Adoption of E-Learning During the COVID-19 Pandemic:
The Moderating Role of Age and Gender

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ABSTRACT

The outbreak of the novel coronavirus disease (COVID-19) has resulted in the complete disruption of the learning ecosystem across the world. The sudden shift from classroom learning to the use of virtual platforms has not only made an unprecedented impact on the learning style of the students, but it has also resulted in the problem of adoption of the same. Thus, with the significant surge in the usage of e-learning mechanism, the researchers even tend to predict the continued usage of the digital learning platforms post pandemic due to its accelerated usage and adoption by the learners and teachers as well across age and gender. Therefore, the present research seeks to study the factors influencing e-learning adoption by the students in the context of the pandemic. Further, it would examine the moderating influence of age and gender for the adoption of e-learning using the UTAUT model with extended constructs like computer anxiety, attitude, and technology anxiety.

KEYWORDS

E-Learning, Multi-Group Analysis, Novel COVID-19, UTAUT

1. INTRODUCTION

The novel coronavirus (COVID-19) disease which was first reported in December 2019 in the Wuhan city of the central Hubei provinces of China (Holsueet al., 2020) created unprecendeted health crisis across the globe. The World Health Organization, along with the Chinese authorities worked together to find out the etiological agent and named it as a virus (2019 n-Cov). On January 11, China declared its first COVID 19 death of a 61-year-old man who was exposed to the wet seafood market (WHO, 2020a). Subsequently, the deadly infection spread across the globe (WHO, 2020b). WHO declared this deadly virus is a public health emergency on January 30, 2020 (WHO 2020a, 2020b). As a result of the outbreak of the disease, lockdown was imposed across the world which adversely affected the normal life halting all the activities. Education was not an exception to this lockdown. All the educational institutions had come to a standstill due to the closure. According to UNESCO, by April 2020, 186 countries had imposed nationwide shut down, influencing 73.8% of the total learner enrolled (UNESCO, April, 2020). Thus, the pandemic forced educational institutions to adopt digital platforms to reach out to the students. This e-learning, of course, has played crucial role in planning, delivering and tracking the learning process effectively. But at the same time, its effectiveness depends

upon digital level efficiency and willingness to adopt and accept the system. However, the e-learning mode varies from typical classroom situations when it comes to learner satisfaction, motivation, and interaction (Bignoux and Sund, 2018).

In a developing country like India, the paradigm shift towards e-learning posed serieous challenges in terms of learning quality and the way content is designed and implemented efficiently. In other words, e-learning effectiveness depends upon how well contents are curated to an online platform. The students particularly under-graduates tend to face a lot of problems in adopting e-learning in such an unprecedented pandemic. The challenges are mostly related to technology, pedagogy, changed learning styles, constraints of time and cost apart from the other factors. Despite all the challenges, the learners tend to prefer the online form due to its flexibility and other benefits. Thus, based on these premises, the present study seeks to explore the factors affecting the adoption of e-learning during this difficult times. The study also tries to analyze the moderating role of age and gender towards the adoption of e-learning by the young undergraduates.

The findings of the study are expected to overcome the pertinent challenges in the adoption of e-learning and would suggest for an alternative model of the same at the university level. As the universities do not have sufficient time to design the course content and pedagogy to meet the academic requirements of the students, the learning experience can be improved by making it more productive, user-friendly and accessible in the course of adoption of e-learning. Furthermore, it is also expected to continue the e-learning process post pandemic in view of the uncertainties that prevail today. Thus, a new learning ecosystem is set to emerge where there is a possibility of the adoption of blended learning even after the pandemic is over. The findings would also suggest the universities to update their e-learning system to facilitate the adoption of the digital learning platform effectively. The research starts with a theretical base of UTAUT followed by the review of related works, the research methodology, empirical analysis, limitations and scope for further research and above all the conclusions and recommendations.

2.THEORETICAL BACKGROUND: HYPOTHESES FORMULATION

Technology not only facilitates the design of e-learning content but also helps in developing the perception and preference of the learners to accept and adopt online pedagogical platforms for thus making the learning process more interactive, engaging, productive, and useful. As the Technology Acceptance Model is considered as the most widely used framework for studying the adoption of any new technology and the attitude and willingness of the learners towards e learning too. This study adopts the unified theory of acceptance and use of technology (UTAUT) to study the factors that influence the students to adopt e-learning during an unprecedented situation of COVID-19.

2.1. UTAUT Framework

Previous studies on technology acceptance and user acceptance were reviewed to find out the key variables affecting the adoption of e-learning from the student's perspective in higher education. The UTAUT framework was mainly developed to study the adoption of technologies. The original Technology Acceptance Model (TAM) is the most effective and frequently cited theory in the literature. But it is believed that it only predicts the success of technology acceptance between 30% to 40% of cases, which shows a less exploratory power and the less usefulness in the field of acceptance (Benbasat and Barki,2007; Bagozzi, 2007; Teo,2011; Chuttur, 2009, Venkatesh and Davis, 2000). In the important study of student's adoption of web-based learning. TAM was found to explain only 15% of the students' actual use behaviour putting other constraints on model reliability and validity (Martins and Kellermanns, 2004). But the UTAUT model has included vital components across the other user adoption models. Unlike TAM, this model, with the integration of the primary constructs and the moderating variables, has further improved the analytical efficiency to 70% of the variance to use the technology (Venkatesh et al., 2003). From the context of e-learning, TAM has relatively

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