, it is now essential to integrate ICT into schooling. The global demand for online courses through the integration of ICT in

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Education has rapidly increased in this context. The international landscape has continuously transformed since the onset of the COVID-19 (Coronavirus) epidemic in Wuhan, China. Over time, COVID-19 began to impact countries worldwide, and on 08 March 2020, the virus was detected in Bangladesh, causing widespread fear among the population. Despite initial concerns from educational institutions on the continuity of academic activities during the epidemic, the education sector has gradually transitioned to an internet platform. Around 70% of graduate and undergraduate students actively engage in online teaching and learning, most of whom use smartphones. Online Education has gained significant traction in industrialized nations, with professors and students embracing it as a credible form of Education. This is mainly attributed to the exceptional instructional standards and the accessibility offered by online platforms. Insufficient resources and many constraints make it challenging for students in underdeveloped nations like Bangladesh to adjust to online Education, which is still a relatively new type of instruction. Following the COVID-19 pandemic, the Bangladesh government implemented many measures to facilitate the widespread adoption of online Education across all levels of the education system. Due to its recent implementation in Bangladesh, students face several challenges in Online Education, such as limited technical support, insufficient access to devices and the Internet, bad network connectivity, and expensive Internet packages. Consequently, these obstacles impact students' motivation to engage in online learning. A significant number of studies have been conducted on the attitudes of instructors. However, more research needs to be done on students' Attitudes to online learning in Bangladesh, spanning primary, secondary, and higher education levels. Therefore, the research aims to fill in the knowledge gap. As the concept is new in the context of Bangladesh, it requires a rigorous study, keeping in mind the demands of the stakeholders. E-learning requires many issues to be settled to gain full benefits. The facility gaps necessary to be consulted in the studies we consulted are to be identified. So, there is a research gap that needs to be minimized to make e-learning effective by mitigating the demands of the users and developing the infrastructure. An empirical study is undertaken to reduce the gap that may be utilized in policy decisions and implementation to popularise e-learning education in the digitalization of smart Bangladesh. The study aims to help formulate educational policy by determining the factors affecting the user's (student) attitude toward e-learning. Additionally, whether this Attitude plays any role in the Preference for e-learning has also been tested (Faisal-E-Alam, 2024).

The remainder of the paper is structured as follows. The second section provides a brief literature review and provides the hypotheses, while the data and methods are defined in the third section. The fourth section analyses the findings and presents the discussion. In the final section, the conclusion includes the key findings, managerial implications and drawbacks of the study, and recommended lines for future inquiry.

LITERATURE REVIEW

Sanders and Morrison-Shetlar (2001) investigated undergraduate students' perceptions of a biology course's web-based learning elements. The results influenced students' critical thinking abilities, problem-solving aptitude, and learning outcomes. Rhema and Miliszewska (2014) examined the viewpoints and observations of students on the use of technology for learning at two universities in Libya. The study examined the impact of demographic variables, technological exposure, and proficiency in using learning technology, technical abilities, and contentment with technology on students' attitudes. The results indicated that demographic factors, including student locality, gender discrepancies, current year of enrolment, and age, did not influence students' attitudes toward e-learning. Students who had been exposed to technology were more inclined towards e-learning. Students' technological proficiency has a significant role in shaping their attitudes towards e-learning.

Teachers have a pivotal role in educational settings, and their comprehension of e-learning impacts students' disposition towards e-learning. Krishnakumar and Rajesh (2011) evaluated the disposition of higher education instructors towards e-learning. The study findings indicated a cheerful disposition. There were differences in the approach between technologically proficient instructors and technologically unskilled teachers. Alsaaty et al. (2016) examined business students' perceptions of conventional and online higher education learning. The survey revealed that 30.2% of students find the materials provided in online classrooms to be accessible, simple to use, and comprehend. Conversely, 69.2% of students expressed discomfort with the online materials due to their perceived lack of ease.

Yang and Cornelius (2004) conducted a qualitative research study with three participants. Their objective was to identify the determinants for assuring the quality of online teaching and learning in higher Education. Both positive and negative feedback were identified throughout their investigation. The students expressed their positive experiences regarding flexibility, cost-effectiveness, access to electrical research, ease of internet connectivity, and well-designed class interface. Conversely, the negative feedback included delayed instructor feedback, unresponsive technical support, insufficient self-regulation and motivation, feelings of isolation, unengaging instructional methods, and inadequately designed course content.

Islam et al. (2021) studied the perspective of tertiary-level students in Bangladesh toward online classrooms during the COVID-19 epidemic. They aimed to enhance the quality and acceptance of online classes in the future. The assessment of students' perceptions has been conducted across many categories. Using the snowball sampling approach, six hundred seventy-seven students participated in the online survey. The study revealed that 84.19% of the participants were enrolled in private universities, and 75.2% utilized smartphones to attend online classes. Approximately 38.8% of students rely on expensive cellphone data.

In his qualitative study, Naomee (2023) examines the perspectives of University of Dhaka students on this novel approach to Education and its impact on their lives. The discovery indicates that the primary difficulties pertain to infrastructural circumstances, economic circumstances, mental wellness, and the interaction between teachers and students. This study also examines potential resolutions for these obstacles and methods to integrate online or blended education systems into the higher education system of Bangladesh. Rahman et al. (2023) conducted a study on the perspective of

online Education among higher secondary students in Bangladesh during the COVID-19 pandemic. The objective is to discover the elements that influence their attitudes. The research is quantitative. Data from 1078 students were collected via an online survey employing a multistage random sampling method. The findings indicate that three key aspects, namely the obstacles and complexities associated with online learning, the efficacy of online Education, and students' motivation, significantly influence students' perceptions of online learning.

The data obtained from 699 participants were analyzed using the SPSS 23 program. The study's findings will enable educational institutions and policymakers to advance the online learning process in a forward-looking manner—the survey conducted by Haque (2023) aims to determine the instructors' attitudes toward online classrooms and the problems they encountered while giving these sessions. The inquiry utilized a mixed-method approach, collecting data through surveys and in-depth interviews. The research findings indicate unanimous agreement among teachers on the indispensability of online classes, particularly in a pandemic such as COVID-19.

Sarkar et al. (2021) researched to investigate the opinions of public university students in Bangladesh about online classes during the COVID-19 epidemic. An online survey was conducted to gather data from students at Islamic University, Kushtia, Bangladesh. The study employed a quantitative methodology, utilizing the survey technique as a means of data collection. The findings indicated that most students had challenges actively engaging in virtual classrooms and experienced difficulties communicating effectively with their peers during online sessions. Gurung et al. (2022) conducted a study to examine the elements and beliefs that impact instructors' inclination to utilize online classroom software for online teaching. The study employed a descriptive cross-sectional survey involving 227 instructors teaching online throughout the pandemic. The results indicated a favorable view of teaching online through online platforms. The study results suggest that elements such as training and administrative support, trust, digital literacy, online teaching competence, and perceived security significantly impact the desire to utilize online classroom applications.

Afroz et al. (2021) conducted an assessment of the attitudes of students and instructors about transitioning to a fully online learning environment in response to COVID-19. The primary aim of the study was to examine the perspectives of students and teachers on online Education in Bangladeshi Government Colleges during the COVID-19 pandemic. The findings indicated that the online learning experience was frequently praised for its Cost and time-effectiveness, safety, convenience, and improved participation. However, it was also commonly criticized for causing distraction. It reduced focus, having a heavy workload, encountering problems with technology and the Internet, lacking ICT knowledge, facing poor network infrastructure, having limited availability of educational resources, experiencing low attendance of learners, dealing with uncooperative learners, and receiving insufficient support from instructors and colleagues.

The study conducted by Ahmed et al. (2022) investigated the Attitude towards Online Teacher Education Courses (OTEC). This survey was conducted among the teacher educators and trainee teachers of Bangladesh Open University. The study employed a mixed research strategy, utilizing triangulation, which involved conducting a descriptive survey, two focus group discussions (FGDs), and one key person's interview. A total of 602 teacher trainees (182 M.Ed. students and 420 B.Ed. students) and 12 teacher educators were included in the study. The participants were recruited using diverse sampling procedures. This research enhances the existing knowledge base by conducting an exploratory survey of all relevant stakeholders throughout the nation of interest.

The study aims to determine the factors that affect the user's (student) attitude toward e-learning. Another study objective is to determine whether this Attitude plays a vital role in the Preference for e-learning. The following hypotheses have been developed based on the literature review and the above discussion. Then the conceptual model of the study is depicted in figure 1.

Hypothesis H1: User awareness substantially affects user's e-learning attitude.
Hypothesis H2: Available e-learning facilities lead to forming a positive e-learning attitude.
Hypothesis H3: Users' perceived benefits positively affect their e-learning attitude.
Hypothesis H4: User cost hurts e-Learning attitude.
Hypothesis H5: There is a positive effect of e-learning attitude on Preference for e-learning.

Conceptual Framework

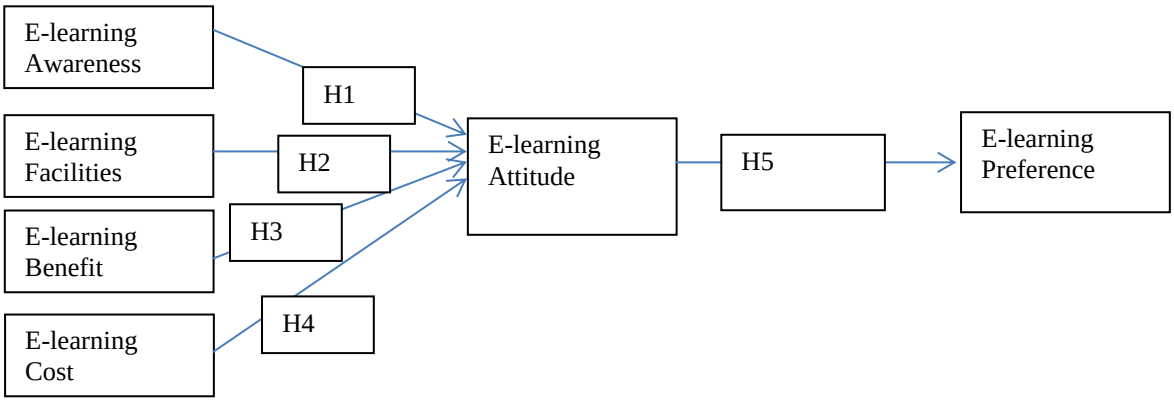

Figure 1. Conceptual Model

MATERIALS AND METHODS

An exploratory approach was followed to determine the Preference for E-learning by collecting data from the major stakeholders. The methodology mediates between research questions and data and relates the collected data to the desired outputs. The research was conducted by collecting primary data. Data were coded and analyzed using statistical tools after collecting data from the respondents. Sampling is a procedure in which a small number of items from a large number are chosen. A sample is a subset or a piece of a population that has been selected. The goal of employing sampling is to make it easier for a small number of people to estimate some known features of a population.

The survey questionnaire was pre-tested with 20 experienced respondents. After necessary modifications and corrections, the survey questionnaire (Appendix A) was distributed to 500 respondents selected by a purposive sampling approach. From the collected response data, 400 responses were finally selected (which covers a confidence level of 95%, margin of error of 5%, and population proportion of 50% with unlimited population size), as some respondents answered all the questions the same rank and did not answer many questions. Among the valid respondents, 262 (65.5%) are male, and 138 (34.5%) are female respondents, from which 142 (35.5%) studied in Business Administration faculty, 104 (26.0%) studied in Science and Engineering faculty, 90 (22.5%) studied in Social Science faculty and 64 (16.0%) studied in Law faculty. The collected response questionnaire data are classified into six categories using factor analysis: user (student) Attitude of e-learning, e-learning awareness, e-learning facility, e-learning benefit, e-learning cost, and Preference of e-learning education and validated by Cronbach's alpha (IBM SPSS Statistics 26). Based on the above classification, a structure equation model (SEM) is developed in IBM SPSS AMOS 22 for the Preference of e-learning education from its Attitude of e-learning with its factors and validated with convergent and discriminant validity. Finally, all the hypotheses are tested, and the necessary conclusion is reached.

RESULTS AND DISCUSSIONS

Descriptive Statistics of Respondents

The descriptive statistics (N, Min, Max, Median) and normality test (Kolmogorov– Smirnov Test and Shapiro–Wilk Test) of the respondent values for awareness toward e-Learning, e-Learning education facility, benefit of e-Learning education, Cost of e-Learning education, Attitude of e-Learning education and Preference of e-Learning education are shown in Table 1.

Table 1**.** Descriptive statistics and normality test result

Sl. No.	Questionnaire	Variable name	N	Min	Max	Kolmogorov–Smirnov Test (Sig)	Shapiro–Wilk Test (Sig)	Median
1.	**Awareness toward e-Learning**							
1. (a)	Are you acquainted and involved with e-Learning	Awareness1	400	1	5	0.208 (0.000)	0.909 (0.000)	3
1. (b)	e-Learning is web-based learning education based on electronically	Awareness2	400	1	5	0.205 (0.000)	0.887 (0.000)	3
1. (c)	e-learning is a blended approaches that integrate online components into traditional classes	Awareness3	400	1	5	0.333 (0.000)	0.758 (0.000)	4
1. (d)	Understanding e-learning examples, explanations, assessments, and exercises	Awareness4	400	1	5	0.217 (0.000)	0.907 (0.000)	3
2.	**e-Learning education facility**							
2. (a)	Internet facility for e-Learning	Facility1	400	1	5	0.307 (0.000)	0.845 (0.000)	4
2. (b)	Computer, laptop, modem, etc. facility	Facility2	400	1	5	0.298 (0.000)	0.851 (0.000)	4
2. (c)	Access to the requisite technology	Facility3	400	1	5	0.277 (0.000)	0.865 (0.000)	4
2. (d)	Instructors' Attitude towards Online Education	Facility4	400	1	5	0.297 (0.000)	0.853 (0.000)	4
3.	**Benefits of e-Learning education**							
3. (a)	e-Learning education is flexible 24/7	Benefit1	400	1	5	0.309 (0.000)	0.769 (0.000)	4
3. (b)	No communication barrier	Benefit2	400	1	5	0.313 (0.000)	0.772 (0.000)	4
3. (c)	Convenient for submitting their assignment	Benefit3	400	1	5	0.294 (0.000)	0.804 (0.000)	4
3. (d)	Students can easily discuss views with classmate	Benefit4	400	1	5	0.297 (0.000)	0.798 (0.000)	4
4.	**Cost of e-Learning education**							
4. (a)	The Cost of the e-Learning method is higher than the traditional method	Cost1	400	1	5	0.312 (0.000)	0.792 (0.000)	2
4. (b)	E-learning is more costly with electronic reading material	Cost2	400	1	5	0.289 (0.000)	0.808 (0.000)	2
4. (c)	E-learning is a standardized way to deliver content	Cost3	400	1	5	0.290 (0.000)	0.810 (0.000)	2
4. (d)	E-learning is highly costly for sharing knowledge and experience	Cost4	400	1	5	0.310 (0.000)	0.805 (0.000)	2
5.	**Attitude to e-learning education**							
5. (a)	Are you interested in an e-Learning system	Attitude1	400	1	5	0.338 (0.000)	0.820 (0.000)	4
5. (b)	e-Learning feel more comfortable	Attitude2	400	1	5	0.367 (0.000)	0.777 (0.000)	4
5. (c)	e-Learning feels more effective	Attitude3	400	1	5	0.319 (0.000)	0.839 (0.000)	4
5. (d)	E-learning can be used with learning exercises that allow learners to apply	Attitude4	400	1	5	0.341 (0.000)	0.810 (0.000)	4

	concepts realistically							
6.	**Preference for e-Learning education**							
6. (a)	Preferred online for distance learning system	Preference1	400	1	5	0.335 (0.000)	0.821 (0.000)	4
6. (b)	Resources are available in e-Learning	Preference2	400	1	5	0.363 (0.000)	0.787 (0.000)	4
6. (c)	Teaching methods are sufficient for e-Learning	Preference3	400	1	5	0.369 (0.000)	0.780 (0.000)	4
6. (d)	Online Education is more interactive	Preference4	400	1	5	0.358 (0.000)	0.799 (0.000)	4

Each item's minimum and maximum values for the response variables on a five-point Likert scale are 1 and 5, respectively. The Kolmogorov– Smirnov test statistic and Shapiro–Wilk test statistic values of each item for awareness toward e-learning is 0.205 to 0.333 and 0.758 to 0.909; e-Learning education facility is 0.277 to 0.307 and 0.845 to 0.865, the benefit of e-Learning education is 0.294 to 0.313 and 0.769 to 0.804, Cost of e-Learning education is 0.289 to 0.312 and 0.792 to 0.810, Attitude of e-Learning education is 0.319 to 0.367 and 0.777 to 0.839and Preference of e-Learning is 0.335 to 0.369 and 0.780 to 0.821 respectively at the significance level 0.000. So, the survey response values are not normally distributed, and in this case, median values are considered for mean rank comparison in the non-parametric test. The median values of each item for awareness toward e-Learning are 3 and 4; the e-Learning education facility is 4, the benefit of e-Learning education is 4, the Cost of e-Learning education is 2, the Attitude of e-Learning education is four, and the Preference of e-Learning is four respectively.

Factor Analysis

In the factor analysis, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy value is 0.794 (p = 0.000). So, we can apply the factor analysis method to divide the questionnaire response values into different factors (Table 2).

Table 2. Factor analysis, Cronbach's Alpha, and Convergent Validity test result

Rotated Component Matrix									
	Component						**Cronbach's Alpha**	**Convergent Validity (AVE)**	**Square Root of AVE**
	1	**2**	**3**	**4**	**5**	**6**			
Facility2	0.959								
Facility1	0.957						0.985	0.941	0.970
Facility4	0.941								
Facility3	0.928								
Attitude2		0.871							
Attitude4		0.858					0.911	0.676	0.822
Attitude1		0.824							
Attitude3		0.822							
Preference3			0.867						
Preference1			0.863				0.902	0.705	0.840
Preference2			0.845						
Preference4			0.823						
Cost3				0.848					
Cost2				0.846			0.923	0.700	0.837
Cost1				0.834					
Cost4				0.823					
Benefit4					0.883				
Benefit3					0.867		0.853	0.602	0.776
Benefit2					0.714				
Benefit1					0.658				
Awareness1						0.937			
Awareness4						0.926	0.844	0.621	0.788
Awareness2						0.728			
Awareness3						0.689			
Extraction Method: Principal Component Analysis.									
Rotation Method: Varimax with Kaiser Normalization.									

From the above factor analysis table, the survey response values are classified into six-factor variables such as learning education facility (factor leading 0.928 to 0.959), Attitude of e-learning education (factor leading 0.822 to 0.871), Preference of e-learning (factor leading 0.823 to 0.867), Cost of e-Learning education (factor leading 0.823 to 0.848), benefit of e-Learning education (factor leading 0.658 to 0.883) and awareness toward e-Learning (factor leading 0.689 to 0.937) respectively. Here, all factor loadings are more significant than 0.400, which indicates that all measurements for each factor are reliable.

The Cronbach's Alpha value of each factor variable learning education facility is 0.985, the Attitude toward e-learning education is 0.911, the Preference for e-learning is 0.902, the Cost of e-learning education is 0.923, the benefit of e-learning education is 0.853 and awareness toward e-Learning is 0.844, respectively (all the Cronbach's Alpha values are >0.7). This indicates that the survey response with the following factors is reliable, valid, and consistent.

Now, from the above factor analysis, the factor variables are defined by (1) Awareness toward e-learning is identified as (a) Are you acquainted and involved with e-Learning (Awareness1), (b) e-Learning is the web-based learning education based on the electronic (Awareness2), (c) e-learning is blended approaches that integrate online components into traditional classes (Awareness3) and (d) Understanding e-learning examples, explanations, assessments and exercises

(Awareness4). (2) e-learning education facility is identified as (a) Internet facility for e-Learning (Facility1), (b) Computer, laptop, modem, etc. facility (Facility2), (c) Access to the requisite technology (Facility3), and (d) Instructors attitude towards online Education (Facility4). (3) Benefit of e-Learning education is identified as (a) e-Learning education is flexible 24/7 (Benefity1), (b) No communication barrier (Benefit2), (c) Convenient for submitting their assignment (Benefit3), and (d) Students can discuss easily views with classmate (Benefit4). (4) The Cost of e-Learning education is identified as (a) the Cost of the e-Learning method is higher than the traditional method (Cost1), (b) e-Learning is more costly with electronic reading material (Cost2), (c) e-learning is a standardized way to deliver content (Cost3) and (d) e-Learning is higher costly for sharing knowledge and experience (Cost4). (5) Attitude of e-learning education is identified as (a) Are you interested in the e-Learning system (Attitude1), (b) e-Learning feel more comfortable (Attitude2), (c) e-Learning feel more effective (Attitude3) and (d) e-Learning can be used with learning exercises that allow learners to apply concepts realistically (Attitude4). (6) Preference for e-learning education is identified as (a) Preferred online for distance learning system (Preference1), (b) Resources are available in e-Learning (Preference2), (c) Teaching methods are sufficient for e-Learning (Preference3) and (d) Online Education is more interactive (Preference4).

Based on the above factor analysis result, a structural equation model of the Attitude of e-learning education from awareness toward e-learning, e-learning education facility, benefit of e-learning education, and Cost of e-learning education to Preference of e-learning education is developed (Figure 2).

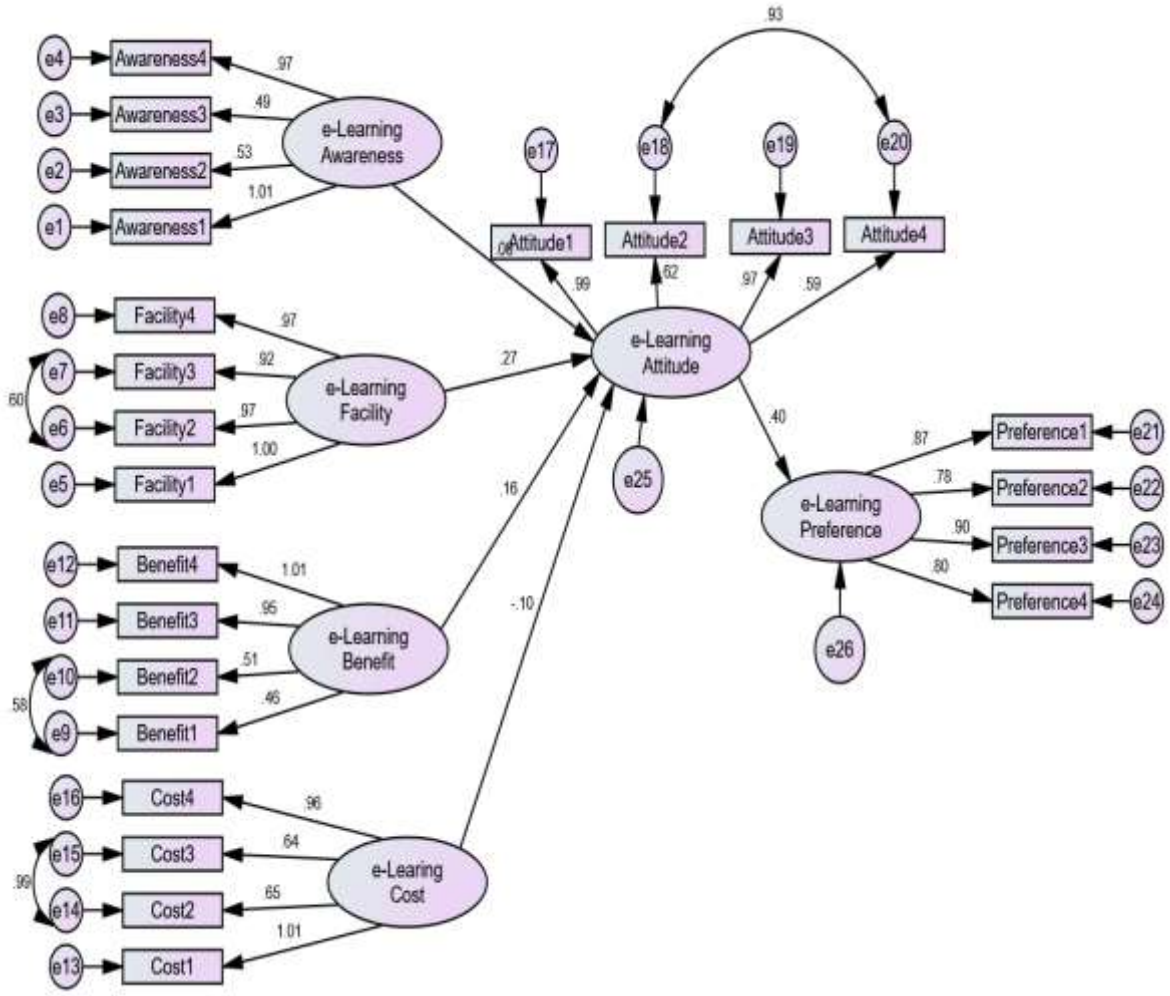

Figure 2. Structure Equation Model

According to the above structural equation model, the standardized regression weights for awareness toward e-learning are 0.49 to 1.01; e-learning education facility is 0.92 to 1.00; the benefit of e-learning education is 0.46 to 1.01, Cost of e-learning education is 0.64 to 1.01, Attitude of e-Learning education is 0.59 to 0.99andpreference of e-Learning education is 0.78 to 0.90 respectively (which are nearly between –1 to 1). Each factor loading is exceptionally high and statistically significant ($p < 0.05$). The covariance values between e6 and e7is 0.60, e9 and e10 are 0.58, e14 and e15 are 0.99, and e18 and e20 are 0.93 in the model and are also significant ($p < 0.05$).

In the selected model, the model index values observed as $\chi 2/df$ is 2.321 (which is < 3), comparative fit index (CFI) value is 0.975 (which is > 0.9), incremental fit index (IFI) is 0.975 (which is > 0.9), Tucker Lewis index (TLI) is 0.972 (which is > 0.9), normed fit index (NFI) is 0.957 (which is > 0.9) and Root Mean Square Error of Approximation is 0.058 (which is < 0.08). Here, the model index values fulfill all of the standard requirements of the survey, and hence, the selected model fits well. Now, to validate the model-chosen average variance expected (AVE) to test convergent validity (Table 2).

The average variance expected (AVE) to test convergent validity (from Table 2) for awareness toward e-Learning is 0.621; e-Learning education facility is 0.941; benefit of e-Learning education is 0.602; Cost of e-Learning education is 0.700; Attitude of e-Learning education is 0.676 and Preference of e-Learning is 0.705 respectively. Here, all the AVE values are more significant than 0.5, which indicates that the model has achieved convergent validity.

Table 3. Discriminant validity and path coefficient result

Correlation			**Estimate MSV**	**Path Co-efficient**			**Estimate**	**P**
Awareness	<-->	Attitude	0.004	Attitude	<---	Awareness	0.002	.957
Facility	<-->	Attitude	0.319	Attitude	<---	Facility	0.233	***
Benefit	<-->	Attitude	0.270	Attitude	<---	Benefit	0.457	***
Cost	<-->	Attitude	– 0.252	Attitude	<---	Cost	– 0.099	.028
Attitude	<-->	Preference	0.403	Preference	<---	Attitude	0.439	***

To test the discriminant validity, the maximum shared variance (MSV) of Awareness and Attitude is 0.004 (from Table 3), which is less than the square root of AVE for Awareness (0.788) and the square root of AVE for Attitude (0.822). Again, the maximum shared variance (MSV) of Facility and Attitude is 0.319 (from Table 3), which is less than the square root of AVE for Facility (0.970) and the square root of AVE for Attitude (0.822). Also, the maximum shared variance (MSV) of Benefit and Attitude is 0.270 (from Table 3), which is less than the square root of AVE for Benefit (0.776) and the square root of AVE for Attitude (0.822). Again, the maximum shared variance (MSV) of Cost and Attitude is – 0.252 (from Table 3), which is less than the square root of AVE for Cost (0.837) and the square root of AVE for Attitude (0.822). Moreover, the maximum shared variance (MSV) of Attitude and Preference is 0.403 (from Table 3), which is less than the square root of AVE for Attitude (0.837) and the square root of AVE for Preference (0.822). So, the selected model has achieved discriminant validity.

Hypothesis Testing

In the structure equation model, the regression weight (path coefficient) of awareness toward e-learning to the Attitude toward e-learning education is 0.002 ($p = 0.957$). So, the awareness of e-learning has no significant contribution to the Attitude toward e-learning education (as the p-value is more critical than 0.05) practice in Bangladesh. So, there is insufficient evidence to reject the null hypothesis H1 for awareness of e-learning and the Attitude toward e-learning education. As a result, e-learning awareness contributes little to e-learning education's Attitude.

In the structure equation model, the regression weight (path coefficient) of the e-learning education facility to the Attitude of e-learning education is 0.233 ($p = 0.000$). So, the e-learning education facility significantly contributes to the Attitude of e-learning education (as the p-value is less than 0.05) practice in Bangladesh. So, the null hypothesis H2 is rejected for e-learning education facilities compared to the Attitude of e-learning education. As a result, e-learning education facilities should contribute positively to e-learning education's Attitude.

In the structure equation model, the regression weight (path coefficient) of e-learning education's benefit to e-learning education's Attitude is 0.457 ($p = 0.000$). So, the benefit of e-learning education significantly positively contributes to the Attitude of e-learning education (as the p-value is less than 0.05) practice in Bangladesh. So, the null hypothesis H3 is rejected for the benefit of e-learning education to the Attitude of e-learning education. As a result, the benefit of e-learning education contributes positively to the Attitude of e-learning education.

In the structure equation model, the regression weight (path coefficient) of the Cost of e-learning education to the Attitude of e-learning education is – 0.099 ($p = 0.028$). So, the Cost of e-learning education significantly negatively contributes to the Attitude of e-learning education (as the p-value is less than 0.05) practice in Bangladesh. So, the null hypothesis H4 is rejected for the Cost of e-learning education to the Attitude of e-learning education. As a result, the Cost of e-learning education should contribute negatively to the Attitude of e-learning education.

In the structure equation model, the regression weight (path coefficient) of the Attitude of e-learning education to the Preference for e-learning education is 0.439 ($p = 0.000$). So, the Attitude toward e-learning education has a significant positive contribution to the reference of e-learning education (as the p-value is less than 0.05) practice in Bangladesh. So, the null hypothesis H5 is rejected for an attitude of e-learning education to the Preference of e-learning education. As a result, the Attitude toward e-learning education should contribute positively to the Preference for e-learning education.

CONCLUSIONS

The study results show that e-learning education facilities and the benefits of e-learning positively affect the user's Attitude toward e-learning education. Besides that, the study reveals that the Cost of e-learning education negatively impacts the user's Attitude. However, awareness doesn't have any influence on e-learning. The user attitude toward e-learning also contributes to the Preference for e-learning education. Finally, this study reveals that e-learning facilities, benefits, and costs significantly impact user attitudes towards e-learning, where facility and benefit have a positive effect, and Cost hurts e-learning attitudes. Simultaneously, awareness does not substantially affect the form of Attitude. Finally, e-learning attitudes significantly formed e-learning preferences. Although there are many advantages, students have different opinions and attitudes towards this modern learning process. This study was designed to examine students' attitudes towards e-learning. The result suggests that the government may pay attention to infrastructural development like Internet connection, High Bandwidth, and Data security to promote positive Attitudes in students, which will help integrate e-learning into the educational process. The study could have contributed better if government agencies had been incorporated as respondents,

which is one of the significant limitations. Further research will use qualitative techniques applied to small sample users using or using an e-learning system. The aim will be to identify problems that appear in the use of IT & C for e-learning.

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APPENDICES

Appendix A: User attitude towards Preference of e-Learning in Bangladesh

The respondents' information will be kept confidential and used only for research purposes.
Questionnaire

Name						
Faculty	**Business Studies**	**Science and Engineering**	**Social Science**		**Law**	
Gender	Male			Female		
	Questionnaire	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
1.	Awareness toward e-Learning					

1a	Are you acquainted and involved with e-Learning?
1b	e-Learning is web-based learning education based on electronically
1c	e-learning is a blended approaches that integrate online components into traditional classes
1d	Understanding e-learning examples, explanations, assessments and exercises
2.	e-Learning education facility
2a	Internet facility for e-Learning
2b	Computer, laptop, modem etc. facility
2c	Access to the requisite technology
2d	Instructors Attitude towards online Education
3.	Benefits of E-learning Education
3a	e-Learning education is flexible 24/7
3b	No communication barrier
3c	Convenient for submitting their assignment
3d	Students can easily discuss views with classmates.
4.	Cost of e-Learning education
4a	The Cost of the e-Learning method is higher than that of the traditional method.
4b	E-learning is more costly with electronic reading material.
4c	E-learning is a standardized way to deliver content.
4d	E-learning is highly costly for sharing knowledge and experience.
5.	Attitude to e-learning education
5a	Are you interested in an e-learning system?
5b	e-Learning feel more comfortable
5c	e-Learning feels more effective
5d	E-learning can be used with exercises that allow learners to apply concepts realistically.
6.	Preference for e-Learning education
6a	Preferred online for distance learning system
6b	Resources are available in e-Learning.
6c	Teaching methods are sufficient for e-Learning.
6d	Online Education is more interactive.

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