

## TECHNOLOGY ADOPTION FOR HIGHER EDUCATION IN BANGLADESH – DEVELOPMENT AND VALIDATION

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### ABSTRACT

*This article examined the importance of developing a resilience model framework to adapt technology in the higher education system of Bangladesh. Furthermore, it focuses on understanding the governmental aspirations towards public and private higher education in the country. Considering the pandemic and its subsequent impact on the education system, the importance of adopting technology in higher education has been assessed. Lastly, the recent regulatory and legislative developments in Bangladeshi education policy have been analysed. Here the researchers have adopted the interpretivism research philosophy in order to ensure that the data collection and analysis process and for this research, a qualitative research design has been adopted to understand the various aspects of students and teachers, the government's roles and responsibilities within the higher education system, and the adoption of technology. Since this research aims to create a framework for integrating technology into the higher education system, the researchers gathered most of their data from various academic and literary sources. They also used authentic government papers and media documentaries. Finally, the data has been analysed using a thematic analysis tool, allowing the researcher to identify patterns within the collected data. Student innovation in the case of technology and resource redundancy and the ability to organise resources accelerates the process; this innovation is referred to as proactive practices. This research might help understand the interrelation between the several variables and factors of the framework.*

Key words: Technology Adoption, Resilience Model, Higher Education, Bangladesh

### INTRODUCTION

The pandemic brings new hindrances to the progress of education. With the outbreak of the Covid-19 pandemic, most countries of the world began to keep institutions closing (Dhawan, 2020). Covid-19 has changed the traditional educational system dramatically; over 1.2 billion students across the globe were out of the standard classroom teaching system (Pearson, 2022). It is a historic and unparalleled upheaval of the world's schooling system, and this condition forced schools to a near shutdown. The widespread school shutdowns were felt internationally and provoked various inequalities in gender, technology educational achievement and psychological health (Armitage & Nellums, 2020). Hence, the radical thoroughgoing changes in the social surroundings due to the pandemic drive us to examine how higher education institutions (HEIs) can impact their learners so that they remain amalgamated with the education system (Babbar & Gupta, 2021). A student might become unified with the educational system through interaction with the teaching staff, peers, family, and other group members (Tinto, 1975). Like any other business, a higher education institution must adapt to the times to effectively manage its stakeholders, including professors, support staff, students, and researchers. Thus, researchers must consider how HEIs affect their students so that they remain integrated with the educational system considering the drastic and ongoing changes in the social environment brought about by the pandemic.

Here, the Covid-19 pandemic gives rise to several unpredicted 'imposing challenges to higher education institutions (Harsha & Bai, 2020). There is a significant question: What are the challenges of implementing a technology adoption model in higher education in Bangladesh? What are the significant impacts of Covid-19 on the Education system of Bangladesh? What kind of challenges and opportunities has been determined? How is technology adoption for HEI significant for HEI in Bangladesh? What is the importance of the resilience model for HEI in Bangladesh? How can we redesign the HEI borough of Bangladesh to cope with regular periods and sudden disruptions? However, this research aims to explore the challenges in the Bangladeshi education system regarding technology adoption, especially considering the recent developments due to the pandemic. Furthermore, the resilience model of technology adoption will be discussed in the context of technology adaptation in Bangladesh's higher education system. Nonetheless, this research aims to develop a resilience model framework to adapt technology in the higher education system of Bangladesh.

Furthermore, it will focus on understanding the country's governmental aspirations towards public and private higher education. Considering the pandemic and its subsequent impact on the education system, the importance of adopting technology in higher education will be assessed. Finally, the recent regulatory and legislative developments in Bangladeshi education policy will be analysed. This research is necessary to understand the nation's inability to incorporate technology within the higher education system successfully. Some identified challenges against the successful adoption of virtual learning supposing limited access to the internet, the high price of data, low speed of the internet, difficulties in using online platforms, and unavailability of electronic devices. Researchers often define resilience as mending the old process and developing new practices especially (Fang et al., 2022). This research will be helpful in further research into the technology adoption in Bangladesh's higher education system.

### LITERATURE REVIEW

#### Aspiration of Bangladesh of government about higher education

Bangladesh's government has incorporated ICT in education in their vision for 2021, assuming National ICT Policy - 2009 and National Education and Policy 2010 as an integral part of its developmental aspirations as it moves forward to become Digital

Bangladesh. After realising that ICT-related skills can increase the possibility of eradicating poverty in society, the Government of Bangladesh has already used extreme creativity to implement these policies. For instance, it created a2i (access to information) pointing to embody technology in all aspects of Bangladesh ([www.a2i.pmo.gov.bd](http://www.a2i.pmo.gov.bd)) and converted paper-based books into electronic versions ([www.ebook.gov.bd](http://www.ebook.gov.bd)) (Khan et al., 2019). There have been various conceptually advanced Education Commissions established in Bangladesh. However, these institutions could be flimsier and keep things the same. Higher levels of understanding, adherence to contemporary teaching techniques, and dedication from professors and students can improve Bangladesh's higher education culture (Monem & Benjamin, 2010). The IT or computer literacy level among recent graduates in Bangladesh needs to be corrected. Bangladesh is ranked 106th out of 138 nations in the Global Motivation Index, issued by the World Economic Forum, regarding IT competitiveness (Mannan, 2017). The Bangladeshi government is attempting to grow its higher education system by seeking to enhance knowledge management at educational facilities. Various higher education institutions serve the country's general education system and technical sector. Both public and private universities and degree colleges and university colleges participate in Bangladesh's advanced teaching process in various forms. The worldwide modern education system must adopt a new comprehensive, sensible timetable that includes strategies to broaden students' knowledge and worldview to achieve the SDGs. The Higher Education Quality Enhancement Project (HEQEP), launched by the Ministry of Education of the Government of Bangladesh with assistance from the World Bank, is scheduled to end in December 2018. Bangladesh (Ali. M.M 2020). The National Education Policy of 2009 has considered the guidelines specified in Annexe 1 of the Constitution of the People's Republic of Bangladesh. This policy's main objectives are geared toward the development of moral principles. It investigates how to prepare people to lead expert development programs and the advancement of society. They will develop into morally upright individuals who respect their religion and the beliefs of others. They will be logical and intellectually adept. Education will aid their development as independent, patriotic, and well-organised individuals free from irrationality.

Moreover, only through education will the country develop the attributes and abilities necessary for Bangladesh to function at a balanced pace and capacity with the rest of the world. According to the inherent directives, this education policy will serve as the cornerstone for a sound system for providing pro-people education, easily accessible, steady, comprehensive, diplomatic, science-oriented, and of the highest calibre. It will also serve as a plan to address all issues. The following (table 1) shows the education policy's objectives, justifications, concepts, and goals National Educational Policies of Bangladesh (NEP, 2016). Bangladesh's government has highlighted the following through Education Policy to ensure creativity in learning.

Table 1 National Educational Policies of Bangladesh

SI	objectives, justifications, concepts, and goals
1	To build an educational system that is in line with innovation, viability, and capacity to achieve improvement in the economic and social spheres of the nation; to instil in students a technical mindset and leadership standards.
2	To ensure that students at every level have adequate geographic knowledge so they are discouraged from rote learning and instead apply their judgement, imagination, and passion for exploration.
3	To ensure students have high-calibre abilities across all subject areas and educational levels to compete in a global setting.
4	To develop a digital Bangladesh based on knowledge-oriented and ICT growth, integrate information and communication technology (ICT) with significant importance to math, science, and English.
5	To uphold the high standards of higher education in all laws, encourage students to engage in research, and foster a conducive and necessary environment for research throughout the nation.

Source: NEP (2016)

### The SDGs and Higher Education

Higher education institutions (HEIs) are in a unique position to beat the forefront of promoting Sustainable Development Goals (SDGs) and act as a benchmark for other sectors of the economy. SDG 4 calls for everyone to have fair access to tertiary education, such as college and university, to help everyone learn throughout their lives. Still, universities play another essential part in the SDGs to help reach all the goals. They educate people, create knowledge, and develop new ideas. The SDGs are a topic that HEIs can contribute to in a big way in society (UNESCO, 2022: The Role of Higher Education in Achieving the SDGs).

### Implications of Technology on Higher Education in the Post-Pandemic World

To explore public university students' online classes during the Covid-19 in Bangladesh, Sarker et al. (2021) indicate that virtual schooling has created discrimination between rural and urban students, male and female students, PC and mobile broadband users, and mobile network users. Khalil et al. (2020) have opined that the pandemic has brought a revolutionary change in teaching methods based on the traditional classroom. Mansoor & Afzal, (2021) have stated that in the educational sector, the digital divide is frequently marked as the gap between those learners who do not have and have the idea of using the internet and information technologies that are transmuting education.

When done correctly, online, or virtual learning can be as effective as face-to-face or traditional forms of learning; however, the critical problem which has emerged during this discourse is that the universities in Bangladesh still need top skilling. Bonifield et al. (2020) state that upskilling is necessary to navigate complex digital solutions to ensure a seamless learning experience and student environment. Additionally, a culture of continuous upskilling helped students stay within reach of their

teachers regarding digital literacy. However, as discussed above, the digital divide in an emerging economy such as Bangladesh is relatively high and is affected by several socio-economic, political, and individual factors.

### The Current System of Higher Education During and After the Pandemic

Marioni et al. (2020) said that focusing on the effects of Covid-19 on higher education around the globe highlights the challenges of e-learning just as lacking technical infrastructure and internet accessibility, distance learning and teaching capacities, a designed curriculum, and some disciplines like arts, music, and design need to be practised in the group where online learning is not supportive. Adedoyin & Soykan (2020) opined that the sudden migration of higher education to online mode becomes controversial due to a lack of design and preparation of instructional programs. Regarding this, Shrestha et al. (2022) focus on the challenges and issues of the students and teachers concerning the e-learning adoption at the tertiary level in Nepal and Bangladesh as poor network, lack of digital skills, shortage of technological support from the institution, low student attendance and motivation, lacking interaction, power disconnection difficulties in demonstration and mental issues both teachers and students. In addition to the technological and resource-related challenges of inculcating online education within Bangladesh's existing higher education system, it is also essential to address and discuss other challenges.

### A Framework to Effectively Implement Technology Adoption in Higher Education

The above analysis has identified several challenges concerning technological adoption in the higher education system of Bangladesh. These problems range from lack of resources, lack of knowledge and skill, as well as lack of proper facilities to incorporate technology. Rouf et al. (2022) have stated that here the efficacy of the resilience model in the context of technological adoption can be discussed; researchers suggest that students have mainly positively approached online learning and education. Researchers have identified several properties or elements of preparedness concerning adopting technology in higher education, especially during national social or economic disruptions. These elements include redundancy, self-organisation, a proactive approach, and insecurity of data and technology.

### Understanding the development of educational policies in Bangladesh

Mustary (2021) has used the accountability theory to explain Bangladesh's existing policies and strategies to improve the education system here. The researchers have argued that accountability theory is appropriate here since the government has been seen to initiate several programmes intended to improve the education system; therefore, they are accountable to the relevant stakeholders. The government has developed a strategic partnership with the World Bank and has planned to help incorporate over a million children into the primary education sector to reduce the illiteracy rate in the country, which is alarmingly high. However, Chowdhury, Absar & Quader (2020) has argued that one essential reforming step toward higher education is providing grants to students to help them access quality higher education in the private sector. The government plans to offer grants to students of shallow interest so they can continue their higher education in private universities. The primary aim of these grants is to ensure higher attendance in higher education settings and the active involvement of the government within the same.

## RESEARCH METHODOLOGY

The methodology of this study is depicted in Figure 1. The figure illustrates a systematic progression of research philosophy, research design, research approach, data collection, and analysis. The ethical considerations of this study have been expounded upon.



Fig1: Research Methodology Structur

### Research Philosophy

Research philosophy refers to the philosophical school of thought or belief regarding the nature of data, knowledge and truth used and presented in a research project (Panya & Nyarwath, 2022). There are mainly two types of research philosophy – positivism and interpretivism. Here the researchers have adopted the interpretivism research philosophy to ensure that the data collection and analysis process is best suited to achieve the aims and objectives of the study. Interpretivism philosophy states that there is no objective or absolute way to interpret data and provides a conceptual framework for the data collected. This philosophy also

provides an opportunity to reformulate the existing knowledge of the research subject of the researcher; hence, it can also be said that the data analysis and generation process is interrelated in this framework.

### Research Design

Before starting any research study, selecting the necessary and relevant research tools and techniques is essential. The research design is often referred to as the framework on which the researcher selects the research methods, tools, and techniques. The research design can mainly be categorised into qualitative and quantitative research. The qualitative framework collects non-numerical and subjective data, especially in interviews, focus group discussions, secondary data collection, and so on (Singh & Ramdeo, 2020). This type of design helps the researcher understand the research problem and phenomena more detailed, whereas quantitative design involves collecting numerical and statistical data from various sources. The essential advantage of this framework is the ease of data presentation and the ability to scientifically prove and replicate the results (Gerloch & Font-Clos, 2020). However, a qualitative research design has been adopted for this research to understand the various aspects of students and teachers, the government's roles and responsibilities within the higher education system, and technology adoption.

### Research Approach

The research approach is the plan that decides the entire research process, including the methods, techniques, and tools for collecting data, analysing them, and generating conclusions. There are several research approaches, such as - experimental, correlational, explanatory, and causal comparison. Here the researchers have adopted the explanatory research methodology to understand technology adoption in the higher education of Bangladesh. The explanatory research approach allows the researcher to explore different concepts within the study, such as accounting theory and the resilience Bangladesh model, especially with the help of various tools and techniques (Sovakool et al., 2018). One of the key benefits of this approach is that explanatory research helps to develop innovative and creative solutions to complex problems with multiple variables. This research design is the most appropriate since this research aims to develop a framework to inculcate technology into the higher education system.

### Data Collection

The researcher has used secondary data from different published sources (Sileyew, 2019). Indeed, the researcher has collected most of the data from various academic and literary sources; furthermore, media and authentic government reports have also been used. Finally, the data has been analysed using a thematic analysis tool, allowing the researcher to identify patterns within the collected data.

### Ethical Considerations

Ethical considerations are one of the most critical aspects of research, ensuring the validity of the same (Vollmer et al., 2020). For this research, the researcher must ensure that the collected data is only used for academic purposes. Furthermore, in secondary research, de-identification also plays an important role. The researcher must eliminate any data that may be used to identify the original participants of the studies analysed here.

### Findings and Analysis

The benefits of online, virtual, or flexible education are endless, such as cost-effectiveness, more access to diverse students and learners, and career advancement (Pakdaman et al., 2019). Besides that, it allows opportunities for people already in the workforce, personalised education, and more involvement within one's educational or learning process. Al-Amin et al. (2021) have identified two primary reasons for students' inability to respond to the teachers in an online class setting. Firstly, the data connection could be better, and high-speed internet costs more; secondly, they need to remember most things they have learned once they leave campus. Engaging students profoundly in this teaching process is a challenge for institutions. Transferring from conventional mode to online mode is challenging. Creating online content to cover the curriculum and coping mentally with this new learning platform is challenging for the students (Dhawan, 2020). Most students have shown significant accountability while choosing their course content. The students mainly chose well-structured courses that provided them with a balance of recorded sessions, lectures, and live classes. They also demonstrated unique problem-solving capabilities to address the challenges they or their peers were facing; this indicates the development of resilience through technological adaptation (Eri et al., 2021). As mentioned by the scholars, "Digital resilience is students' tech-savviness and preparedness to adapt to different digital environments as they pursue higher education". Table 2 elaborates the thematic analysis of digitisation of higher education from literature.

Table 2: Thematic Analysis

Theme	Author Name	Journal/Article Name	Year
Digital resilience in higher education	Eri, R., Gudimetla, P., Star, S., Rowlands, J., Girgla, A., To, L., ... & Bindal, U. (2021)	Digital Resilience in Higher Education in Response to COVID-19 Pandemic: Student Perceptions from Asia and Australia. <i>Journal of University Teaching and Learning Practice</i> , 18(v5), 7.	2021
Higher education in Bangladesh	Monem, M., & Muhammad, H. (2010)	Higher education in Bangladesh: Status, issues and prospects. <i>Pakistan Journal of Social Sciences (PJSS)</i> , 30(2).	2010

Status of online classes in higher education Bangladesh	Al-Amin, M., Al Zubayer, A., Deb, B. & Hasan, M. (2021)	Status of tertiary level online class in Bangladesh: students' response on preparedness, participation and classroom activities. Heliyon, 7(1), p.e05943.	2021
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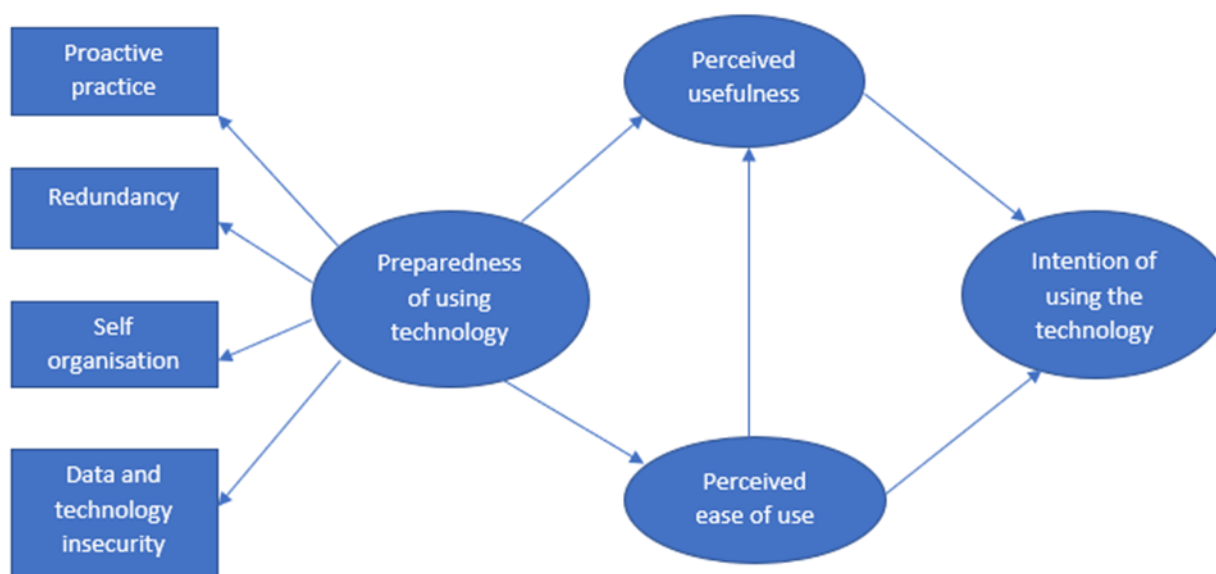
Research states that the Bangladesh education system largely depends on the government and the policies and strategies it implements to improve the education system (Monem & Muhammad, 2010). Researchers have also said, "In Bangladesh, there was a time when higher education used to be considered a luxury in a society of mass illiteracy". The government is contributing positively based on the improved student outcomes of recent years. The student grants are payable over a long time, so students are not pressured in any manner to repay the grants as soon as their university education is over. Furthermore, these grants not only allow the students to access university-level education but also access proper resources for the same. However, the primary problem lies in the need for more clarity to identify technology's importance and develop and incorporate accurate and relevant strategies. Furthermore, the National Education Policy has also identified technology as one of the most critical educational trends and resources. It has also been stated that to deliver quality higher education, the nation needs to incorporate and enhance its knowledge of technology (Rahman & Pandian, 2018).

Al-Amin et al. (2021) argued that "the learning process in higher education has moved online. Therefore, developing countries like Bangladesh are also trying to continue classes through the online platform with a lack of technological resources, readiness, and inclusiveness from the student's perspective". Consequently, based on this, one of the critical variables of the study has been chosen: data and technology-related insecurity, as well as redundancy. As per the further analysis of other sources, proactive practice and self-organisation have been recognised as two primary variables of the research into adopting technology in higher education in Bangladesh. Proactive practice, self-organisation, redundancy, and data and technology insecurity are the four main factors impacting the technology adoption process. Student innovation in the case of technology and resource redundancy and the ability to organise resources accelerates the process; this innovation is referred to as proactive practices.

The benefits of online education or virtual education or flexible education are endless such as cost effectiveness, more access to diverse students and learners, career advancement (Hossain & Ahmed, 2021). As well as opportunities for people who are already in the workforce, personalised education and more involvement within one's educational or learning process. Al-Amin et al. (2021) has identified two primary reasons behind students being unable to respond to the teachers in an online class setting. Firstly, the data connection is too poor, and high-speed internet costs more; secondly, they have forgotten most things they have learned once they left campus. To engage students profoundly in this teaching process is a challenge for institutions, transferring from conventional mode to online mode is challenging, creating online content to cover curriculum, to cope mentally with this new platform of learning is a challenge for the students (Dhawan, 2020). The majority of the students have shown significant accountability while choosing their course content. The students have mainly chosen well-structured courses that provided them with a balance of recorded sessions and lectures, as well as live classes. Additionally, they also demonstrated unique problem-solving capabilities to address the challenges they or their peers were facing; this indicates development of resilience through technological adaptation (Eri et al., 2021). As mentioned by the researchers "Digital resilience is students' tech-savviness and preparedness to adapt to different digital environments as they pursue higher education."

Research states that the Bangladesh education system is largely dependent upon the government and the policies and strategies it implements to improve the education system (Monem and Muhammad, 2010). The researchers have also said that "In Bangladesh there was a time when higher education used to be considered a luxury in a society of mass illiteracy". Based on the improved student outcomes of recent years it can be said that the government is contributing positively. The student grants are payable over a long time, so that students are not pressurised in any manner to repay the grants as soon as their university education is over. Furthermore, these grants not only allow the students to access university level education, but also access proper resources for the same. However, the primary problem lies in the inability to identify the importance of technology and developing and incorporating accurate and relevant strategies for the same. Furthermore, the National Education Policy has also identified technology as one of the most important trends and resources in the context of education. It has also stated that in order to deliver quality higher education, it is essential for the nation to incorporate and enhance the knowledge of technology (Rahman & Pandian, 2018).

As discussed by Al-Amin et al. (2021) "the learning process in higher education has moved online, therefore, developing countries like Bangladesh are also trying to continue classes through the online platform with a lack of technological resources, readiness, and inclusiveness from the perspective of the students." Therefore, based on this one of the key variables of the study has been chosen that is data and technology related insecurity, as well as redundancy. As per further analysis of other sources, proactive practice and self-organisation have been recognised as two primary variables of the research into adoption of technology in higher education of Bangladesh. Proactive practice, self-organisation, redundancy, and data and technology insecurity are four of the main factors impacting the process of adopting technology. Student innovation in the case technology and resource redundancy and the ability of organise resources which accelerates the process; this innovation is referred to proactive practices.



**Figure 2: Suggested Framework for Technology adoption in Higher Education, Bangladesh**

The above suggested framework of technology adoption in higher education in Bangladesh (see figure 2) build up the relation of variable necessary for intension of using technology in higher education of the country. Proactive practices are an important element of technological resilience; when students were unable to access their respective educational institutions; many accessed reading and other learning materials in digital forms and shared further with their peers (Anelliet al., 2019). This is one of the most important, and basic steps toward developing resilience through technology adoption. Self-organisation is another important aspect of technology adoption; if the students or learners are unable to take the initiative for ensuring effective use and implementation of online education, it will not be successful. Self-organisation in the case of technology adoption can refer to privatised sources of electricity to ensure seamless operation and access to classes, as well as independent data networks, and so on (Mark et al., 2009). However, it is important to understand that these are significant steps toward privatisation of data, rather than gradual innovation adopted by students.

Furthermore, redundancy is another crucial element of resilience in technology adoption. When students and other education system stakeholders realised the existing tools and resources were redundant against the pandemic, they were forced to develop unique and creative solutions. Within the new virtual or flexible education model being introduced within the educational systems worldwide, students and teachers must significantly develop their technical knowledge and aspirations to remain an integral part of the system (Care et al., 2018). In the context of Bangladesh's higher education, data and technology insecurity refers to the process of students not having enough fail into the systems and the reliability of virtual learning resources. Poor network connection, high costs of data, inability to engage in class, and more often contribute to this fact. Based on these four factors, preparedness to use technology is often influenced, which further impacts the perceived ease of use and usefulness and the intention to use technology.

Fang et al. (2022). have significantly inspired the development of the above framework. However, the variables of the framework have been researched independently, and adequate evidence supporting the variables has been given throughout the article. Furthermore, Kim & Chiu (2019) has also influenced the development of the framework, as their research has helped in understanding the interrelation between the several variables and factors of the framework mentioned above.

## FINDINGS

According to the analysis findings, the technology adoption model (TAM) is a system of information theory models concerning how users accept and utilise technology. Though it is not specific to higher education, it can be applied to get advancement in higher education in a populous country like Bangladesh. Besides this, resilience is a vital concept in the perception of higher education, guiding the learners to overcome the hurdles and challenges they get during their journey. This study tries to highlight the resilience model, including compassion, care with a better understanding with a view to a higher cherished capacity on the part of HEI stakeholders, personal accountability, transparent principles for leadership and more incredible networking with collaboration to keep and uphold the HEI in the perspective of developing counties perception like Bangladesh even in the uncomfortable moment. Here the researchers tried to establish a principal-based resilience model that has been developed as strengths-based, students-centred and viewed in an ecological way to support the HEI of Bangladesh over time.

The recent outbreak of Covid-19 has forced us to close all educational institutions in Bangladesh, commencing on March 17, 2020. There are additional factors why E-learning could be more successful for Bangladesh's tertiary education levels. From the perspective of the least developed countries, the main obstacles to effective E-learning practise are a feeble economy and inadequate infrastructure. An HEI must adopt current events to manage the productivity of its various stakeholders, including academics, administrative personnel, students, and researchers. In this study, the researchers identify important lessons learned by higher education institutions during the pandemic crisis. The suggestion of a flexible model for HEIs to follow during the crisis recovery period is based on extant theory and the researcher's experience. Bangladesh must catch up to the lack of a paradigm for adopting technology when other nations are advancing in their use of technology for higher education. In this regard, there is a

need for a model that enables HEIs from developing nations to respond to and assimilate significant change with the capacity to adapt during normal and abnormal periods. After identifying the issues and challenges facing higher education in Bangladesh, the study offers suggestions for enhancing the model for sustainable HEIs. Earlier research on virtual learning discussed several programmes and challenges models applicable during routine and emergency conditions.

This study focuses on a resilience technology adoption model for the stakeholders of higher education institutions (HEIs) in Bangladesh, including universities, teachers, students, parents, policymakers, and the government, to cope with standard and crisis periods to ensure HEIs' smooth development. It will also assist other developing nations in rebuilding their management structures.

Academic researchers and experts have opined that the universities in Bangladesh must invest heavily in funds and resources (Hossain, 2022). To significantly enhance the knowledge of the existing staff and the students regarding digitalisation and digital literacy, students will disengage on a higher level, and the dropout rate in higher education will also increase. One of the primary challenges of the modern education system in Bangladesh is engaging and motivating students effectively within the learning process. Media reports suggest that the strategies adopted by the Bangladeshi government have accepted significant results; currently, the higher education system in the country has over 3.2 million students, compared to only 31,000 in 1972 (Achieving Our Higher Education Targets, 2017).

Market estimation suggests that in the next decade, between 2021 and 2026, the enrolment of students in higher education will exceed 4 million. This indicates that the strategies to help students access relevant courses in both private and public universities are working. Student attendance is rising gradually, and students are also able to access resources using grants from the government. The requirement for educational reform is wider than the lack of resources and technological barriers; according to UN estimates, 48% of the population of Bangladesh consists of below 24-year-olds (Achieving Our Higher Education Targets, 2017). This massive human resource requires adequate training, education, knowledge, and skills to compete globally. This human resource is necessary for Bangladesh and several other developed countries where the population is increasingly ageing. The pandemic has reshaped the HEI of Bangladesh and gives notifications that several newer forms of the virus would emerge on our sweet abode earth any time. Since education is one of the basic needs of human beings and to lead life rationally, the light of knowledge is significant. However, the researchers have tried to provide a resilience model of technology adoption for HEI of Bangladesh according to the contemporary demand. Hence the need for world-class education to be world-class citizens in the respective sense of the developing country of Bangladesh. Bangladesh is also trying to march with this flow as the world is getting the fruitful touch of technology adoption in the higher education system.

## CONCLUSION AND RECOMMENDATION

In the finale, it can be said that even though the Bangladeshi higher education system is lacking in several ways, especially in incorporating technology, the government is implementing diverse strategies to bridge the fundamental gaps. Such as low attendance and the inability to access various learning resources and materials are some of the fundamental challenges of the higher education system in the nation. The swift transmission of Covid-19 acutely disrupted the traditional education system significantly. Proactive practices are an essential element of technological resilience; when students cannot access their respective educational institutions, much-accessed reading and other learning materials in digital forms are shared further with their peers (Anelli et al., 2019). This is one of the most essential and basic steps toward developing resilience through technology adoption. Self-organisation is another critical aspect of technology adoption; if the students or learners cannot take the initiative to ensure the effective use and implementation of online education, it will not be successful. Self-organisation in the case of technology adoption can refer to privatised sources of electricity to ensure seamless operation and access to classes and independent data networks. However, it is crucial to understand that these are significant steps toward privatising data rather than incremental innovation adopted by students.

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