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STUDENT SATISFACTION AND RETENTION: IMPACT OF SERVICE QUALITY AND DIGITAL TRANSFORMATION

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Abstract: *A country's economic and technological development in the twenty-first century depends heavily on higher education. Similar to other countries, the majority of higher education institutions in Bangladesh are private universities that offer educational services alongside public (government-funded) universities. This study aims to investigate how service quality dimensions and digital transformation influence student satisfaction and student retention in private universities in Bangladesh. Data were acquired from a convenient sample, including students from the top five private universities in Bangladesh, through a self-administered questionnaire survey. The questionnaire was completed by 210 of the 235 students who were asked to participate. Each questionnaire was carefully examined. 200 were determined to be appropriate for this study. A conceptual model of eight factors, including the five dimensions of the SERVQUAL model, digital transformation, student satisfaction, and student retention, was framed and tested. Descriptive statistics (mean and standard deviation), multiple regression, and bivariate regression analyses were conducted using SPSS 26.0 to test the hypothesized relations. According to the findings of descriptive data, students are satisfied with the quality of private university services and digital transformation activities. This study reveals that all the service quality dimensions positively and significantly impact student satisfaction except the empathy dimension. It is also found that digital transformation substantially influences student satisfaction. Furthermore, student satisfaction has a positive and significant influence on student retention. To the best of the authors' knowledge, this is the first initiative to investigate the impact of service quality dimensions and digital transformation on student satisfaction and student retention in the context of private universities in Bangladesh. This study contributes to higher education institutions for the improvement of service quality dimensions and the digital transformation to obtain student satisfaction and student retention in highly competitive educational sectors. Finally, this work argues that digital transformation in higher education is necessary for survival and growth in the twenty-first century.*

Keywords: tangibles, reliability, responsiveness, assurance, reliability, empathy, and higher education.

JEL Classification: I20, I23, I24, M31, M39, O33

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Introduction. Education is the backbone of a nation. In the 21st century, education, especially higher education, plays a critical role in a country's socioeconomic and technological development. There are three types of education in Bangladesh: primary, secondary, and higher (Directorate of Secondary and Higher Education, 2018). Since 1990, Bangladesh's government has emphasized primary education more (Rose et al., 2014). At present, almost all districts and villages have primary schools, colleges, and madrasa institutions to ensure primary and secondary education (Directorate of Secondary and Higher Education, 2018). In Bangladesh, higher education was once considered a luxury (Kalam and Mahonta, 2017). Thus, the Bangladesh government has taken various promising steps to increase student enrollment in higher education. In this regard, the Government of the People's Republic of Bangladesh (GOB) has already started to establish a state-funded university in every district. In Bangladesh, student politics and session jams are a common problem in almost all public universities. Many students go to foreign countries yearly to pursue higher education (Hossain et al., 2014). Nevertheless, the demand for private universities is steadily increasing, resulting in 109 private universities in Bangladesh (University Grants Commission of Bangladesh, 2022). The capital city, Dhaka, is home to most private universities. With the approval of the GOB and the University Grants Commission, private universities provide a variety of certificate courses and degrees (such as Bachelor's degrees, Master's degrees, and Diplomas). These private institutions rely entirely on student fees to operate. Students are customers in education who interact with institution facilitators to get services or goods (Kitchroen, 2004). It should be satisfactory to the learners as a service. As a result, guaranteeing student satisfaction has become critical to their survival. All service sectors are very concerned about measuring and controlling service quality (SQ) to retain their consumers for capturing lifetime values (Kotler and Keller, 2021; Parasuraman et al., 1988). To measure SQ, SERVQUAL is a widely accepted model offered by Parasuraman et al. (1988) comprising five dimensions: tangibility, responsiveness, assurance, reliability, and empathy. Moreover, there is a growing trend for digitalizing education services in the higher education sector, which expedites the 4th Industrial Revolution. Xiao (2019) mentioned that digital transformation in education services ensures lifelong learning for students who can communicate with faculty members or university staff anytime from anywhere, overcoming the limitations of conventional education services.

Most studies have been undertaken to measure SQ in numerous industries, ranging from hotels to airlines. Still, only a few studies have been conducted in the education sector focusing more specifically on the influence of SQ on student satisfaction (SS) (Chandra, et al., 2019; Annamdevula and Bellamkonda, 2016; Khoo and McGregor, 2017; Mansori et al., 2014; Duarte et al., 2012), and student satisfaction on student retention (Long, et al., 2021; Chandra, et al. 2019, Azam, 2018; Weerasinghe and Fernando, 2018; Subrahmanyam & Shekhar, 2017; Inch and Sun, 2013; Sembiring, 2013; Helgesen and Nettet, 2011; Asree et al., 2010). Furthermore, to the best of the authors' knowledge, no research was carried out examining the impact of digital transformation on SS in the context of private universities in Bangladesh. Therefore, this study aims to assess how the service quality dimensions and digital transformation influence student satisfaction and student retention (SR) in private universities in Bangladesh, which will plug the existing research gap. The study addresses the following research questions to accomplish the aforementioned research objective:

1. Do SERVQUAL dimensions influence student satisfaction in private universities in Bangladesh?
2. Does digital transformation influence student satisfaction in private universities in Bangladesh?
3. Does student satisfaction influence student retention in private universities in Bangladesh?

The paper is structured as follows. Firstly, the study provides a review of related literature underpinning the study, which leads to hypotheses development and conceptual framework formulation. Secondly, the research methodology is described, followed by the research findings. Lastly, the discussion, implications, conclusion, limitations, and proposals for future research are discussed.

Literature Review. Service is an action that is intangibly offered for sale in the marketplace (Kotler and Keller, 2021). Adinegara and Putra (2016) stated that higher education institutions run in the service industry where delivering quality services can create a competitive advantage over others. Successful survival in the education sector depends on providing quality educational services (Zhu and Sharp, 2022, Islam and Salma, 2016). But it is challenging to provide standard and quality services to the students because there is no agreed-upon opinion regarding the standard of service quality (Sibai, 2021; Teeroovengadum et al., 2019). SQ in higher education institutions has been defined in different literature from various perspectives. A well-known and most acceptable service quality model known as SERVQUAL is widely used in higher education for assessing the quality of education services (Aboubakr and Bayoumy, 2022; Sydorov and Salnikova, 2021; Goumairi et al., 2020; Chandra et al. 2019, Prakash, 2018; Saliba and Zoran, 2018). SERVQUAL model is a multidimensional instrument offered by Parasuraman et al. (1988) that encompasses five dimensions,

including tangibles, reliability, responsiveness, assurance, and empathy. The tangibles dimension refers to physical aspects such as physical facilities, medical equipment, and personnel appearance.

The reliability dimension is related to the capacity of the university to deliver guaranteed service to students dependably and accurately. The responsiveness dimension shows the university's enthusiasm to deliver prompt education services to the students on time. On the other hand, the assurance dimension of service quality measures employees' skills, knowledge, politeness, and capability to encourage trustworthiness, credibility, and uprightness in delivering education services. Lastly, the empathy dimension refers to the individualized caring attitude toward students and assesses university teachers' and staff's capability to listen, recognize, and solve students' issues swiftly (Parasuraman et al., 1988). Satisfaction derives from the perfect tie of expectation and actual performance of products and services (Kotler and Keller, 2021). In the education field, students have been mostly acknowledged as the key customers (Yusof et al., 2022; DOAN, 2021). Thus, the triumph of a higher educational institution relies on student satisfaction (Singh and Jasial, 2021). Student satisfaction is a passionate response to the services received from the university (Subrahmanyam, 2017). Student satisfaction comes from the students' assessment of the educational atmosphere and their real experience. Students will be highly satisfied when a student's expectations and actual performance in an educational institution match well. Consequently, satisfied students become the best advertisement for the university (Kotler and Keller, 2021; Pham et al., 2019; Martha-Martha and Priyono, 2018). Due to the fierce rivalry in the marketplace, service quality has become the key focus of attention for many scholars. It is directly connected to customer satisfaction (Mulyono, 2020). Annamdevula and Bellamkonda (2016) stated that service quality substantially impacts student satisfaction. Alsheyadi and Albalushi (2020) conducted a study on measuring student satisfaction via the SERVQUAL model and found that tangibles, reliability, assurance, responsiveness, and empathy dimensions significantly directly affect student satisfaction. Al-Haddad et al. (2018) suggested that assurance, reliability, and empathy are significant predictors of student satisfaction. Eresia-Eke et al. (2020) affirmed that service quality dimensions and student satisfaction are positively correlated. Likewise, Marlina et al. (2022) found that the studied service quality dimension positively affects student satisfaction. Furthermore, Agrawal et al. (2022) recommended that perceived service quality is significantly and positively correlated to student satisfaction. Hence, the following hypotheses are suggested accordingly:

H1: Tangibles of private universities have a significant influence on student satisfaction.

H2: Responsiveness of private university staff and teachers significantly influences student satisfaction.

H3: Reliability of private university educational services significantly influences student satisfaction.

H4: Assurance of private university teachers and staff significantly influences student satisfaction.

H5: The empathy of private university teachers and staff significantly influences student satisfaction.

Digital transformation (DT) is the use of information and innovative technology to transform different aspects of an organization, including creating new business models, changing the way things are done now, and improving customer service (Gong and Ribiere, 2021). Regardless of the nation, digitalization is essential, practically, in all higher education institutions. For the changing environment, like the Covid-19 pandemic (Decuypere et al., 2021; Bygstad et al., 2022; Sousa et al., 2022), education institutions are adopting digital tools and techniques, which is transforming everything from the learning process (Frolova et al., 2020) to the management in education institution (Balyer and Oz, 2018). Digital transformation in the education sector means the modernization of education services with digital tools and techniques in a systematic way (Frolova et al., 2020). The trendy young generation is addicted to the internet, which drives exposure to all the education services like notices, lecture notes, lecture recordings, results, tuition fee payment, advising, and library service via digital tools. So, universities are experimenting with different communication technologies to boost student engagement as part of digital transformation (Santos et al., 2019). Younas et al. (2022) found that the introduction of various technology applications in education positively impacts student satisfaction. By embracing the digital transformation, universities can enhance their internal capacities, create long-term competitive advantages (Mohamed Hashim et al., 2022), and ultimately increase student satisfaction (Al Natour and Woo, 2021; Perez-Lopez et al., 2020; Van Vu et al., 2022). From the above discussion, the following hypothesis can be posited:

H6: Digital transformation has a positive impact on student satisfaction.

Student retention is a major issue in higher education (Bowden et al., 2021). The academic industry has found that retaining students is a challenging endeavor (Kerby, 2015). As students are part of product development in an education service environment (Jurkowitsch et al., 2006), they are less inclined to put up with unfavorable or poor services. Institutions that fail to ensure student retention jeopardize their reputation (Kelmendi and Nawar, 2016), financial gain, and possibly survival (Eresia-Eke et al., 2020). Thus, higher

education institutions must retain their students to achieve their goals (Ruth, 2015). Student satisfaction is the core part of retaining students in the education sector (Rahman et al., 2012). Danjuma and Rasli (2012) mentioned that satisfaction is a necessary component of customer attachment, which leads to student retention. Cownie (2019) confirmed that augmented student experiences improve student retention. The higher the student satisfaction, the higher the student retention in higher education institutions (Eresia-Eke et al., 2020). Swani et al. (2022) affirmed that student retention is the outcome of student satisfaction. Likewise, Al Hassani and Wilkins (2022) stated that student satisfaction enhances student retention in higher education institutions. Furthermore, satisfaction has a positive influence on the retention of customers irrespective of industry (Chen and Cuong, 2020). Based on the above discussion, the following hypothesis is proposed accordingly:

H7: Student satisfaction has a significant influence on student retention.

The conceptual model (Figure 1) derived from the literature mentioned above is as follows:

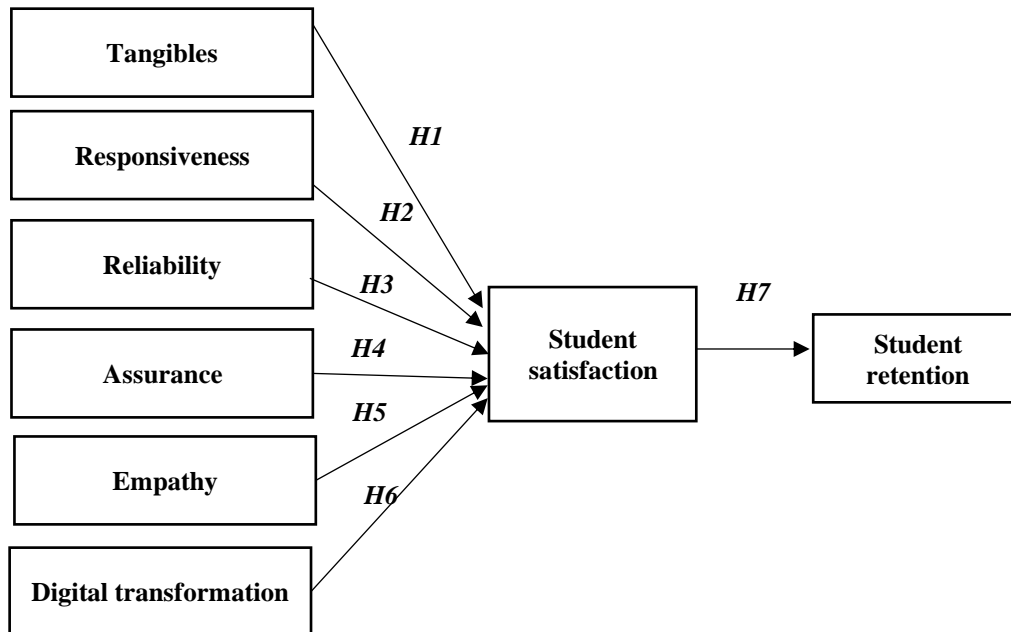


Figure 1. Conceptual Model of Student Satisfaction and Student Retention

Sources: developed by the authors.

Methodology and research methods. In order to test the hypothesized relationships, a quantitative method using self-administered questionnaires was utilized. For testing the proposed research model, data were obtained from the top five private university students in Bangladesh, namely Ahsanullah University of Science and Technology, North South University, BRAC University, Independent University Bangladesh, and East-West University. A convenience sampling method was employed for collecting data because it is the easiest method (Malhotra, 2017; Zikmund et al., 2013). Of the 235 students who were requested to complete the questionnaire, 210 completed the survey. After carefully screening each questionnaire, 200 usable questionnaires matched the requirements for this research. Thus, the response rate was 85.11%. No financial or non-financial incentives were offered to elude socially desirable responses. The data collection took place for two months, from July to August 2022. Table 1 demonstrates the demographic identities of the participants. In gender distribution, 59.50% of the participants were male, and 40.50 % were female. The majority of the respondents were aged between 20 and 25 years (74%). Furthermore, most of the respondents were from business school (46%), followed by science (40.50%), who mainly were studying in the third year (36.50%), followed by the fourth year (32%).

In order to confirm the reliability and validity of the constructs, all the measurement items of SERVQUAL dimensions, digital transformation, student satisfaction, and student retention was adapted from the previous research and further revised to make them suitable for measuring student satisfaction. A total of 22 items under SERVQUAL dimensions were adopted from Parasuraman et al. (1991). Four items of satisfaction were taken from Holdford and Patkar (2003). Six items of digital transformation were adopted from Van et al.(2022), and four items of student retention were adopted from Eresia-Eke et al. (2020). A five-point Likert Scale was used (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree).

Table 1. Demographic profile of the respondents

Variable	Category	Frequency	Percentage
Gender	Male	119	59.50%
	Female	81	40.50%
Age (Year)	Below 20	33	16.50%
	20-25	148	74%
	25-30	19	9.50%
Department	School of business	92	46 %
	Science	81	40.50%
	Arts and Social Sciences	27	13.50%
Academic year	First year	16	8%
	Second year	39	19.50%
	Third year	73	36.50 %
	Fourth year	64	32 %
	Other	8	4%

Sources: developed by the authors.

Table 2 shows that Cronbach alpha values of the eight factors are higher than the suggested cut-off value of 0.70 (Heale and Twycross, 2015; George and Mallery, 2003), which indicates that the measurement scales are reliable for further study. The data were analyzed by using the Statistical Package of Social Science (SPSS, 26.0). In this study, descriptive statistical analysis was conducted through the aggregate Mean and Standard Deviation of each construct. Multiple Regression Analysis and Bivariate Regression Analysis were utilized to test the proposed hypothesized relationships.

Table 2. Results of the Cronbach's Alpha

Factors	No of items	Cronbach's Alpha
Tangibles	4	0.837
Reliability	5	0.862
Responsiveness	4	0.741
Assurance	4	0.854
Empathy	5	0.792
Digital transformation	6	0.897
Student satisfaction	4	0.834
Student retention	4	0.833

Sources: calculated by the authors.

Results. Table 3 demonstrates the results of the mean and standard deviation of SQ dimensions, digital transformation, SS, and SR. The values of standard deviations of eight factors are between 1.01 and 1.39, indicating very little variance in student perception among measured variables.

Table 3. Results of the descriptive statistics (n= 200)

Factors	Mean	Standard deviation
Tangibles	3.79	1.01
Reliability	4.34	1.32
Responsiveness	4.22	1.39
Assurance	4.02	1.21
Empathy	3.10	1.11
Digital transformation	4.18	1.35
Student satisfaction	4.51	1.27
Student retention	4.42	1.14

Sources: calculated by the authors.

Thus, student opinion seems to be coherent regarding the respective measured variables in this research. All the mean values are higher than the median value on the five-point Likert scale. In the case of service quality dimensions, the highest mean value is 4.34 (reliability), followed by 4.22 (responsiveness), 4.02 (assurance), 3.79 (tangibles), and 3.10 (empathy), respectively, which are the reflection of favorable perception regarding the service quality of private universities. On the other hand, the composite mean score for digital transformation is 4.18, which means the students' positive attitude toward technological aspects

used by private universities. This positive perception of students is supported by the mean score of student satisfaction (4.51) and student retention (4.42).

Next, the multiple regression analysis was used to measure the impact of six independent variables, i.e., tangibles, reliability, responsiveness, assurance, empathy, and digital transformation, on student satisfaction (dependable variable). The model summary shows that the R-value is 0.821 (Table 4), which shows the correlation of six independent variables with the dependent variable. Further, it is also revealed that the coefficient of multiple determination R-Square is 0.772 (Table 4). It indicates that tangibles, reliability, responsiveness, assurance, empathy, and digital transformation explain 77.2 % of deviations in the dependent variable, i.e., student satisfaction. The rest of the variation (22.8%) in student satisfaction is explained by other variables which were not considered in this research.

Table 4. Model summary

R	R-Square	Adjusted R-Square	Std. Error of the estimate
0.821 ^a	0.772	0.764	2.76542

a. Predictors: (Constant), Tangibles, Reliability, Responsiveness, Assurance, Empathy, and Digital Transformation

Sources: calculated by the authors.

Table 5 displays the result of the analysis of variance (ANOVA) for the model of the study. The significant value (p-value) is less than 0.05, indicating the independent variables (tangibles, reliability, responsiveness, assurance, empathy, and digital transformation) can substantially predict the variations of the dependent variable (student satisfaction).

Table 5. The results of ANOVA test

Model	Sum of squares	df	Mean square	F	Sig.
Regression	602.632	6	100.439	19.461	0.000***
Residual	996.021	193	5.161		
Total	1368.653	199			

Notes: a. Predictors: (Constant), Tangibles, Reliability, Responsiveness, Assurance, Empathy, and Digital transformation; b. Dependent Variable: Student satisfaction, ***p < 0.01

Sources: calculated by the authors.

Finally, Table 6 illustrates the results of the hypothesis of this study. It is shown that the p-values of tangibles, reliability, responsiveness, assurance and digital transformation are less than 0.05, which indicates a significant impact of these five variables on student satisfaction (Table 6). Hence, H1, H2, H3, H4, and H6 are accepted. However, the p-value of empathy is significantly lower than the acceptable value (0.05), even though it has a positive effect on student satisfaction, indicating the rejection of H5.

Table 6. Results of hypothesis testing

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.	Outcome
	B	Std. Error	Beta			
(Constant)	0.217	0.132		1.647	0.103	
H1 Tangibles → Student satisfaction	0.295	0.049	0.301	5.960	0.000	Supported
H2 Reliability → Student satisfaction	0.345	0.035	0.440	9.824	0.000	Supported
H3 Responsiveness → Student satisfaction	0.418	0.035	0.432	11.795	0.000	Supported
H4 Assurance → Student satisfaction	0.043	0.017	0.084	2.512	0.014	Supported
H5 Empathy → Student satisfaction	0.024	0.035	0.023	0.674	0.502	Not Supported
H6 Digital Transformation → Student Satisfaction	0.344	0.077	0.311	4.501	0.000	Supported

Note: t – t-value; Sig. – Significance; B – Unstandardized coefficients; Std. Error – Standard error; Beta – Standardized coefficients.

Sources: calculated by the authors.

The data was also tested using bivariate regression to find the association between student satisfaction and student retention. ANOVA summary (Table 7) shows that student satisfaction can significantly predict student retention intention (F = 82.866; Sig. =0.000).

Table 7. Results of bivariate regression analysis

R-Square	F	Sig.
0.588	82.886	0.000***

Note: ***p < 0.01; F – F-value; Sig. –Significance

Sources: calculated by the authors.

Moreover, Table 8 suggests that student satisfaction has a significant influence on student retention, supporting H7 (0.000< 0.05).

Table 8. Results of hypothesis testing

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.792	0.233		3.397	0.001
H7: Student satisfaction → Student retention	0.750	0.082	0.767	9.104	0.000

Notes: a. Dependent variable: Student retention; t – t-value ; Sig. – Significance ; B – Unstandardized coefficients; Std. Error – Standard error ; Beta – Standardized coefficients.

Sources: calculated by the authors.

Conclusions. The study aimed to examine how service quality dimensions and digital transformation influence SS and SR in the context of private universities in Bangladesh. The results of the descriptive analysis indicate that students are satisfied with the quality of private university services and digital transformation initiatives, which were validated by the outcomes of descriptive statistics. Moreover, the hypothesized results show that all the service quality dimensions have a significant impact on student satisfaction except the empathy dimension, which is consistent with previous findings (Thapa, 2022; Borishade et al., 2021; Pham et al., 2019; Gregory, 2019; Martha-Martha and Priyono, 2018). It signifies that if the student perceives the quality of service to be high, then the student satisfaction level will be high. Thus, private universities should focus on continuous quality improvement in all aspects of educational services by emphasizing the attractiveness of the infrastructure, reliability of the programs, promptness of the response to student affairs, and the assurance to provide safe and trusting educational services to students and this will invariably lead to student satisfaction to a greater extent. The result also demonstrates that digital transformation significantly influences student satisfaction, which is in line with the prior findings (Van et al., 2022; Alhubaishy and Aljuhani, 2021). This outcome indicates that student satisfaction derives from the digital transformation initiatives taken by private universities. Hence, private universities should accelerate the digital transformation process in admission, live classroom, examination, e-library, seminars, and training programs to easily adopt blended learning programs. Lastly, the results affirm that student satisfaction significantly influences student retention, which is congruent with the prior findings (Eresia-Eke et al., 2020). This finding suggests that satisfied students intend to pursue their undergraduate and postgraduate degrees from the same university and also act as university brand ambassadors. Hence, private universities should focus on more visible engagement with students to satisfy them, which catalyzes student retention. The study investigates the impact of service quality dimensions and digital transformation influence SS and SR in the education industry in Bangladesh. The findings reveal that four elements (tangibles, reliability, responsiveness, and assurance) substantially impact student satisfaction, except the empathy dimension. It is because students ponder that personalized services or individual attention are not critical elements to crafting a high level of satisfaction. The finding illustrates that digital transformation substantially affects student satisfaction, which indicates a positive attitude toward the digital transformation process in the 21st century. The findings also stated that there is a significant influence of student satisfaction on student retention. As student satisfaction is a key determinant of the sustenance of the private university, private universities should prioritize service quality dimensions and digital transformation, which influence student satisfaction. There are some limitations to this study. First, this study focused on a single industry in a single country, namely the education industry in Bangladesh. Second, the study was limited to some selected private universities in Dhaka; however, future studies may include public universities in Dhaka and other places so that the findings can be generalized in a large setting. Future studies should consider student engagement and hedonic and utilitarian value perceptions to extend the existing model.

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References

Aboubakr, R. M., & Bayoumy, H. M. (2022). Evaluating educational service quality among dentistry and nursing students with the SERVQUAL model: A cross-sectional study. *Journal of Taibah University Medical Sciences*, 17(4), 648-657. [\[Google Scholar\]](#) [\[CrossRef\]](#)

A dinegara, G., & Putra, P. S. E. (2016). Assessment of service quality in higher education: Case study in private university. *International Journal of Business and Management Invention*, 5(9), 82-88. [\[Google Scholar\]](#)

Agrawal, N., Sangwan, D., & Prabhu, H. M. (2022). Impact of student perceived service quality and faculty transformational leadership on student satisfaction and student motivation: an empirical study. *International Journal of Services and Operations Management*, 41(3), 343-356. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Al Hassani, A. A., & Wilkins, S. (2022). Student retention in higher education: the influences of organizational identification and institution reputation on student satisfaction and behaviors. *International Journal of Educational Management*, 36(6), 1046-1064. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Al Natour, S., & Woo, C. (2021). The determinants of learner satisfaction with the online video presentation method. *Internet Research*. 31(1), 234-261. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Al-Haddad, S., Taleb, R. A., & Badran, S. (2018). The impact of the education services quality on students' satisfaction: an empirical study at the business schools in Jordan. *International Journal of Business Excellence*, 14(3), 393-413. [\[Google Scholar\]](#)

Alhubaishy, A., & Aljuhani, A. (2021). The challenges of instructors' and students' attitudes in digital transformation: A case study of Saudi Universities. *Education and Information Technologies*, 26(4), 4647-4662. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Ali, A.Y.S. & Mohamed, A.I. (2014). Service Quality Provided by Higher Education Institutions in Somalia and Its Impact on Student Satisfaction. *European Journal of Business and Management*, 6(11), 143-148. [\[Google Scholar\]](#)

Alsheyadi, A. K., & Albalushi, J. (2020). Service quality of student services and student satisfaction: the mediating effect of cross-functional collaboration. *The TQM Journal*, 32(6), 1197-1215. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Annamdevula, S., & Bellamkonda, R. S. (2016). Effect of student perceived service quality on student satisfaction, loyalty and motivation in Indian universities: development of HiEduQual. *Journal of Modelling in Management*, 11(2), 488-517. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Asree, S., Zain, M., & Razalli, M. R. (2010). Influence of leadership competency and organizational culture on responsiveness and performance of firms. *International Journal of Contemporary hospitality management*, 22(4), 500-516. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Azam, A. (2018). Service Quality Dimensions and Students' Satisfaction: A study of Saudi Arabian Private Higher Education Institutions. *European Online Journal of Natural and Social Sciences*, 7(2), 275-284. [\[Google Scholar\]](#)

Balyer, A., & Oz, O. (2018). Academicians' Views on Digital Transformation in Education. *International Online Journal of Education and Teaching*, 5(4), 809-830. [\[Google Scholar\]](#)

Borishade, T. T., Ogunnaike, O. O., Salau, O., Motilewa, B. D., & Dirisu, J. I. (2021). Assessing the relationship among service quality, student satisfaction and loyalty: the NIGERIAN higher education experience. *Heliyon*, 7(7), e07590. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Bowden, J. L. H., Tickle, L., & Naumann, K. (2021). The four pillars of tertiary student engagement and success: a holistic measurement approach. *Studies in Higher Education*, 46(6), 1207-1224. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Bygstad, B., Ovrelid, E., Ludvigsen, S., & Dæhlen, M. (2022). From dual digitalization to digital learning space: Exploring the digital transformation of higher education. *Computers & Education*, 182, 104463. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Chandra, T., Hafni, L., Chandra, S., Purwati, A. A., & Chandra, J. (2019). The influence of service quality, university image on student satisfaction and student loyalty. *Benchmarking: An International Journal*, 26(5), 1533-1549. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Chen, P. Y., & Cuong, B. M. (2020). An evaluation of student satisfaction of the joint master programs at Foreign Trade University in Vietnam. *Journal of International Economics and Management*, 20(2), 75-88. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Cownie, F. (2019). What drives students' affective commitment towards their university?. *Journal of Further and Higher Education*, 43(5), 674-691. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Danjuma, I., & Rasli, A. (2012). Service quality, satisfaction and attachment in higher education institutions: A theory of planned behaviour perspective. *International journal of academic research*, 4(2), 96-103. [\[Google Scholar\]](#)

Decuyper, M., Grimaldi, E., & Landri, P. (2021). Introduction: Critical studies of digital education platforms. *Critical Studies in Education*, 62(1), 1-16. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Directorate of Secondary and Higher Education. (2018). *History*. Retrieved September 20, 2020, from [\[Link\]](#)

Doan, T. T. T. (2021). The effect of service quality on student loyalty and student satisfaction: An empirical study of universities in Vietnam. *The Journal of Asian Finance, Economics and Business*, 8(8), 251-258. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Duarte, P. O., Raposo, M. B., & Alves, H. B. (2012). Using a satisfaction index to compare students' satisfaction during and after higher education service consumption. *Tertiary Education and Management*, 18(1), 17-40. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Eresia-Eke, C., Ngcongco, N., & Ntsoane, T. (2020). The nexus of service quality, student satisfaction and student retention in small private colleges in South Africa. *Education Sciences*, 10(7), 179. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Frolova, E. V., Rogach, O. V., & Ryabova, T. M. (2020). Digitalization of Education in Modern Scientific Discourse: New Trends and Risks Analysis. *European journal of contemporary education*, 9(2), 313-336. [\[Google Scholar\]](#)

George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference, 11.0 update (4th ed.)*. Boston: Allyn & Bacon. [\[Google Scholar\]](#)

Gong, C., & Ribiere, V. (2021). Developing a unified definition of digital transformation. *Technovation*, 102, 102217. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Goumairi, O., Aoula, E. S., & Ben Souda, S. (2020). Application of the SERVQUAL Model for the Evaluation of the Service Quality in Moroccan Higher Education: Public Engineering School as a Case Study. *International Journal of Higher Education*, 9(5), 223-229. [\[Google Scholar\]](#)

Gregory, J. L. (2019). Applying SERVQUAL: Using service quality perceptions to improve student satisfaction and program image. *Journal of Applied Research in Higher Education*, 11(4), 788-799. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Heale, R., & Twycross, A. (2015). Validity and reliability in quantitative studies. *Evidence-based nursing*, 18(3), 66-67. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Helgesen, Ø., & Nettet, E. (2011). Does LibQUAL+ TM account for student loyalty to a university college library?. *Quality Assurance in Education*, 19(4), 413-440. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Holdford, D., & Patkar, A. (2003). Identification of the service quality dimensions of pharmaceutical education. *American Journal of Pharmaceutical Education*, 67(1/4), 849-859. [\[Google Scholar\]](#)

Hossain, J., Hoque, M. A., & Uddin, M. J. (2014). Private university: In expanding higher educational facilities in Bangladesh. *Banglavisision Journal*, 14(01). [\[Google Scholar\]](#)

Insch, A., & Sun, B. (2013). University students' needs and satisfaction with their host city. *Journal of Place Management and Development*, 6(3), 178-191. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Islam, K. A., & Salma, U. (2016). The role of private universities in higher education of Bangladesh: an empirical investigation. *International Journal of Finance and Banking Research*, 2(4), 121-128. [\[Google Scholar\]](#)

Jurkowsitch, S., Vignali, C., & Kaufmann, H. R. (2006). A student satisfaction model for Austrian higher education providers considering aspects of marketing communications. *Innovative Marketing*, 2(3), 9-23. [\[Google Scholar\]](#)

Kalam, A., & Mahonta, H. C. (2017). Measuring Service Gap of Higher education in Bangladesh: A comparative study between Public University and Private university. *IOSR Journal of Business and Management*, 19(11), 49-55. [\[Google Scholar\]](#)

- Kelmendi, N., & Nawar, Y. S. (2016). Assessing the impact of motivation on student retention: the case of University of West London. *The Business & Management Review*, 7(5), 67-78. [\[Google Scholar\]](#)
- Kerby, M. B. (2015). Toward a new predictive model of student retention in higher education: An application of classical sociological theory. *Journal of College Student Retention: Research, Theory & Practice*, 17(2), 138-161. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Khoo, S., Ha, H., & McGregor, S. L. (2017). Service quality and student/customer satisfaction in the private tertiary education sector in Singapore. *International Journal of Educational Management*, 31(4), 430-444. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Kitchroen, K. (2004). Literature review: Service quality in educational institutions. *ABAC Journal*, 24(2), 14-25. [\[Google Scholar\]](#)
- Kotler, P., & Keller, K. (2021). *Marketing Management* (15th global edition). Pearson Education Limited. [\[Google Scholar\]](#)
- Lien, P. T. (2017). Training service quality and its effects on student satisfaction: Case of a Vietnam University. *International Journal of Academic Research in Business and Social Sciences*, 7(4), 99-110. [\[Google Scholar\]](#)
- Long, S., Duang-Ek-Anong, S., & Vongurai, R. (2021). Determinants of business education on student satisfaction in higher education: A case study in Cambodia. *The Journal of Asian Finance, Economics and Business*, 8(3), 1405-1416. [\[Google Scholar\]](#)
- Malhotra, N., Nunan, D., & Birks, D. (2017). *Marketing research: An applied approach*. Pearson. [\[Google Scholar\]](#)
- Mansori, S., Vaz, A. F., & Ismail, Z. (2014). Service quality, satisfaction and student loyalty in Malaysian private education. *Asian Social Science*, 10(7), 57-66. [\[Google Scholar\]](#)
- Marlena, N., Dwijayanti, R., & Patrikha, F. D. (2022). Online Learning Infrastructure: Does it Strengthen the Effect of Service Quality on Student Satisfaction?. *Jurnal Iqra': Kajian Ilmu Pendidikan*, 7(2), 61-75. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Martha-Martha, N. G., & Priyono, I. (2018). The effect of service quality on student satisfaction and student loyalty: An empirical study. *Journal of Social Studies Education Research*, 9(3), 109-131. [\[Google Scholar\]](#)
- Mohamed Hashim, M. A., Tlemsani, I., & Matthews, R. (2022). Higher education strategy in digital transformation. *Education and Information Technologies*, 27(3), 3171-3195. [\[Google Scholar\]](#) [\[Google Scholar\]](#)
- Mulyono, H., Hadian, A., Purba, N., & Pramono, R. (2020). Effect of service quality toward student satisfaction and loyalty in higher education. *The Journal of Asian Finance, Economics and Business*, 7(10), 929-938. [\[Google Scholar\]](#)
- Parasuraman, A., Berry, L. L., & Zeithaml, V. A. (1991). Refinement and Reassessment of the Servqual Scale. *Journal of Retailing*, 67(4), 420-450. [\[Google Scholar\]](#)
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. *Journal of Retailing*, 64(1), 12-40. [\[Google Scholar\]](#)
- Perez-Lopez, R., Gurrea-Sarasa, R., Herrando, C., Martín-De Hoyos, M. J., Bordonaba-Juste, V., & Utrillas-Acerete, A. (2020). The generation of student engagement as a cognition-affect-behaviour process in a Twitter learning experience. *Australasian Journal of Educational Technology*, 36(3), 132-146. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Pham, L., Limbu, Y. B., Bui, T. K., Nguyen, H. T., & Pham, H. T. (2019). Does e-learning service quality influence e-learning student satisfaction and loyalty? Evidence from Vietnam. *International Journal of Educational Technology in Higher Education*, 16(1), 1-26. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Prakash, G. (2018). «Quality in higher education institutions: insights from the literature». *The TQM Journal*, 30(6), 732-748. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Rahman, M. S., Khan, A. H., & Haque, M. M. (2012). A conceptual study on the relationship between service quality towards customer satisfaction: Servqual and Gronroos's service quality model perspective. *Asian Social Science*, 8(13), 201-210. [\[Google Scholar\]](#)
- Rose, J., Lane, T. M., & Rahman, T. (2014). Bangladesh Governance in the Primary Education Sector: A Systematic Literature Review. *Bangladesh, Governance in Sectors Working Paper*. Dhaka: World Bank. [\[Google Scholar\]](#)
- Ruth, A. O. D. C. (2015). Persistence and retention towards degree completion of BS agriculture students in selected State Universities in Region IV-A, Philippines. *African Journal of Agricultural Research*, 10(13), 1543-1556. [\[Google Scholar\]](#)

- Saliba, K., & Zoran, A. G. (2018). Measuring higher education services using the SERVQUAL model. *Journal of Universal Excellence*, 4, 160-179. [\[Google Scholar\]](#)
- Santos, H., Batista, J., & Marques, R. P. (2019). Digital transformation in higher education: the use of communication technologies by students. *Procedia Computer Science*, 164, 123-130. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Sembiring, M. G. (2013). Determinants of students' loyalty at Universitas Terbuka. *Asian Association of Open Universities Journal*, 8(1), 47-59. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Sibai, M. T., Bay Jr, B., & Dela Rosa, R. (2021). Service Quality and Student Satisfaction Using ServQual Model: A Study of a Private Medical College in Saudi Arabia. *International Education Studies*, 14(6), 51-58. [\[Google Scholar\]](#)
- Singh, S., & Jasial, S. S. (2021). Moderating effect of perceived trust on service quality–student satisfaction relationship: evidence from Indian higher management education institutions. *Journal of Marketing for Higher Education*, 31(2), 280-304. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Sousa, M. J., Marôco, A. L., Gonçalves, S. P., & Machado, A. D. B. (2022). Digital Learning Is an Educational Format towards Sustainable Education. *Sustainability*, 14(3), 1140. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Subrahmanyam, A. (2017). Relationship between service quality, satisfaction, motivation and loyalty: A multi-dimensional perspective. *Quality Assurance in Education*, 25(2), 171-188. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Subrahmanyam, A., & Shekhar, B. R. (2017). Where do you find loyalty in the contemporary university scene?. *Journal of Applied Research in Higher Education*, 9(3), 378-393. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Swani, K., Wamwara, W., Goodrich, K., Schiller, S., & Dinsmore, J. (2022). Understanding business student retention during covid-19: roles of service quality, college brand, and academic satisfaction, and stress. *Services Marketing Quarterly*, 43(3), 329-352. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Sydorov, M., & Salnikova, S. (2021). SERVQUAL Model in HEI Monitoring Survey as a Part of Quality Assurance Policy. In *International Conference on Economics, Law and Education Research (ELER 2021)* (pp. 204-209). Atlantis Press. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Teeroovengadam, V., Nunkoo, R., Gronroos, C., Kamalanabhan, T.J. and Seebaluck, A.K. (2019). Higher education service quality, student satisfaction and loyalty: Validating the HESQUAL scale and testing an improved structural model. *Quality Assurance in Education*, 27(4), 427-445. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Thapa, M. (2022). Impact of Service Quality on Student Satisfaction: A Case Study of Public Sector Higher Secondary Institution. *The Batuk*, 8(1), 1-15. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- University Grants Commission of Bangladesh. (n.d.). List of Private Universities. University Grants Commission of Bangladesh. Retrieved from [\[Link\]](#)
- Van Vu, D., Tran, G. N., & Van Nguyen, C. (2022). Digital Transformation, Student Satisfaction, Word of Mouth and Online Learning Intention in Vietnam. *Emerging Science Journal*, 6, 40-54. [\[Google Scholar\]](#)
- Weerasinghe, I. M. S., & Fernando, R. L. S. (2018). Critical factors affecting students' satisfaction with higher education in Sri Lanka. *Quality Assurance in Education*, 26(1), 115-130. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Xiao, J. (2019). Digital transformation in higher education: critiquing the five-year development plans (2016-2020) of 75 Chinese universities. *Distance Education*, 40(4), 515-533. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Younas, M., Noor, U., Zhou, X., Menhas, R., & Qingyu, X. (2022). COVID-19, students satisfaction about e-learning and academic achievement: Mediating analysis of online influencing factors. *Frontiers in psychology*, 13, 948061. [\[Google Scholar\]](#)
- Yusof, N. M., Asimiran, S., & Kadir, S. A. (2022). Tahap Kepuasan Pelajar Terhadap Kualiti Perkhidmatan Universiti: Satu Tinjauan: Level of Student Satisfaction towards University Service Quality: A Review. *'Abqari Journal*, 26(1), 127-137. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Zhu, X., & Sharp, J. G. (2022). 'Service quality' and higher education: investigating Chinese international student and academic perspectives at a UK university. *Journal of Further and Higher Education*, 46(1), 1-19. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2013). *Business research methods*. Cengage Learning. [\[Google Scholar\]](#)

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Рівень задоволеності студентів та їх залучення: вплив якості послуг та цифрові трансформації

У XXI столітті економічний та технологічний розвиток країни значною мірою залежить від рівня та якості вищої освіти. У статті зазначено, що більшість закладів вищої освіти Бангладешу є приватними та пропонують освітні послуги на ряду з державними (фінансованими урядом) університетами. Метою даного дослідження є визначення впливу якості послуг та цифрової трансформації на задоволеність студентів та їх залучення у приватні університети Бангладешу. Вихідні дані для дослідження сформовано на основі результатів анкетування студентів з п'яти найкращих приватних університетів Бангладешу. Загалом, до анкетування залучено 235 студентів, з яких 210 надали відповіді на питання анкети. За результатами ретельного опрацювання анкет, авторами вилучено 10 нерелевантних анкет. У ході дослідження сформовано та здійснено перевірку концептуальної моделі, яка складається із восьми факторів, включаючи п'ять вимірів моделі SERVQUAL, а також цифрову трансформацію, задоволеність студентів та їх залученість. Авторами здійснено перевірку гіпотетичних зв'язків за допомогою описової статистики (середнє значення та стандартне відхилення), множинного регресійного та двовимірного регресійного аналізу з використанням програмного забезпечення SPSS 26.0. За результатами емпіричного аналізу встановлено, що студенти є задоволеними якістю послуг приватних університетів та цифровою трансформацією в університеті. Автори встановили, що всі показники якості послуг (за винятком емпатії) мають позитивний та суттєвий вплив на задоволеність студентів. До того, суттєвим впливом на задоволеність студентів є вплив цифрової трансформації. Отримані результати засвідчили, що задоволеність студентів має позитивний та значущий вплив на рівень їх залученості в університеті. За результатами аналізу наукових напрацювань з досліджуваної тематики, авторами наголошено на відсутності робіт, присвячених дослідженню впливу показників якості послуг та цифрової трансформації на задоволеність студентів та їх утримання в приватних університетах Бангладешу. Результати дослідження можуть бути корисними закладам вищої освіти при розробленні стратегії вдосконалення якості послуг та цифрової трансформації з метою підвищення задоволеності студентів та їх утримання у висококонкурентних закладах вищої освіти. Враховуючи отримані результати, авторами наголошено, що для виживання та розвитку вищої освіти в XXI столітті, необхідним є здійснення цифрової трансформації.

Ключові слова: цифрова трансформація, вища освіта, якість послуг, утримання студентів, задоволеність студентів.