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Determinants of University Students' Intention to Use Video Conferencing Tools during COVID-19 Pandemic: Case of Somalia

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Abstract: In a technologically disadvantaged and thriving developing country, university students in Somalia were abruptly required to adopt nontraditional learning using video conferencing facilities during the COVID-19 pandemic. While video conferencing tools for teaching and learning are claimed to be effective, it is still unclear what advantages and difficulties they brought to higher education in Somalia, particularly to what extent students accepted the use of such technology. This study explores the outside factors that might be influential on students' intentions to use video conferencing tools during the COVID-19 epidemic. The study employed integrated technology acceptance (TAM) and diffusion of innovations (DOI) models. The proposed model was tested using structural equation modelling with 600 university students during the COVID-19 outbreak in Somalia. The results indicate that significant elements influenced students' intention to use video conferencing for learning, such as student readiness, usefulness, user satisfaction, ease of use, complexity, relative advantage, trialability, and university support, whereas the quality of service, compatibility, and observability are found to have no impact on students' intention to use video conferencing tools. The findings show that various COVID-19 related issues play a significant influence in shaping students' intentions to engage in video conferencing tools for learning during the COVID-19 pandemic, regardless of how effectively educational institutions are prepared to promote the use of such technology. This contribution emphasizes how crucial it is to maintain constant, interactive contact with students and to give them the right supporting environments to further enhance their educational experiences in technologically disadvantaged regions.

Keywords: COVID-19; DOI; TAM; technology acceptance; technology adoption; video conferencing

Citation: Başaran, S.; Hussein, K.A. Determinants of University Students' Intention to Use Video Conferencing Tools during COVID-19 Pandemic: Case of Somalia. *Sustainability* **2023**, *15*, 2457. https://doi.org/10.3390/su15032457

Academic Editors: Santiago Alonso-García, José Antonio Marín-Marín and Fernando José Sadio Ramos

Received: 30 December 2022
Revised: 26 January 2023
Accepted: 28 January 2023
Published: 30 January 2023

1. Introduction

The outbreak of COVID-19 has caused the greatest disruption in the educational system in human history, affecting over 1.6 billion students in approximately 200 countries, and the closure of institutions such as universities and schools that affect 94% of the world's students [1]. The situation has led to a life-changing difference in all aspects of life. Social isolation and limited action strategies have significantly altered old-style learning practices.

The first case of COVID-19 in Somalia was reported in Mogadishu on 16 March 2020, and the disease quickly spread throughout the country [2]. The Somali Ministry of Education formally granted students the freedom to study from home if the learning quality is maintained. Due to the COVID-19 pandemic, the Somali government announced the closure of schools on 18 March 2020. The Ministry of Education, Culture, and Higher Education (MOECHE) declared that schools would not reopen for the remainder of the academic year because of the uncertainties surrounding the development of COVID-19 transmission. Under normal conditions, the school year 2020–2021 was scheduled to begin in August 2020. However, this would depend on the changing situation. According to the MOECHE,

examinations had been postponed, and they soon released further information on the new examinations' time frame [3]. During the COVID-19 pandemic, the significance of technology in education and its critical role in continuing education in schools, institutions, and universities worldwide were noticed and witnessed. Under COVID-19, Somalia's public and private institutions extensively utilized information communications technology (ICT) in the educational process from March to July 2020.The administration of universities, teaching staff, students, and parents had their first mandatory and official experience with cooperative learning services, sharing information, and successful interaction between lecturers and students. The administration of universities saw how important ICT was to education and how easy it was to start online courses during this time [4]. Due to the pandemic, it became difficult to continue with face-to-face education. University education was merged with video conferencing tools, which provided new ways to communicate and cooperate with the classes. The increasing popularity of ICT tools encourages the broad use of technology in training to enhance teaching and discover top quality education. It was discovered that video conferencing adequately connects the instructor with the student or one learner to another when they have to be across a distance instead of coming into the classroom.

In the capital city of Mogadishu, Somalia, it was reported that there were around 44 private universities in which the quality of education was not monitored, with the majority of the institutions having inadequate allocations for teaching. Delivering essential ICT services to the entire population is a challenge for Somalia. ICT infrastructure exists only in cities such as Mogadishu. At the university level, ICT use in education is more pervasive. Universities in Somalia have a campus-wide network that connects to the internet [5].

The alternative during the COVID-19 outbreak was to switch from traditional to online education when the students were unable to attend physical classes. As a result, universities of Somalia have promoted social distancing practices to stop the virus's spread by utilizing online learning environments to carry on teaching and learning. However, the quality of education, ICT infrastructure, and technological skills and training were problematic areas. Without government support, it was difficult to support academic quality with cutting-edge technology [6]. To continue the educational process during the epidemic, the majority of the institutions devised various strategies. For instance, low-tech options such as narrated PowerPoint presentations and freeware such as Skype, Zoom, Google Classroom, Moodle, and WhatsApp were reported to be used in underdeveloped nations to facilitate online instruction [7]. Instructors can include their students in using the resources offered so that the influence on learning is as little as possible. While some instructors favored Zoom, others chose Google Meet. The Google classroom was used on purpose for assignments and tests [8].

The burden of interacting with students from various economic groups fell on the scholars. This issue required instructors to offer lecture topics with the appropriate adaptability. Students from low-income households cannot afford to have access to proper tools. Therefore, instructors offered low-quality technology [6].

For example, lectures are not a challenge for a student to finish on time on the internet. Online learning is the only way to keep teaching and learning going during the COVID-19 pandemic [9]. While universities, colleges, and schools were locked to handle the worldwide pandemic, learners, parents, and teachers worldwide possess the feeling of an uncertain wave of influence of the COVID-19 outbreak. The educational system is trying to continue its way during these challenging times. Numerous learners living in their homes have felt mental and emotional anguish and have been powerless to be involved effectively. The most excellent practices for online homeschooling so far use appropriate and related teaching for the online education system to be allowed to lead in the proficiency and vulnerability to data and connecting technology for both teachers and the students. Professors can create courses for their students to improve their learning results using online systems such as "Team Canvas, Blackboard, and Google classroom", which incorporate united connections and teamwork [10].

Although adapting to the new alternative, the preparedness of students and instructors needs to be evaluated and helped. Students with a fixed mentality find it hard to adjust to online learning, while students with an extended mindset quickly adapt to the new online education style [11]. Online education also permits overcoming physical obstacles, which moreover provides the privilege to contribute to teaching in the virtual environment. This study highlights the changes that COVID-19 brought to the education system, how the problems of implementing online learning due to the absence of face-to-face instruction are tackled, and what solutions were brought to resolve these problems. E-learning tools have played an essential role in this COVID-19 outbreak, helping students continue their education while the universities' and schools' education facilities are closed [12].

COVID-19's unpredictable consequences necessitated the use of video conferencing tools (VCT) to educate and study. Research into the usage of VCTs and their benefits and drawbacks is necessary, particularly in student acceptance of such tools. This study will try to fill in some gaps in that respect. It examines TAM and DOI models related to Somalian students' acceptance of VCTs in an e-learning context. As a result, the primary goal of this research is to look into the impact of COVID-19 on instructional technology uptake in higher education. Because it was difficult for students to engage in face-to-face studies during this pandemic's uncertain era, many resorted to video conferencing to finish their education. Despite the hurdles, universities maintained a high level of quality instruction while preserving regular contact with their students. It is envisaged that by gaining a deeper understanding of the social and technological aspects that promote VCT adoption in distance learning, the frequency and efficacy of VCT adoption would increase. A better understanding of these factors could help managers, teachers, and service providers figure out the benefits and drawbacks of VCTs in distance learning and, as a result, make better decisions about technology infrastructures and support services so that more students use them to perform better in their learning process.

Different countries encountered similar issues in the implementation of synchronous education during the COVID-19 pandemic. Online education was not as popular in Sub-Saharan African countries due to the region's poverty, inadequate communication infrastructure, and high end-user internet costs [8]. Compared to their peers from wealthy backgrounds, the majority of less fortunate students cannot afford online education [13]. In the least developed country such as Zimbabwe, teachers and students favored the smartphone and computer/laptop over radio broadcasts where availability and suitability of technology are crucial for assuring the effectiveness of remote-based teaching. The majority of the teachers used LMSs and social media tools, although the lack of infrastructure, high data costs, and low teacher skill levels limited student access to computers and the internet, management support, and institutional culture [14]. Similar inferences were noted by another study conducted at Addis Ababa University in Ethiopia. The majority of academic staff members have access to or have utilized Moodle and Blackboard. The main e-learning delivery systems that most of the academic staff were familiar with were Zoom and Google Meet. Additionally, academic personnel were familiar with e-learning material-generating technologies including YouTube, Google Docs, and the Microsoft suite [15].

The aforementioned studies reflect the situation in the higher education institutions in Somalia and surrounding regions. The aim of the study is to identify factors that are influential in university students' use of video conferencing tools in Somalia during the COVID-19 outbreak. For this purpose, the study employs integrated TAM-DOI models to investigate the degree of acceptance of video conferencing tools by university students in Somalia. The rest of the paper is organized as follows: The literature review is discussed in Section 2. The conceptual framework is given in Section 3. The methodology section is given in Section 4. The results are addressed in Section 5. Section 6 is dedicated to the subsequent discussion. The conclusion is discussed in Section 7. Section 8 includes implications. Limitations are stated in Section 9. Recommendations are mentioned in Section 10.

2. Related Research

As stated by UNESCO, over a billion international and domestic students have been affected by the school and university closures that started in response to the COVID-19 outbreak. Since November 2020, more than 300 million students spread across more than 30 countries, which equals almost 18% of the entire registered students, have been excluded from schools due to the lockdown [16].

Face-to-face conventional teaching and learning were interfered with by COVID-19, leading institutions to relocate online and implement what is called "emergency online learning and teaching" as stated in the current research [17]. This situation explains how the expansion of COVID-19 has caused the closure of universities worldwide and how this closure has felled the growth of online learning environments, ensuring that education was disrupted. Because of the total lockdown, the universities had little time to prepare for all academics to teach and for learners to find out via remote access. The rapid translation of components from traditional in-person teaching to online was not succeeded without challenges. Educators found it complicated and time-consuming to make online classes that were credible in a short amount of time [18].

Traditional learning has been reframed with a new type of learning and has caused reformation of the online curricular activities. Due to the unpredictable nature of the pandemic and its quick spread, online teaching and learning tools were established in a short time without proper evaluation on a nationwide scale at the start of the outbreak [8]. Under a broad social agreement, most students unconditionally agreed to the internet-enabled education and learning systems [3]. Regardless of quick advancement worldwide, the internet possesses only the essential structure to supplement an educational institution's teaching and learning only to certain degree. There is a preceding limited scenario on the impact of a massive online educational program used as a reaction to the COVID-19 outbreak. Consequently, educational institutions were not ready to shift into online teaching and learning [8]. According to researchers in [19], short-term decisions were made, and procedures were carried out ignoring the possible undesirable facets. Throughout the initial trend of COVID-19, numerous universities were quickly assumed to have disrupted their face-to-face instructional facilities [16]. They had to adapt to the unforeseen. This current shift has caused both obstacles and opportunities for learners and instructors. Education and learning service providers, consisting of college establishments, needed to follow their corresponding federal governments' preventative social distancing actions and improve their sanitary techniques to reduce the spread of outbreaks. Many higher education institutions (HEI) expressed possibility plans, distributed information concerning the infection, educated their teams to function remotely, and systematized online meetings with learners or course participants [15].

Nonetheless, a year and a half after the COVID-19 incident, academic staff were confident in using remote learning innovations such as learning management systems and video conferencing packages to teach their courses, and they expressed that it will open new opportunities in terms of teaching and learning [9,18]. Throughout the pandemic, they became accustomed to the internet innovations that helped with synchronous materials through text, recordings, and video clips [8]. Frequently, they used video conferencing systems consisting of "Microsoft Teams, Google Meet, Zoom", and other systems. COVID-19 has made them use this approach to engage with their students [20].

Regardless of the fact that concerns may significantly impact technology acceptance during the COVID-19 outbreak, most universities and colleges have begun applications that use learning distance to reduce the dangerous and malevolent impact of COVID-19. Nevertheless, several universities and schools have faced challenges concerning teachers' understanding and enactment of technology, learners' knowledge and experts' opinions, and the lack of shifting classrooms for learning into online classes due to inadequate digital literacy skills, poor network in management and infrastructure, incapability of producing proper online materials, and insufficient technical support [8,21]. The acceptability of technology in distance learning has a considerable impact on the validation of its utility

and the adoption of online learning applications in general. The adoption of an innovation in education is not a straightforward process. It may impact a variety of factors such as inspecting and evaluating technology, framework, and strategy. Currently, it is considered that the acceptability of certain technologies, such as Google Meet, within the context of a specific event, such as the COVID-19 outbreak, has not been well investigated. According to sources, Google Play and the Apple Store have partnered to deliver Google Meet to every client [20].

Embedding technology and its applications into teaching and learning have made significant changes in education, from a closed model with teachers and classrooms to an extra-open and learner-centered model. It allows educators to go from one conventional embodiment of knowledge to a knowledge guide to many, allowing them to administer various communication channels and stimulate the knowledgeable capacities of learners in the behavior of information, including online learning, hybrid teaching, and cooperative models with the help of a learning management system (LMS), including synchronous and asynchronous connection tools, administrative features, and evaluation techniques [19]. These assessment utilities can help educators schematize fundamental estimation of learning progress [22]. Evaluation can be immediately brought to the learners and, upon conclusion, returned with results and information response. Thus, management learning systems can also be used for evaluation objectives in advanced education [23].

As e-learning technology advances at a breakneck pace, it is one of the primary reasons this concept must be implemented and established extensively. Online learning is cooperative. It needs high levels of communication and association to be successful [24]. This can only be provided through synchronous tools such as video conferencing.

Today, ICTs have developed as a strategy for universities to improve learners' performance. The growth of these advanced teaching–learning strategies has provided students with customized learning environments. Through the use of technology, students have a chance to learn off-campus without requiring a teacher. Students enroll in e-learning management system platforms that host online classes [25]. Learning management systems (LMSs) are used throughout the entire learning process. These platforms' large amounts of data provide information-based data that can assist both teachers and students in achieving their academic objectives [25]. The acceptability of their features such as synchronous tools as video conferencing have been the focus of numerous studies, particularly in the COVID-19 pandemic. In particular, the acceptance of ICT tools and e-learning or online education by students and instructors during the pandemic has been commonly investigated through the use of well-known technology acceptance models. In a study conducted on 313 university students in Korea, acceptance and satisfaction with online classes were examined through TAM with perceived ease of use and perceived usefulness, satisfaction, and acceptance intention [17]. All six hypotheses, except the one among perceived ease of use and acceptance intention of online classes, were supported. A study explored how 501 higher education students in a Southern European context feel about remote learning using synchronous video conferencing tools, such as Zoom, Microsoft Teams, and Google Meet, as well as asynchronous learning management systems (LMS) through TAM and UTAUT models with perceived usefulness, attitudes, facilitating conditions, and behavioral intentions with a construct relating to perceived interactivity where all six hypotheses were supported [19]. A study conducted with 450 university students from the United Arab Emirates endeavored to identify the impact of fear on students' embrace of Google Meet during the COVID-19 epidemic through TAM and fear constructs with perceived fear, perceived ease of use, perceived usefulness, subjective norm, and adoption of Google Meet. All eight hypotheses were supported [20].

To determine the factors that drove the adoption of video conferencing for online education in Vietnam during the COVID-19 epidemic, a study was conducted with 203 instructors through a unified theory of acceptance and use of technology (UTAUT) with performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, habit, price value, intention, and usage of video conferencing, and the modera-

tor variables were gender, age, school level, and ICT experience. Seven out of 10 hypotheses were supported except for social influence—intention, facilitating conditions—intention, and habit—usage [26].

A study employed the TAM model to examine 131 university students' intention to participate in e-learning classes during COVID-19 in Finland with awareness of COVID-19, perceived challenges, perceived institution preparedness, perceived usefulness, perceived ease of use, and intention. Nine out of 12 hypotheses were supported except awareness—perceived ease of use, preparedness—intention, and preparedness—perceived usefulness [27].

In addition, a study explored the acceptance of video conferencing tools by 277 Vietnamese university students during COVID-19 with TAM constructs as: output quality, computer playfulness, subjective norm, received usefulness, perceived ease of use, attitude towards use, intention, and actual use. Eleven out of 16 hypotheses were supported except subjective norm—perceived usefulness, subjective norm—attitude, perceived usefulness—intention, perceived ease of use—intention, and perceived ease of use and actual use [28].

Moreover, a study used TAM and information systems success models to evaluate the acceptance of blended learning systems during COVID-19 in 700 university students in north Cyprus with information quality, system quality, perceived usefulness, perceived ease of use, system interactivity, user satisfaction, and use. Seven out of 9 hypotheses were supported except for system quality—user satisfaction and user satisfaction—use [29].

A study conducted with 66 undergraduate students in the United Kingdom during the COVID-19 pandemic used TAM and expectancy confirmation models with the variables as: social influence, confirmation, perceived usefulness, satisfaction, and continuous intention to use. All five hypotheses of the study were supported [30].

Studies on the acceptance of video conferencing tools using any of the technology acceptance models in Somalia could not be located in the literature. In addition, none of the studies used TAM-DOI models together. In light of the above, there is a dearth of research on the recognized aspects leading to university students' successful adoption of synchronous video conferencing tools to maximize their learning experience, as suggested by the examined relevant studies, despite the increasing proliferation of online learning applications.

3. Research Model and Hypothesis Development

The study focuses on an integrated version of the technology acceptance model (TAM) and diffusion of innovations (DOI) model that sketches an individual's behavior and attitudes towards certain technology usage. The context of this study concentrates on the behavioral intention of students to use video conferencing tools in higher education throughout the pandemic. DOI and TAM models stand as the most potent innovation adoption models in research [31–33]. Additionally, scholars are making extensive use of technology to investigate a variety of technological innovations that are fostering education. TAM model constructs include: usefulness, ease of use, quality of service, user satisfaction, university support, student readiness, and behavioral intention to use, and DOI model constructs are: complexity, compatibility, observability, trialability, and relative advantage.

3.1. Behavioral Intention to Use (BIU)

Behavioral intention is a way to predict behavior using information technology. It is based on the motivational factors that lead to a particular behavior. The more sense it makes to do the behavior, the more likely it will happen. To determine the factors that influenced students' use of this tool during the COVID-19 epidemic, extensive study has been conducted on their intended behavior when it comes to video conferencing [26,34]. Yet, studies on students' intentions to use video conferencing have received minimal attention, which motivated the conduct of this research.

3.2. Student Readiness (SR)

Preparedness for online learning includes specialized IT skills and effective website usage. Some studies showed that students' previous experience with distance education (e.g., way of life decisions, such as using time productively, need for organized direction, and interest in online classes, motivation, and plans for getting tasks completed) and their willingness to experiment are contributing factors to their preparedness. Student readiness for the new changes as an intention to use video conferencing tools needs to be assessed and supported appropriately while being adapted. The ability to adapt and change is challenging for learners who have a fixed belief, but it comes naturally to those who have an open approach [1]. Researchers in some studies remarked that, so far, studies investigated instructors' readiness and institutional preparedness; however, examining the degree of how well students are prepared and motivated to use new learning environments should also not be ignored [27]. Students are more likely to participate when they feel competent to handle new learning environments. The TAM theory mentions a connection between readiness and participation intention. The desire to engage in new learning environments as hybrid learning increases when student preparedness is stronger [35].

Hypothesis 1. *Student readiness positively influences behavioral intention to use video conferencing tools in learning during COVID-19 pandemic.*

3.3. University Support (UniS)

In higher education, suitable teaching tools and services should be provided by the institution to students. University services must be available anytime for the access of students. Colleges are spending money on e-learning systems for students to pursue their learning. For this purpose, universities provide learning management systems, which are an e-learning framework for circulating courses over the internet and coordinating online efforts. It works with the help of instructors to understand correspondence, keep logs on students' development, and allow the protected sharing of content online. Whether focusing on distance instruction or teaching, most colleges presently use learning management systems to help improve learning and educational measures. Distance and traditional education are typically aided by a wide range of features that can be used to aid both. Learning management systems can offer new learning and instructive techniques such as video conferencing tools that meet various instructive necessities. This method also gives college students more flexibility in following lectures [36].

Hypothesis 2. *University support positively influences behavioral intention to use video conferencing tools in learning during COVID-19 pandemic.*

3.4. Quality of Service (QoS)

It was procedurally characterized as "a pointer by which the recipients' fulfillment with the assistance they got is estimated according to what the help clients expected before getting the assistance and the subsequent input." Quality is a significant and compelling component in any area or industry. It has become a proportion of the accomplishment of any association, regardless of whether it is mechanical or administrative, and a norm of greatness in giving an item or administration. The intention to use mobile learning was found to be positively impacted by service quality [37].

Hypothesis 3. *Quality of service positively influences behavioral intention to use video conferencing tools in learning during the COVID-19 pandemic.*

3.5. Ease of Use (EU)

It describes the students' feelings that a particular system is easy or simple and easy to manage. In this study, ease of use is associated with learners' viewpoints on utilizing video conferencing tools that can improve their understanding, their learning experiences,

and efficiency. The connection between ease of use and behavioral intention has positively affected students utilizing new technology [36].

Hypothesis 4. *Ease of use positively influences behavioral intention to use video conferencing tools in learning during the COVID-19 pandemic.*

3.6. Usefulness (U)

It shows the learners' opinions on whether they feel that a particular system can improve their efficiency. The factor of usefulness has a positive influence on behavior intention. It was proposed that during COVID-19, college students thought remote learning tools such as LMS and video conferencing apps were effective, and they are willing to use such technology [19]. In a study regarding e-learning, e-learning adoption determinants such as usefulness affect e-learning adoption behaviors of users [36].

Hypothesis 5. *Usefulness positively influences intention to use video conferencing tools in learning during COVID-19.*

3.7. User Satisfaction (US)

Users must be satisfied with what they do and use throughout their learning process. Feedback from users is critical to receiving what they wish. Responses of the users will help to see which places need to be improved. To improve goals that make use of knowing what users expect from the system, makes them more satisfied with the tasks they must do, hence influencing positively their intention to use such technology. The positive result relationship between user satisfaction and the behavioral intention was reported by researchers [38].

Hypothesis 6. *User satisfaction positively influences intention to use video conferencing tools in learning during COVID-19.*

3.8. Relative Advantage (RA)

Relative advantage is the extent to which an innovation can benefit an organization. It is related to a period during which many individuals believed that the new idea was significantly better than the previously established norm. As a result, this word is employed in the current study to clarify how students' perceptions that using video conferencing can increase their understanding. Because the benefits that may be obtained from using the e-learning system have been repeatedly highlighted in the relevant studies, the search for the goal of utilizing the system is positively influenced by the benefits that can be obtained [36]. Additionally, a study reported positive linkage between relative advantage and intention to use mobile learning [37]. The connections between appreciating one advantage and behavioral purpose in TAM and DOI have received little attention by researchers. The sole research study in this area revealed that users who reported more benefits were more likely to report a higher level of effectiveness in interpreting systems than those who did not record any benefits [39]. Precisely because relative advantage depends on how useful new and existing technologies are seen, perceived usefulness and relative advantage are linked but separate concepts. The adoption of a technology is partially explained by its perceived usefulness, but its relative advantage also enables us to take into account the influence of other technologies that would otherwise be disregarded [40].

Hypothesis 7. *Relative advantage positively influences intention to use video conferencing tools in learning during the COVID-19 pandemic.*

3.9. Compatibility (CO)

It underlines that students get the sense that the development is driven by their needs and expectations, prior involvement, and the demands of potential adopters. Compatibility is the extent to which an innovation is consistent with current business practices, norms,

and value systems. It was stated that the degree of found closeness of students' values, requirements, and experiences is thought to positively affect their intention to use [41]. Considering the students' viewpoints on the potential of using a new learning environment, perceived compatibility is a sign of the user's behavioral intention to put their skills to good use. Perceived compatibility was associated with a considerable increase in the behavioral reason for using the product, the perceived effectiveness, and the perceived ease of using the product. The interaction between modern technologies that are compatible with users' prior experience was found to be positively associated with the ease with which technology development might be implemented. Compatibility is among the influencing factors of users' adoption of certain technology [42].

Hypothesis 8. *Compatibility positively influences behavioral intention to use video conferencing tools in learning during the COVID-19 pandemic.*

3.10. Complexity (COX)

It is explained as the extent to which technologies are difficult to comprehend for the ease with which they may be used, as viewed by those other than the user. Following this description, the current study uses these phrases to characterize the level of difficulty perceived by the learner, which has an impact on his or her learning performance. Individuals who regard the e-learning system as complicated, according to previous research, have a lower intention to utilize the system, which is a result of their low perception of its complexity. As required, the partnership between complexity and behavioral goal has positively influenced the intention to use a new learning environment. Complexity has an immense impact on how current users plan to adopt new technologies [43].

Hypothesis 9. *Complexity negatively influences behavioral intention to use video conferencing tools in learning during the COVID-19 pandemic.*

3.11. Observability (OBS)

The level at which the effect of the advancement is visible to others is defined as "the point at which the effect of the advancement is visible to those who are not involved in it". Visibility is considered an essential factor in encouraging peer intention to use a certain innovation. Observability indicates the extent to which an innovation's effects are apparent to others [31]. Observability or visibility significantly and positively affected the intentions of late adopters in different studies [36,44].

Hypothesis 10. *Observability positively influences behavioral intention to use video conferencing tools in learning during the COVID-19 pandemic.*

3.12. Trialability (TRI)

People believe they need to experience innovation before deciding whether or not to change it. People who are considering adopting it as well as those who are studying it, tend to view it as less unpredictable. In the current study, this idea outlines how learners' perceptions about using video conferencing tools impact their learning efficiency. The users' attitudes toward using the system and their intent to do so are greatly affected by observability [45]. Studies in TAM and DOI have shown a significant impact of viewed use of systems on users' observability. This observability also positively impacts other metrics, including perceived ease of use, intention to utilize the LMS, and perceived efficacy of the system. It is the extent to which an innovation may be tested. The findings revealed that trialability had a considerable impact on late adopters' adoption intentions, but not on those of early adopters [44].

Hypothesis 11. *Trialability positively influences behavioral intention to use video conferencing tools in learning during the COVID-19 pandemic.*

Hence, these relationships are conceptualized in Figure 1:

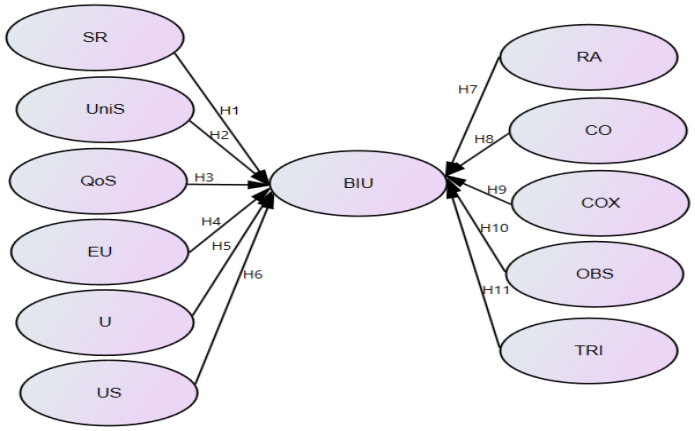

Figure 1. Hypothesized model of the study based on TAM-DOI.

4. Methodology

The proposed research model combined important attributes from TAM and DOI models to understand how learners prepare to adjust to this new technology. The study took into account the following factors: behavioral intention to use, student readiness, university support, quality of service, ease of use, usefulness, user satisfaction, relative advantage, compatibility, complexity, observability, and trialability.

4.1. Research Design

In this study, the quantitative research design was used incorporating structural equation modeling to show the causal relationships among proposed variables.

4.2. Data Collection

The data were collected through an online questionnaire using Google forms, and SPSS with AMOS tools were used to analyze data. The questionnaire contained two parts: the first part contained demographic information, and the second part contained dimensions associated with two models (TAM and DOI), namely, ease of use, usefulness, university support, student readiness, quality of service, user satisfaction, behavioral intention to use, relative advantage, compatibility, complexity, observability, and trialability. The questionnaire comprised 48 questions on a 5-point Likert scale from strongly disagree to strongly agree. Student readiness, university support, and quality of service were adopted from [46]; ease of use, usefulness and behavioral intention, and user satisfaction construct items were adopted from [32,33]; and DOI constructs were drafted from [41]. The questionnaire of the study is given in Appendix A.

4.3. Participants

Participants were university students in Mogadishu, Somalia. Students were emailed a cover letter and the link to this study's questionnaire form. It would be challenging to obtain such information from rural areas. Therefore, the capital city university students were targeted due to the ease of access and convenience. The recipients of this email were enrolled in full-time, part-time, and distance education programs. An approximate population of 15,000 students from universities such as Somalia University (UNISO), Mogadishu University, Jamhuriya University, and Jazeera University, with different educational background levels and faculties, constitutes the target population of the study. Slovin's formula given in Equation (1) was utilized to determine the minimum desired sample size where n represents the sample size, N is the population size (15,000), and e is the significance level (0.05). It was determined that the minimum sample size was approximately 390. However,

a greater number of valid responses were collected to obtain more accurate results. The demographic information of the 600 respondents are given in Table 1.

$$n = \frac{N}{1 + N(e^2)} \quad (1)$$

Table 1. Demographic Information of Participants.

		Frequency	Percentage
Gender	Male	332	55.3%
	Female	268	44.7%
Age	18–25	338	56.3%
	26–35	206	34.3%
	36 and above	56	9.3%
Level of education	Undergraduate	270	45%
	Master's	270	45%
	PhD	60	10%
Department	STEM	310	51.7%
	Others	290	48.3%
LMS use	Moodle	584	97.3%
	Blackboard	16	2.7%
VC use	Google Meet	584	97.3%
	Zoom	16	2.7%

4.4. Data Analysis

The data were collected from 600 valid responses from different universities in Mogadishu, Somalia, to ensure the data analysis is accurate. Any missing data were checked. Reliability and exploratory factor analyses were performed to determine internal consistency and validity. Later, confirmatory factor analysis was applied to obtain a good fit model. Finally, structural equation modeling was applied to identify to what extent the data fits into the proposed model.

4.5. Reliability and Exploratory Factor Analysis Results

The exploratory factor analysis (EFA) was managed by a group of observed variables and determined the form of the survey of the factors. Consequently, EFA, the theoretical results directly executed in confirmatory factor analysis (CFA), was employed to apply the structural equation model to improve the modification of latent variables to fit the model. The initial questionnaire contained 54 items, where 6 items were related to demographic information, and the other 48 items were five-point scale Likert questions related to TAM and DOI constructs. The principal component produced 48 observed variables that yielded the best result in model form. The Kaiser–Meyer–Olkin measure of the sampling adequacy of values was 0.907, and Bartlett's sphericity value test was significant (<0.001). The exploratory factor analysis indicated 12 factors with 48 observed variables. These factors explain 72.618% of the total variance. Cronbach's alpha reliability values for 12 constructs vary between 0.704 and 0.963, given in Table 2.

Table 2. Reliability, composite reliability, and convergent validity analysis.

Construct	Item	Factor Loading (>0.4)	Cronbach's Alpha (>0.7)	CR (>0.7)	AVE (>0.5)
SR	SR1	0.937	0.938	0.938	0.913
	SR2	0.889			
	SR3	0.913			

Table 2. *Cont.*

Construct	Item	Factor Loading (>0.4)	Cronbach's Alpha (>0.7)	CR (>0.7)	AVE (>0.5)
UniS	UniS1	0.881	0.880	0.963	0.931
	UniS2	0.940			
	UniS3	0.955			
	UniS4	0.948			
QoS	QoS1	0.982	0.957	0.893	0.894
	QoS2	0.925			
	QoS3	0.978			
	QoS4	0.908			
	QoS5	0.988			
	QoS6	0.972			
	QoS7	0.970			
	QoS8	0.949			
	QoS9	0.950			
EU	EU1	0.796	0.947	0.953	0.893
	EU2	0.894			
	EU3	0.967			
	EU4	0.963			
	EU5	0.847			
U	U1	0.800	0.818	0.899	0.829
	U2	0.790			
	U4	0.901			
	U5	0.827			
US	US1	0.966	0.963	0.963	0.945
	US2	0.897			
	US3	0.974			
RA	RA1	0.591	0.794	0.743	0.611
	RA2	0.560			
	RA3	0.684			
CO	CO1	0.733	0.885	0.890	0.851
	CO2	0.904			
	CO3	0.915			
COX	COX1	0.641	0.721	0.752	0.708
	COX2	0.761			
	COX3	0.722			
OBS	OBS2	0.700	0.704	0.709	0.741
	OBS2	0.773			
	OBS3	0.709			
TRI	TRI1	0.741	0.715	0.707	0.667
	TRI2	0.645			
	TRI3	0.613			
BIU	BU1	0.812	0.923	0.908	0.843
	BU2	0.822			
	BU3	0.890			
	BU4	0.850			

4.6. Confirmatory Factor Analysis Results

Confirmatory factor analysis was performed to obtain a good model fit, and then predicting the model with hypotheses using the AMOS structural equation modeling was tested. The Fornell–Larcker criterion is essential, which measures the assessment of factor-loading methods for examining discriminant validity (DV), composite reliability (CR), and average variance extracted (AVE) [47]. Convergent validity (CV) was evaluated using the measurement model by determining whether each indicator's approximated pattern

coefficient variance on its projected original construct variable is significantly greater than two times its average error. Table 2 displays the model estimation for legitimacy and dependability assessment that contains factor loadings, Cronbach's alpha reliability (α), composite reliability (CR), and average variance extracted (AVE). Table 2 displays that the factor loadings exceeded 0.4. As proposed by the researchers in the study [48], findings indicate that constructs are highly correlated with each other. In addition, AVEs surpass 0.5, and all composite reliability (CR) values exceed 0.7. Additionally, Cronbach's alpha values (α) are all over 0.7, which represent the existence of consistent reliability. Table 3 displays the square root of AVE values, indicating abundant discriminant credibility and satisfying the demands required to continue the upcoming phase of CFA. The following model fit indices were used as statistical estimates for the confirmatory factor analysis results: good fit indices (GFI), comparative fit index (CFI), Trucker–Lewis indices (TLI), normed fit index (NFI), relative fit index (RFI), and incremental fit indices (IFI) needed >0.90, and root-mean-square error of approximant RMSEA value required less than 0.08. In this study, the result shows that the model is appropriate. The goodness of fit indices of the measurement model given in Table 4 for the confirmatory factor analysis also indicated a good fit.

Table 3. Discriminant validity of the constructs.

Construct	TRI	SR	QoS	UniS	EU	U	US	RA	CO	COX	OBS	BIU
TRI	0.816											
SR	0.253	0.955										
QoS	0.009	0.073	0.945									
UniS	0.055	0.058	0.008	0.964								
EU	0.039	0.101	0.003	0.073	0.944							
U	0.217	0.904	0.104	0.178	0.218	0.910						
US	0.042	0.051	0.009	0.068	0.043	0.061	0.972					
RA	0.057	0.313	0.065	0.019	0.051	0.295	0.053	0.781				
CO	0.030	0.054	0.024	0.025	0.029	0.056	0.018	0.047	0.922			
COX	0.078	0.266	0.015	0.109	0.094	0.208	0.097	0.009	0.030	0.841		
OBS	0.35	0.240	0.033	0.076	0.065	0.183	0.052	0.081	0.004	0.804	0.860	
BIU	0.057	0.069	0.036	0.030	0.009	0.163	0.009	0.054	0.014	0.109	0.073	0.918

Table 4. Goodness of fit indices of the measurement model.

Model Fit	X^2	df	X^2/df	GFI	AGFI	CFI	TLI	IFI	RMSEA
Recommended value	-	-	<0.5	>0.8	>0.8	>0.9	>0.9	>0.9	<0.08
CFA value	2741.107	609	4.501	0.880	>0.870	0.918	0.900	0.918	0.076

5. Results

Structural Equation Modelling Results

The path coefficient analysis given in Figure 2 indicated that eight out of eleven hypotheses of the study were found to be significant. The paths for hypotheses H_3, H_8, and H_{10} were not supported.

The threshold for the fit indices was given above. The model has an adequate fit, according to the fit indices given in Table 5.

R-squared, also known as squared multiple correlations (SMC), provides a measure of the variation (%) that the variables' predictors reflect [49]. R2 results given in Table 6 lead to the overall conclusion that predictors quite adequately account for their respective variables. The hypotheses including direct effects of the quality of service (H_3), compatibility (H_8), and observability (H_{10}) on behavioral intention to use video conferencing tools were not supported. From the strongest to weakest significant relationship, complexity affected significantly but negatively the behavioral intention to use video conferencing tools ($\beta = -0.670$, $p < 0.05$), and it predicted 44.9% of the variance in behavioral intention to use.

Trialability positively affected and predicted 30.3% of the variance in behavioral intention to use (β = 0.550, $p < 0.05$). University support positively affected and has predicted 29.6% of the variance in behavioral intention to use (β = 0.544, $p < 0.001$). Ease of use positively affected and has predicted 26% of the variance in behavioral intention to use (β = 0.510, $p < 0.001$). Student readiness positively affected and predicted 25% of the variance in behavioral intention to use (β = 0.500, $p < 0.001$). User satisfaction positively affected and predicted 23.7% of the variance in behavioral intention to use (β = 0.487, $p < 0.001$). Usefulness positively affected and predicted 12.2% of the variance in behavioral intention to use (β = 0.350, $p < 0.001$). Relative advantage positively affected and has predicted 11.6% of the variance in behavioral intention to use (β = 0.340, $p < 0.05$). The hypothesized model's predictive power is considered to be adequate.

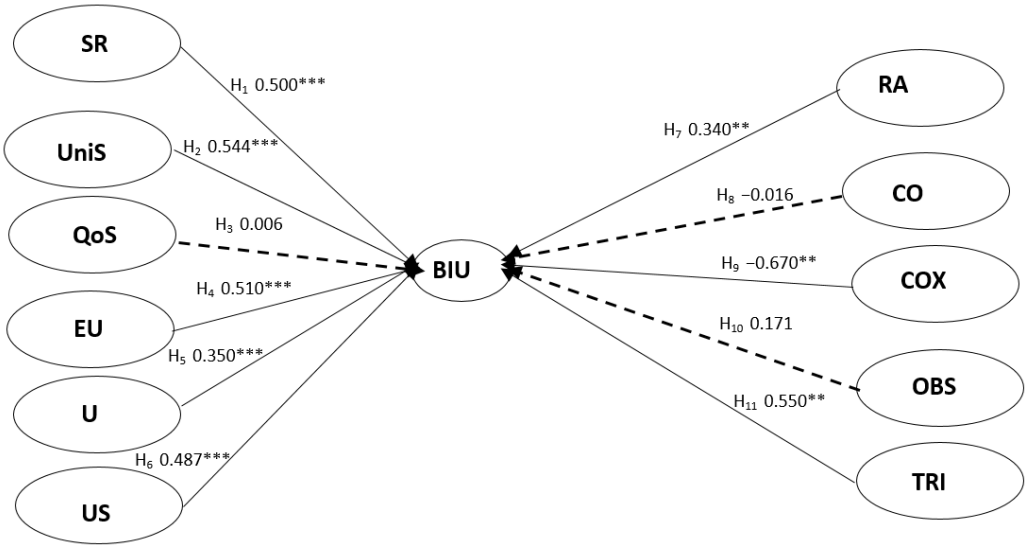

Figure 2. Hypothesized model results (** $p < 0.01$; *** $p < 0.001$).

Table 5. Goodness of fit indices for the structural model.

Model Fit	X^2	df	X^2/df	GFI	AGFI	CFI	TLI	IFI	RMSEA
Recommended value	-	-	<0.5	>0.8	>0.8	>0.9	>0.9	>0.9	<0.08
CFA value	2516.021	840	2.995	0.890	0.860	0.940	0.933	0.941	0.0646

Table 6. Hypothesis testing results (*** $p < 0.001$).

Hypothesis	Impact	Estimate β	R^2	Standard Error (SE)	Critical Ratio (CR)	*p*-Value	Supported
H1	SR→BIU	0.500	0.250	0.013	8.002	***	Yes
H2	UniS→BIU	0.544	0.296	0.017	31.446	***	Yes
H3	QoS→BIU	0.006	0.004	0.009	0.734	0.463	No
H4	EU→BIU	0.510	0.260	0.012	4.107	***	Yes
H5	U→BIU	0.350	0.122	0.014	8.052	***	Yes
H6	US→BIU	0.487	0.237	0.015	33.360	***	Yes
H7	RA→BIU	0.340	0.116	0.025	2.747	0.006	Yes
H8	CO→BIU	−0.016	0.001	0.030	−0.548	0.583	No
H9	COX→BIU	−0.670	0.449	0.260	−2.579	0.001	Yes
H10	OBS→BIU	0.171	0.029	0.021	0.803	0.422	No
H11	TRI→BIU	0.550	0.303	0.023	2.433	0.005	Yes

6. Discussion

The aim of the study is to identify and validate the determinants of students' behavioral intention to use video conferencing tools in their learning experiences during the sudden COVID-19 outbreak in a developing and technologically disadvantaged country such as Somalia. The study integrated the TAM and DOI models to understand students' desire to use VCTs as tools to promote their learning during the COVID-19 pandemic through an assessment of the literature on e-learning and video conferencing tools. The TAM and DOI constructs were used to discuss the findings.

Three out of eleven hypotheses of the study were not supported; two of these (observability and compatibility) are from DOI constructs and one (quality of service) is an external factor regarding the TAM model. Discussion of the results for each hypothesis tested is given below:

It was found that the quality of service was not a determining factor in students' intention to use video conferencing tools. In a study, quality of service was reported to have less effect on non-adopters of mobile learning applications [37]. It can be concluded that the abrupt transition and enforcement of using video conferencing tools in Somalia, which is considered a non-adopter of such technology, has an unnoticeable effect on the students' intention to use video conferencing tools. A study conducted in Somalia involving participants' views was not affected by the quality of service provided in education, which implies that participants think they already make progress as compared to the earlier stages no matter what the quality is [50].

The degree to which a new tool is viewed as being compatible with the needs, values, and prior experiences of users concerning the intention to use video conferencing tools is referred to as compatibility. According to a study by [51], users are most likely to use a certain innovation when perceived compatibility is higher. Students will be more inclined to use video conferencing if they match the manner in which they prefer to communicate with others. For instance, it is likely that students who frequently use video conferencing for social and professional purposes will also adopt this innovation for interaction. However, the case for this study is different; students of Somalia could not match it with the way they prefer to communicate with their peers. Most probably, this is because they are not quite accustomed to using such tools in their daily life, or they could not use them enough to have some opinion on whether such tools match their daily experiences. Therefore, compatibility is not among determining factors of students' intention to use video conferencing.

The term "observability of an innovation" refers to how easily the advantages of an innovation can be seen and conveyed by other members of a social system [39]. For some tools to be observable, a student must be able to use video conferencing tools at any time and from any location without encountering problems, be able to observe the results right away, and be able to explain the advantages of accessibility to others. However, the sudden change could not give adequate time for students to expose properly to such innovation. Therefore, they have little or no information about it and its advantages, which yields no effect on their intention to use video conferencing tools.

Relative advantage is the idea that a new system makes it possible to complete a task more quickly or effectively than is already possible. It is possible that the students in our sample may consider videoconferencing tools to be innovative, and it presents a new benefit and meets their expectations. Another reason is that the benefits of employing video conferencing tools are becoming clear to students. The findings of the study are compatible with the relevant studies. Relative advantage has a positive impact on students' intention to use mobile learning applications [37].

As stated in the study by [52], trialability is among the key variables influencing user intention. The adoption of new technologies is based on a variety of factors: the technological context, the perceived relative benefits (gains), organizational and technical compatibility, the learning curve, trialability (pilot test/experimentation), and observability (visibility/imagination) of the application [53]. Therefore, students are likely to be convinced to use video conferencing tools since they were seeing the actual benefits through

trying them. It was indicated that some universities in Mogadishu, Somalia, were already shifting their education to virtual learning from 2018 [54]. Most probably, some students had a chance to try video conferencing tools before, so they have the intention to use video conferencing during the pandemic.

According to [52], users' behavioral intention to utilize e-learning systems was substantially impacted by innovation features such as complexity. The uptake of innovation will be inhibited when the information system is too complicated [42]. It was reported by a study conducted by Sub-Saharan African university students that they who might lack digital skills might also avoid online education. When students lack the fundamental abilities—social and technical skills—they may adopt a pessimistic outlook. Some students may get humiliated by their inability to use adaptive technologies and refrain from participating in online learning activities out of fear of criticism [8].

Students must be well-prepared and ready and have a strong desire to engage in video conferencing tools. The results of the study show that student readiness plays a key role in defining the intentional usage of students, which concurs with earlier findings for language classes using online flipped learning [35]. It is important to identify student preparedness for institutions to make proper decisions to improve learning [55].

A significant positive influence of the usefulness of video conferencing tools on students' intentions to use is another finding from the study. The findings are also in line with an earlier study [28]. As students realize the usefulness of video conferencing tools in learning, their behavioral intention will increase. This ultimately results in better real utilization. Usefulness favorably influenced future intentions to utilize video conferencing tools, though to a smaller extent than with the ease of use, and this result is consistent with earlier research [56].

It was an expected finding that individual use of a certain innovation heavily relies upon recognition from the administration side, in this case, the university. Authoritative facilitators such as university administrations have a determining and positive effect on students' intention to use video conferencing tools. This is in line with the study findings. Preparing and supporting students with the help of the administration is essential for the successful utilization of such innovative tools.

The positive relationship between user satisfaction and behavioral intention agrees with other results obtained by [38]. Individual satisfaction had a considerable favorable impact on intentional usage. Hence, the more pleased students are, the more likely they utilize the videoconferencing tools in the future. While this study's findings showed the direct positive effect of user satisfaction on behavioral intention to use, earlier results of a study found that user satisfaction positively affects perceived ease of use and perceived usefulness in blended learning, however, having no direct effect on blended learning use [29].

7. Conclusions

The COVID-19 pandemic has disrupted university students' learning. Video conferencing tools have emerged as an emergency response to deal with the disruption in higher education because the current scenario has imposed special problems for preserving the process of teaching and learning. This study is an early attempt to identify important variables that may influence whether video conferencing usage is accepted in higher education and how closely these variables connect to utilizing video conferencing tools to promote learning. This study might offer further clarity on how video conferencing tools can be successfully implemented. Theoretically, this research adds to the literature by demonstrating the most important elements of student engagement with video conferencing tools in e-learning during the COVID-19 pandemic. The outcomes of this study have the potential to explain how well such innovation was implemented in a developing country using the TAM-DOI model constructs.

Students' desire to use web-based video conferencing for learning is influenced by student readiness, ease of use, usefulness, user satisfaction, university support, relative

advantage, trainability, and ease of complexity. As long as these factors are satisfied, students are willing to use video conferencing tools. The reasons for continuing to use technology may vary among various user groups. Particularly in a developing nation such as Somalia, the suggested model showed substantial explanatory power regarding the behavioral intention to utilize video conferencing systems. A favorable attitude from the students can be anticipated as long as the VCTs are able to stimulate them. The study's conclusions include information on the most popular techniques for assuring ongoing instruction between instructors and students who interact and communicate synchronously.

The video conferencing tools as a solution to keep teaching and learning practices ongoing has cemented their position in the education arena. Video conferencing systems will undoubtedly be used more frequently. To do this, there is still a clear and pressing need to comprehend how video conferencing capabilities may be used to create engaging learning environments that support learning goals.

Lessons learned from the study findings are that, at the university level, students' engagement level with cutting-edge tools for their learning is satisfactory when considering the entire country's poor internet infrastructure, accessibility issues, and lack of digital skills and equipment. However, this may be valid at the university level only; other institutions and governments should invest in improving the infrastructure and let each student an equal chance of access to the tools. No matter what the quality of education delivered is, students have positive views about their intention to use cutting-edge tools in their learning since they compared it to the earlier status of the country. Sudden disruption causing an immediate and unexpected shift to online learning might have provided little time for students to observe, try, and share the new technology. The post COVID-19 era will be beneficial for getting new experiences with such tools.

8. Implications

As for the theoretical implications, including multiple theories in a unified model such as the study employed helps to clarify important concepts. Our findings also support the unified model's ability to explain behavioral intention in the context of video conferencing.

As for the practical implications, institutions can use the advantages of video conferencing tools, such as their pervasiveness, usefulness, support, and resources available, when desired to support high-quality teaching and learning environments.

9. Limitations

The study's findings are delimited within the scope of the variables considered in the TAM-DOI model. Another drawback of this study is the dearth of research conducted in the Somalian environment. There have not been many publications in the fields of education and ICT due to Somalia's lengthy history of internal strife and government instability. This scarcity of research also constitutes the significance of the study conducted.

Although COVID-19's exceptional situation exposed the weaknesses of Somalia's higher education institutions, in that they were not very well-equipped and unprepared to supply higher-quality content with adaptable academic personnel and learning technologies, the results were based on the sample that apparently has more favorable accessibility to ICT sources and internet infrastructure, which focused in the capital city of Mogadishu rather than sample from rural areas with poor or no internet access and ICT infrastructure. Therefore, steps can be taken to direct or redirect already-existing resources in that direction. However, the challenge lies in overcoming Somalia's lack of an educational system.

10. Future Recommendations

In the future, the results of this study could be compared to the sample who are already accustomed to using video conferencing tools. Training programs on how to utilize such innovations properly could be recommended to ensure their efficient use of them. In order to guarantee that learners receive high-quality instruction and learning outcomes, educational institutions must create an effective strategy for implementing conferencing

tools into learning management systems suitable for each distinct level of study. Different methodologies, samples, and strategies can be used in the future to provide additional insight into students' and instructors' engagement.

Apart from student readiness, technology and pedagogical readiness should be important and should further be investigated. Further investigation could be conducted with a larger and more diverse sample.

However, the findings provided important information about how Somalia's higher education perceived video conferencing from students' perspectives. Further analysis would be beneficial for future research to determine the extent to which the e-learning experiences discovered in this study may be applicable to the general student population who partake in comparable technologically enhanced learning activities.

Governments should spend money on providing affordable internet and distributing gadgets to all teachers and students in order to guarantee equity and inclusion in online education. The curriculum for online education should also be made available by the ministries of education, along with instructions on how to run online classes.

The instructional environment for students was another significant issue. Governments and parents both play a critical role in fostering an atmosphere that is favorable to learning.

Local institutions need to have the expertise and procedures to offer their students technical and pedagogical support if they are to succeed with the adoption of e-learning. The academic staff must build pedagogical expertise that is suitable for implementing ICT-based, self-directed learning methods that support lifelong learning. To improve the social reinforcement of e-learning, there has to be greater community knowledge of ICT use.

Author Contributions: Corresponding author, S.B., contributed to the manuscript's theoretical development, analysis, interpretation, and writing. Conceptualization, S.B.; Data curation, S.B.; Formal analysis, K.A.H.; Investigation, S.B. and K.A.H.; Methodology, S.B.; Project administration, S.B. and K.A.H.; Resources, S.B. and K.A.H.; Software use, S.B. and K.A.H.; Supervision, S.B.; Validation, S.B.; Visualization, K.A.H.; Writing—original draft, K.A.H.; Writing—review and editing, S.B. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Every ethical standard for research was followed in this article. The University's Scientific Research Ethics Committee granted the study's ethical approval (NEU/FB/2020/93). Respondents were informed of the study's goals, its confidentiality, and the fact that it was being performed purely for scientific purposes by a written statement on the first page of the questionnaire. The fact that participation was completely voluntary and that consent might be revoked at any moment was also made clear to the participants. Thus, only those who were eager to participate filled out the form.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The datasets used and analyzed during the study are available upon request to the corresponding author.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. The questionnaire of the study.

Student readiness
1. I would likely to finish assignments using VC with the help of online help feature.
2. I would likely to finish assignments using VC with the help of a peer helping me how to use it.

Table A1. *Cont.*

3. I would likely to finish assignments using VC since I feel confident about using it.
University support
4. If I receive the necessary help form the instructor, I will probably use VC.
5. If the institution gives me required training, I will probably use VC.
6. If I know where to ask for help when required, I will probably use VC.
7. If the institution provides adequate assistance, I will probably use VC.
Quality of service
8. VC should work without any malfunction.
9. VC should be constantly accessible.
10. VC services should be loaded instantly.
11. VC services should be user friendly to go through.
12. VC services should be simple to understand.
13. VC services should be current.
14. VC services can be adjusted with respect to requirements.
15. VC services should be safe to use.
16. VC services should protect the privacy of users.
Ease of use
17. I think using VC would be easy for me.
18. I think it would be simple for me to learn how to use VC.
19. I think my engaging with VC is straightforward and easy to understand.
20. I think VC is easy to work with.
21. I think, I can easily find my way through when using VC.
Usefulness
22. Using VC would likely to be beneficial for my studies.
23. Using VC would likely to provide completing my assignments faster.
24. Using VC would likely to provide more fruitful experience in my studies.
25. Using VC would likely to improve my efficacy in my studies.
26. Using VC would likely to enhance my performance in my studies.
User satisfaction
27. VC systems are effective.
28. VC systems are efficient.
29. Overall, I am satisfied with VC systems.
Relative advantage
30. The overall quality of my schoolwork is improved by using VC.
31. I can access my lecturer easily by using VC.
32. Using VC systems increases my productivity.
Compatibility
33. My learning style is supported by the usage of VC.
34. I have confidence when using VC.
35. I am not worried by the possibility of being seen as a non-expert when it comes to using VC.

Table A1. *Cont.*

Complexity
36. I find it difficult to learn how to use VC.
37. I find it difficult to handle my schoolwork with VC.
38. I find the challenges that come with learning how to use VC worrying.
Observability
39. Most of my classmates use VC.
40. I have seen VC being used in learning.
41. The results of using VC are so obvious and visible.
Trialability
42. I am always the first one to try VC as a new technology amongst my friends.
43. I am willing to receive assignments and classwork through VC.
44. I was able to try using VC with one of my courses before I made a decision to use VC for all my courses.
Behavioral intention
45. I plan to use VC in my studies.
46. I anticipate making extensive use of the VC system.
47. I intend to use the VC in the future.
48. I recommend VC to others.

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