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Analyzing the Nexus of Institutional and Individual Factors on Students' Willingness for Online Learning among Universities Students

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ABSTRACT

The reasons why students choose online learning at educational institutions are investigated in this qualitative and inductive study. The researchers used a triangulation strategy that comprised documentation, participant observation, and semi-structured interviews with undergraduate and graduate students from three different universities to guarantee the results were accurate and reliable. By examining the information gathered from various techniques, the research aims to provide insightful insights into the decision-making process of students who choose to learn online. Grounded theory was used in our study to manually examine the data and create three categories: empirical themes, theoretical concepts and theoretical dimensions. Our research looked at the aspects that contribute to the climate of online learning and how they affect students' desire to utilize it. One of our most important findings was that both institutional and individual variables affect students' willingness to utilize online learning. In addition, online learning has been important, individual factors that are computer anxiety, student engagement and subjective norms becoming important factors to influence student's willingness. Students understand themselves as having benefitted from online learning and they believe this benefit extending beyond their students lives. Respondents were in view that online learning has certain boundaries so students develop their competencies and avoid challenges that would prevent them from using online learning like computer anxiety. Furthermore, the impact of online learning is not only predicated upon the students' willingness to take an active role, but also greatly affected by institutional factors. These factors include the attributes of the system, including the level of design and user-friendliness of the online platform, as well as the technical and equipment readiness of the institution.

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1. Introduction

On January 30, 2020, the corona virus epidemic was officially recognized by the World Health Organization (WHO) (McIntosh, 2020). Online learning has emerged as a viable alternative for educational institutions worldwide that have been forced to close (Aguinis, Villamor, & Gabriel, 2020; Brammer, Branicki, & Linnenluecke, 2020; Laasch, Moosmayer, & Arp, 2020; C.-L. Tsai, Ku, & Campbell, 2021). Distance education, blended learning, and self-paced learning were among the new learning technologies and modalities that management academia had a hard time accepting throughout the two years of online learning (Garaus, Furtmüller, & Güttel, 2016; Whitaker, New, & Ireland, 2016). The advent of online communication as the only means of instruction, learning, and social interaction forced educators and students to adjust to a new reality (Chasi, 2022; Hofer, Nistor, & Scheibenzuber,

2021). The effects on students' health and academic performance during the emergency learning period have been the primary focus of research on online emergency classes in higher education (Clabaugh, Duque, & Fields, 2021; Hofer, Nistor, & Scheibenzuber, 2021). After the first semester of online education, there is a dearth of data on online learning. We contend that the shift to emergency online learning constituted both a crisis and a chance for significant change, based on a theoretical framework that sees emergencies as opportunities to transform (Brockner & James, 2008; Nicolini, 2009). According to Schneider, Kallis, and Martinez-Alier (2010), a crisis might be seen as a chance to reevaluate things and find new ways forward, which could result in long-term improvements. In light of the current COVID-19 epidemic, it is certain that institutions throughout the globe have had to implement both synchronous and asynchronous class schedules (Crawford et al., 2020). Research into and development of methods for online education is receiving more attention than ever before. Due to the significant changes that both students and teachers have experienced over the past few years, relevant online learning instructions and practices will continue to be used even after the pandemic ends. This is especially true in higher education institutions (Zhao & Watterston, 2021). And because of this influence, it strengthens the capacity of teaching and learning through provision of an effective and efficient channel for educational E-learning systems (Alfraih & Alanezi, 2016). In addition to that, various research studies have also argued that teachers' teaching quality exerts significant influences on students' learning outcomes (Gaertner & Brunner, 2018). Thus, university students believed that online learning would improve their performance or learning process , if they will to use them; online learning environments have some certain characteristics in terms of contents, up to date material, and catering the needs of students better (M. Ali, Raza, Qazi, & Puah, 2018; Tarhini, Hone, Liu, & Tarhini, 2017; Tarhini, Masa'deh, Al-Busaidi, Mohammed, & Maqableh, 2017). Though the online system of education is viewed as relatively new, comfort level of the student with technology was critical to satisfaction with online learning, It will be just as effective as traditional-based techniques in enabling students to develop confidence in studying at a distance by engaging them in online active and interactive experiences (Russell & Murphy-Judy, 2020).

Findings of different scholars have also identified the association of online willingness with different factors such as "Self-management of learning and Comfort with e-learning Smith, Murphy, and Mahoney (2003), online communication self-efficacy (Palloff & Pratt, 1999; Roper, 2007), motivation for learning (Fairchild, Horst, Finney, & Barron, 2005; Ryan & Deci, 2000), learner control (Hannafin, 1984; Shyu & Brown, 1992), internet self-efficacy and computer self-efficacy (Bandura, 1986; Hung, Chou, Chen, & Own, 2010; C.-C. Tsai & Lin, 2004; M.-J. Tsai & Tsai, 2003), self-directed learning (Garrison, 1997; Guglielmino, 1977; Lin & Hsieh, 2001; Smith, Murphy, & Mahoney, 2003), have highlighted competencies required to use the technology were identified as the perceived strengths of online learning. Because of social distancing, this will have negative effects on learning opportunities of students. Educational institutions are struggling to find online learning as best solution to protect and save students education affected due to Covid-19 crisis (Dhawan, 2020). Online education has replaced more conventional forms of classroom instruction as a result of the global spread of the COVID-19 epidemic. Despite the current emphasis on the importance of online learning, there is a lack of study about its impact on student willingness in challenging circumstances, struggling economies, and the higher education system in Pakistan, according to the authors' knowledge. The problem is well recognized but has not yet been extensively examined (Nicholson, 2007). One of these difficult circumstances may be students dealing with education in a higher education system tremendously impacted by a pandemic, given the growing prevalence of online learning throughout the world. A flurry of research into the area was prompted by the emergence of numerous opportunities and challenges related to online learning, university education, and COVID-19. Thus, it seems crucial to explore whether online learning could improve the willingness of students through investing different factors. In addition, to expand upon this area of research, the current study delves into how individual and institutions factors impact student's willingness for online learning. By identifying and addressing this research gap, educators and policymakers can better design and implement effective online learning strategies that cater to students' needs and enhance their learning outcomes.

2. Literature

2.1. Online Learning

In the 1990s, the term "e-learning" was coined to denote the process of learning that is facilitated by technological advancements. The integration of pedagogy into e-learning has become increasingly important as instructional design and technology have advanced. Over the past few years, this educational approach has been significantly influenced by higher education, further education, and e-learning. The possibility now exits to provide distance education to learn from anywhere, at any time, in any rhythm, and with any means by using a computer connected to a network (Cojocariu, Lazar, Nedeff, & Lazar, 2014; McBrien, Cheng, & Jones, 2009). However, the main premise of online learning described by Ong and Lai (2006); Welsh, Wanberg, Brown, and Simmering (2003) is "online learning can be done primarily over or through the internet by the use of computer network technology to deliver information and instructions to the learners". In such an environment, students can be anywhere independently to learn and interact with instructors and other students (Singh & Thurman, 2019). In different studies conducted by Alterri, Hindi, AlMarar, and Shubair (2020); Perry (2011), it is believed that online learning has always appealed to students who have constraints that make in-person attendance impossible or difficult or who reside far from learning facilities. During this tough time, the concern is not about whether online teaching-learning methods can provide quality education; it is rather about how academic institutions will be able to adopt online learning in such a massive manner (Mohammed Boudiaf of Msila -Algeria Hai el Djor -Lotissement Indidviduel -N et al., 2020). It is well-suited to today's lifestyles and provides anytime, anywhere learning in an environment where the Internet appears to be ubiquitous. With the expansion of the Internet in several industries, such as its potential cost-effectiveness and ability to bring about learning in a worldwide classroom, online learning has gained much traction. The concept of e-learning, this problem is well recognized but has not yet been extensively examined (Nicholson, 2007). Education researchers must immediately concentrate more resources on understanding the possible effects of online or blended learning on students' mental health, particularly the likelihood that they may experience more negative emotions such as anger, sadness, bewilderment, and frustration both during and after their time in academic life (Dhawan, 2020; Favale, Soro, Trevisan, Drago, & Mellia, 2020; Seijts, Monzani, Woodley, & Mohan, 2022). Many activities, especially educational ones, had to be suspended because of the COVID-19 epidemic. In order to slow the spread of the epidemic, universities, schools, and colleges had to switch to e-learning by making use of the existing educational platforms. The COVID-19 pandemic has necessitated the suspension of in-person education, resulting in adverse effects on educational endeavors. The enforcement of social distancing measures is of utmost importance (Maatuk, Elberkawi, Aljawarneh, Rashaideh, & Alharbi, 2022). This closure has enabled the proliferation of remote education initiatives as a viable alternative to traditional in-person education in its many manifestations. As a result, numerous educational institutions have joined together to determine the most efficient approaches for sharing course content.

3. Research Methodology

3.1. Research design

This study aims to shed light on discretionary choice making and understand how contemporary students perceive it, rather than finding a solution to a preconceived challenge (like functionalist research). Therefore, in order to allow for contextualization, detailed description, and an understanding of subjective perspectives, we used a qualitative inductive research strategy (Lee, 1999; Rogelberg, 2004). Zalaghi and Khazaei (2016) emphasized the importance of inductive reasoning by describing it as a "bottom-up" approach to knowing, where the researcher either describes the phenomenon being studied or uses observations to build an abstraction, thus enhancing the applicability of the inductive approach. Moreover, the interpretative paradigm facilitated the study of social and organizational phenomena by considering the many interpretations that individuals assign to different occurrences (Orlikowski & Baroudi, 1991). Therefore, Students who had participated in distance learning classes at their universities were thus contacted to facilitate the following interpretative paradigm discussion. Each interview lasted 1 hour and 15 minutes in total. The demographics of the respondents were as follows: over 83 percent were male, their age ranged from 20 to 25 years and they were undergraduate and graduate students. This grounded theory approach follows an inductive process, with the goal of developing theory based on naturally occurring evidence (Morse, 2016). Practitioners of grounded theory do not start with preexisting ideas in order to validate or invalidate anything. Grounded theory is helpful for expanding research

methodologies because it employs innovative problem-solving techniques and provides inventive insights. The cases were classified using non-probability sampling methods, which included Purposive sampling (Sandelowski, 1995). If one wants to learn more, acquire insight, and find more, one must choose a sample from which to draw, as stated in Yazan (2015), which is the fundamental assumption of purposive sampling.

3.2. Data collection method (interviews, observations and documentation)

In order to address the research issues posed by this triangulation study, three primary methods of data gathering were put into action, including:

"Documentation," "Semi-overt participant observation," and "open-ended interviews".

Open-ended interviews were conducted using open-ended questions to gauge respondents' opinions on online education at the university level. As it allows us to uncover new linkages, interviews are considered by researchers to be one of the most effective methods for exploratory investigations (Daniels, Bilksy, Chamberlain, & Haist, 2011). Furthermore, a deep understanding with informants is made possible through interviews. The researchers in this study opted for semi-structured interviews because of the more flexibility they offered in crafting the questions. According to Kothari (2004), semi-structured interviews enable interviewers to ask supplemental questions or skip some topics if necessary. Because of this, we prefer conducting semi-structured interviews, whose questions allowed us to get thorough foundations of the phenomena we were exploring.

There are six distinct kinds of questions that might be useful in a research study, as defined by Patton (1990): (a) inquiries about past or current actions about the individual's experiences or conduct; (b) personal view/worth questions regarding the individual's thoughts and beliefs regarding a given situation or issue; (b) regarding the individual's feelings in relation to that situation or issue; (c) regarding the individual's knowledge in relation issue or situation; (e) in relation to the individual's sensory response to that problem or circumstances; and (f) regarding the individual's background or demographic characteristics. To better comprehend the phenomena, the researcher is led to ask themselves each of these questions. In order to get participants to talk about how they felt about the quality of online learning, this research used a bunch of different questioning strategies. Our meticulous consideration of each institute was based on the availability of the online learning we were interested in. A total of all undergraduate and graduate students were invited to participate in an interview. For the interview, we chose fifteen students from every single institution. Interviews were place wherever the participants were most comfortable, including their classrooms, or even the universities library. Based on the discussion between the interviewer and the respondents, each student was interviewed for at least one to one and a half hour.

Observations are a crucial aspect of qualitative research because they let the researcher see whether the participant puts their interview answers into practice while taking classes online. By combining participant observation with interviews and document analysis, a more complete picture of the phenomena under research might be uncovered (Merriam, 1998). About three months' worth of data was received, but the most important time for it to be seen was in the last two months. Extensive field notes were meticulously documented during the observing phase. The participants' study habits were documented, along with details about their physical study environment. The researchers also looked for trends and patterns in the students' performance data, such as grades and progress reports, to see where the students were doing well or poorly. Lastly, they recorded the participants' level of active or passive involvement in their online learning.

Documentation, Any information that is accessible to the researcher for analysis and exists in a written or printed form, whether for private or public consumption, is considered a document according to Fraenkel, Wallen, and Hyun (2018). So, as well as the class curriculum and participant-submitted tasks, we also gathered images, and participants' email correspondence. All participants were asked to fill out paperwork related to their online learning. Everything from the course outline and exams to study notes, emails, and forum posts were part of these materials. The majority of the users' papers were printouts from their own course sites. Observations, interviews, and documentation were employed to ensure the reliability and accountability of the data. Researchers wanted to see if there was a link between

the subjects' actions and the answers they gave in interviews. One of the main points of the study was to see how well the interviewees' and observers' reports described what usually happens in online classes.

3.2.1. Use of technology

In order to enhance the investigator's attentiveness to the responses, each interview was recorded on a digital recorder. Following the methodology outlined by Spradley (2016), I began each interview by asking fundamental questions such "*Can you tell me how do you feel the environment of your university or how can you express your online experience with your university?"* Throughout each interview, I made sure to clarify certain concepts or words by asking for clarification (e.g., "*what you do as a student if someone told you online learning is difficult to use?"*

We verified these themes in subsequent interviews after obtaining distinct themes. By doing so, I was able to initiate casual conversation and interview students. The interview sessions typically lasted between one and two hours. Initially, professional transcribers transcribed all interviews to guarantee their accuracy, and subsequently, researchers reviewed them.

3.3. Ensuring generalizability, validity and reliability issues in the research

Replication and imitation are not feasible in qualitative research due to the context-specific nature of each interpretation and meaning (Beverland & Lindgreen, 2010). Consequently, qualitative research that investigates social phenomena is unable to be replicated or imitated as the world changes, as stated by Strauss and Corbin (1998); Tobin (2012). This is the reason qualitative researchers in the business, social, and management domains do not prioritize external validity (Amaratunga, Baldry, Sarshar, & Newton, 2002). Nevertheless, the importance of internal validity (Merriam, 1998) or authenticity is paramount in any qualitative study (Sinkovics & Alfoldi, 2012). The fundamental inquiry is, "To what extent do the results correspond with reality?"(Merriam, 1998). It endeavors to offer authentic and consistent perspectives on individuals' experiences by actively attending to their voices, observing their actions, and accurately reflecting them (Ghauri, 2004; Strauss & Corbin, 1998). According to research scholar such as Cutcliffe and McKenna (1999), the quality of interpretations can be improved by incorporating four factors: credibility, consistency, transferability, and conformability. Consequently, this investigation addresses these four criteria to guarantee reliability, as per the research conducted by Merriam (1998), which underscores the importance of consistency and dependability in the establishment of reliability in qualitative research.

Conformability: Two critical procedures ensure conformity: initially, we assure the confidentiality of the shared information to establish a high level of trust between the researcher and the participants (Beverland & Lindgreen, 2010). Consequently, we verify our findings by gathering a variety of perspectives from the participants regarding the subject matter. A comprehensive description of the research project is furnished to all relevant participants, along with a letter from the Institute of Business Administration, Shah Abdul Latif University, Khairpur, guaranteeing that their data and identities will be protected with passwords and will not be disclosed to any third party. Informal conversations are initiated with all participants to gain insight into their academic, institutional, and cultural backgrounds before formal discussions are conducted.

Credibility: In order to determine the credibility of our study, we used a mix of research techniques, including interviews, documentation analysis, and participant observation. The objective was to collect a range of viewpoints by conducting semi-structured and thorough interviews with individuals from all three educational institutions.

Transferability: In order to ensure transferability, we deliberately chose three different institutions that have diverse institutional frameworks. By using this method, we were able to gather data from these three institutions and analyze the results in order to identify similarities and differences.

Dependability: In order to attain dependability, we requested participants to concentrate on their previous and current occurrences. During the interview, we especially asked about the distinctions between online learning and conventional in-person learning.

Ethical consideration: It was imperative to prioritize ethics in the study, as Merriam (1998) asserted that the quality of a qualitative study is contingent upon ethical conduct, particularly when human subjects are involved. In an effort to preserve ethical standards, a variety of measures were implemented, such as the use of informed consent, the preservation of the privacy and confidentiality of information and identities, and the provision of an information sheet to participants that included the research detail, institutional affiliation, contact information, and details of the interviewer. All participants were guaranteed that their information would be kept confidential and would not be disclosed to their institutions. The option to permit recording and to terminate it at any time was provided to them. In addition, informants had the option to decline to respond to any inquiries, with the assurance that their identities would be concealed during the transcription of the interviews, as specified in the Participant Information Sheet (PIS). In addition, it was disclosed that all data would be securely stored electronically for a period of six months, following which it would be deleted.

4. Data Analysis

Given that the research is qualitative in nature, we used an iterative approach using grounded theory to evaluate the collected data. The selection of grounded theory was based on its significance. We used a range of manual ways to handle the data. In the first stage, we conducted a comparison of various sections of the data in order to discover shared patterns. These patterns were then assigned codes for the purpose of classification (Gibbs, Kealy, Willis, Green, Welch, & Daly, 2007). Initially, we used coding as a prevalent technique for data reduction (Bowen, 2009), which facilitates data management by breaking it down, conceptualization, and categorization (Ghauri, 2004). Although we did manually throughout the coding process, beginning with word-by-word coding that relied on continual comparison analysis to extract ideas. We employed axial coding at the second step (Strauss & Corbin, 1998) to enhance codes and establish connections between codes that represent comparable ideas. Ultimately, we used second order quotes and allocated conceptual themes to them. We then went on to the third stage, which entailed building and describing code connections. In the third step, we conducted 'pattern matching' by comparing patterns based on empirical evidence with existing theories. We also related our empirical results to larger theoretical literature, which we referred to as theoretical dimensions (Ghauri, 2004). Essentially, we manually coded each line and organized the resulting data into three distinct categories: empirical themes, theoretical ideas, and theoretical dimensions. Individual data points were represented by empirical themes, which are also referred to as first-order quotations or line-by-line coding. Theoretical concepts were combined by creating codes that grouped together first-order quotes that had comparable behavior. Ultimately, the theoretical dimensions were established by connecting all codes to the existing theoretical literature. The primary objective of this whole procedure was to optimize the data in order to enhance comprehension of emergent themes. The following table presents the data structure that has been built based on the collected data and research results.

Table 1: Data Structure

Empirical Themes	Theoretical Concepts	Theoretical Dimension
Supportive environment	Environment support	Student Engagement
Satisfied setting		
Cooperative Learning environment	Interaction	
Interaction with colleagues		
Interaction with staff		
Interaction with teachers		
High concurrent access	System quality	System Attributes
Security		
Responsiveness		
Stability		
Integrity	Information Quality	
Accuracy		
Timeliness		
Updated information sharing	Content quality	
Learning content on Learning Management System		
Esteemed peers pressure	Social pressure	Subjective Norm
Teachers pressure		

Family pressure Colleague students taking classes Other departments' students taking classes		
Attitudes toward computers self-efficacy	Psychological factors	
The extent of experiences with the compute Owning a personal computer	Operational factors	Computer Anxiety
Belief in the positive effects of technology on society	Sociological factors	
Negative beliefs on effects of computers.		
Familiarity with technology Software knowledge Learning Management System	Technical skills	
Basic computer knowledge Basic knowledge of tools	Computer skills	Technological Readiness
Feasibility of internet Affordable Internet package Signal issues	Internet access	
The best internet access financing package(loan plan) for all students Internet devices	Broadband facilities	
Internet access at home		Equipment Readiness
Provide mobile devices Loan Schemes for buying mobile Funding for mobiles to villagers	Mobile devices	

5. Results

We began by developing the theoretical dimensions, or the overarching perspective of theoretical ideas drawn from the empirical themes. Then, we worked our way down to the level of individual theoretical concepts about the perspectives of respondents on understudied phenomena. First, we take a look at student engagement as a theoretical component that has emerged. Then let's have a look at it.

5.1. Student engagement: Interaction and Environmental Support

Literature has conceptualized the term "student engagement" refers to the emotional and psychological investment that a student makes in their efforts to learn, understand, and master the knowledge, skills, or crafts that academic work is intended to promote. It includes the student's interest in, and engagement with, the subject matter, as well as their intrinsic drive to study it. Following the research of Bolliger and Martin (2018), it has been stated that Student engagement play important role in increasing student satisfaction, and student motivation to learn, key option for reducing feelings of isolation, increasing memory, and improving student success in online learning. From the data, two concepts emerged: Supportive environment and interaction. According to our findings, combining all two factors, create the climate of online learning which improves the engagement of students towards university, and its learning.

The two factors are described below, along with a sample response.

5.1.1. Interaction

Student engagement also includes important element that is 'interactions' with peers through collaborative learning and discussions with a variety of individuals as well as student-faculty interactions and effective teaching strategies used by faculty (Abbad, Morris, & De Nahlik, 2009). By fostering an ever-evolving feeling of community, student-to-student interactions ward against boredom and isolation (Bolliger & Martin, 2018). Interaction is an essential in traditional methods of learning as it is in e-learning. The extensive use of e-mails, chat forums, peer assessment, group activities, and discussion boards in e-learning systems facilitates interaction between students and instructional staff, as well as among students (Pituch & Lee, 2006; Siddike, Islam, & Banna, 2015). Relationship building among students is facilitated by these online forums when in-person meetings are not possible (Harrell, 2013; Nicholson, 2007). The following practices were observed to increase the frequency of student-instructor interactions in online classes: (1) the usage of various open channels of communication between students and instructors (Bolliger & Martin, 2018; Gaytan & McEwen, 2007). (2) the frequent communication of announcements, grading rubrics, reminders and

expectations by instructors (Bolliger & Martin, 2018): (3) the provision of consistent and timely feedback to students (Bolliger & Martin, 2018; Chakraborty, 2017) and (4) instructors participating a minimal in class discussions (Mandernach, Robertson, & Steele, 2018).

"Always, teachers always so friendly and guide us in any difficulty so that I may take online class".

"Our teachers always help us and give us feedback during class and after class ends via emails and Whatsapp group"

5.1.2. Supportive Environment

One of the most important aspects in a successful learning process is a 'supportive environment'. Institutions are crucial in creating conducive learning atmosphere that encourages students to participate actively in academics and extra-curricula's. Aiming to establish a supportive learning environment for students to acquire and generate knowledge is the goal of both the institution and faculty members in creating an effective learning environment (Nkomo, 2022). According to Coates (2006), the duration that a learner devotes in participating in different university-related activities is strongly related to how active they are online. In addition, overall productivity increases in a setting that is conducive to learning. Learning and teaching materials may also be found offline. In addition, students are more likely to actively participate when they perceive a supportive environment and have positive relationships with teachers, classmates, and other staff members (Olana & Tefera, 2022).

"There is supportive and encouraging environment and cooperative from teacher's side and student's side as well".

"Environment means vary depends university to university as our university is public universities, I found very good environment and conducive environment where the different teachers and other recourses are available where we can get good facilities and we can learn many things".

5.2. System attributes: Content Quality, Information Quality and Sytem Quality

System attributes are those aspects of a system that users consider when evaluating its usefulness and simplicity. According to Saadilah (2023); Salloum, Qasim Mohammad Alhamad, Al-Emran, Abdel Monem, and Shaalan (2019), system attributes include content quality (CQ), information quality (IQ), and system quality (SQ).

5.2.1. System quality

In relation to the e-learning system, system quality (SQ) dictates how features such as usability, dependability, availability, and flexibility impact user perceptions (Idkhan & Idris, 2023). According to Bhuasiri, Xaymoungkhoun, Zo, Rho, and Ciganek (2012), SQ traits play an important part in accepting and employing an online learning platform. SQ has been demonstrated to have a beneficial impact on perceived ease of use and the perceived usefulness of e-learning in previous studies (DeLone & McLean, 2016).

"University tries to increase its quality of online classes particularly implementing LMS and trying to increase student satisfaction level"

5.2.2. Information quality

The term "information quality" (IQ) is used to describe the process of gathering up-to-date material that might be relevant to a learner's needs in order to facilitate their comprehension while engaging in online learning (Wu & Lin, 2012). Information quality was measured in terms of accuracy, timeliness, completeness, relevance, and consistency (DeLone & McLean, 2016).

"Lectures are online available at Learning Management System (LMS) you can listen you can watch those lectures whatever you are doing at your home, with riding motor bike or driving a car as it is more accessible".

They provided us electronic e-portal account on LMS where teachers updates information that he / she taught us online; we get recorded lectures, assignments by using e-portal on our mobile and is more likely to engage with the system".

5.2.3. Content quality

One of the key aspects that determine whether e-learning is accepted or adopted is content quality (CQ). In e-learning, the content quality (CQ) refers to how in-depth and up-to-date the material is, according to various researchers (Alshammari, 2016; Krishnan, Krishnan, & Muthumari, 2017). Furthermore, content quality has a major impact on perceived usefulness and the perceived ease of use of an e-learning system (Almaiah et al., 2022).

"University give instructions to its teachers reviewed curriculum and designed according to online learning".

"Our teachers design activities and assignments that encourage active participation and critical thinking, which helps students to maintain interest and involvement during online lectures"

5.3. Subjective norm: Social norms

One way to think about subjective norm was as "a part of the social influence variables". . Whether or whether one is encouraged to engage in certain activities is influenced by the people around them (King Abdulaziz University, Binyamin, Rutter, & Smith, 2018). When they have a favorable attitude toward it and believe that those around them believe they should, they will engage in the desired action. This suggests that those close to a student, including family and friends, might impact their behavioral intention towards online learning (Al-Busaidi, 2013). Subjective norms represent the impact of others and the significance of having favorable opinions from others, making them a significant factor in behavioral intentions. It was researched that subjective norm had a substantial impact on the perceived usefulness and perceived ease of use of an e-learning system (Al-Gahtani, 2016).

5.3.1. Social norms

The social pressure that users of online learning systems may feel to utilize the system from esteemed peers, teachers, or family members may influence the user's view of the technology's usefulness. To put it another way, subjective norms refer to how an individual perceives social pressure from those who are important to them (e.g., family, friends, coworkers, and others) to behave (or not) in a certain way, as well as their motivation to follow those people's views (Xu, 2023). A student's performance in an online class is heavily impacted by social norms, which are the guidelines that everyone in the class is expected to follow. Students' attitudes, motives, and actions may be influenced in numerous ways by these standards. To improve the quality and engagement of online learning environments, educators and administrators should get a better understanding of the ways in which social norms influence online learning. Furthermore, Subjective norms are determined by one's perceptions of the extent to which significant individuals want them to do a behavior.

"So being a family I say family member has encouraged me I myself considering I myself student definitely I learn many things from the videos from the lectures from the webinars from the online international conferences".

"Yes, my mother said that it is good idea for the student to get them involved in study during this pandemic, further she said you learn new skills and on the other hand you stay at Home".

"Yes, my class-fellows and other departments' students are taking online classes so that is the reason I take classes and it is amazing experience".

"Class fellows talk about online classes that it's new thing which we should adopt and learn new skills and I am keen to learn new things".

5.4. Computer anxiety: Psychological Factors, Operational Factors and Societal Factors

Computer anxiety is defined as a person's fear and uneasiness while considering or actually utilizing computer technology, or when fearing the potential of using it when needed (Maurer & Simonson, 1993). In a similar vein, computer anxiety is referred to as an affective reaction as it involved feelings, attitudes and emotions (the ways in which people deal with external and internal phenomenon emotionally). Furthermore, Computer anxiety is a multi-dimensional phenomenon with three major dimensions: psychological, operational, and societal (Torkzadeh & Angulo, 1992).

5.4.1. Psychological factors

To be more specific, attitudes toward computers, the psychological component consists of personality types, self-perceptions, avoidance and self-efficacy. This dimension refers to the emotional and cognitive aspects of computer anxiety (Torkzadeh & Angulo, 1992).

"It is good experience; I never thought I will study from staying at home, learn new software. Before Covid-19 I was thinking computers are just for making assignments, but after Covid-19 it is also for study online purpose"

"I react very simply and positively because I know very well it is not a game of simple illiterate person but simple thing of those person who are really willing to learn many new things because as a era of science & technology we should understand in science and technology era we have to meet different challenges of technology we will have new technology and we have to use we should be familiar with them if my friends or other they don't have any knowledge as on humanity ground as being Muslims or whatever is our duty or right or simply employ contract that we have to at least a support or tell them, him or her that you can if you use those type of software online learning they will not only help you to get your knowledge but also it will be helpful for your future too".

5.4.2. Operational factors

The operational dimension is typically the consequence of the character of computers, the extent of one's experiences with the computer, the possession of a personal computer, computer courses, and instructors. Competence and experience with computers in a practical setting are the emphasis of this factor. It pertains to issues concerning the effective operation and navigation of computer systems. Computer users with more experience have stronger computer self-efficacy and less computer fear (Afari, Eksail, Khine, & Alaam, 2023).

"Being a university student, we are studying two or more subjects regarding computer so we don't face any difficulty while taking online classes."

"Yes I have sufficient computer knowledge about IT skills to manage my online learning because I have laptop as well as mobile and internet package at my home".

5.4.3. Sociological factors

To be concrete, Age, gender, nationality, socioeconomic background, and the field of study all have an impact on the sociological dimension. Therefore, Females are more concerned about computers than boys, and the disparity in access to computers between male and female children at home is a result of the fact that parents tend to purchase more computers for their sons than for their daughters (Dong & Zhang, 2011; Schottenbauer, Rodriguez, Glass, & Arnkoff, 2004). Along these lines, Boys have more computer experience than girls because they spend more time using computers and are more interested in computer-related activities (Comber, Colley, Hargreaves, & Dorn, 1997). The reason for the lower level of computer anxiety among individuals from affluent backgrounds (social-economically privileged) is that they are likely to own a computer at home, attend schools with better computer equipment, and have teachers with greater computer abilities.

"Yes I have sufficient computer knowledge about IT skills to manage my online learning because I have laptop as well as mobile and internet package at my home".

"This is very simple as a public university students they are not fully facilitated someone those who are aware or familiar with the different tools and techniques they are elite in terms of financial position they are the different resources from there they can use in a very good manner but apart from another group of students who are very much poor they cannot afford and they can and they are using those without any having etiquettes how to use and definitely there will be the many communication barrier comes when those students who are not aware of those let's suppose we say any tools using online classes".

5.5. Technological Readiness: Technical Skills, Computer Skills and Internet access

One of their online Learning readiness characteristics is technology readiness, and before introducing online learning, an institution has to evaluate its technical preparedness (Borotis & Poulymenakou, 2004). Internet access and the availability of qualified human resources able to evaluate the pupils' knowledge and aptitudes participating in online-Learning and addressing the identified gaps were considered technological readiness (Psycharis, 2005). Higher education institutions have to explicitly handle the problem of technological preparation in their academic program delivery and planning. One of the factors limiting an institution's capacity to use online-learning is the "Technophobia" (Aydın & Tasci, 2005). In an online learning environment, students will therefore be able to acquire the required skill sets for self-sufficiency instead than opposing new approaches.

5.5.1. Technical skills

Ha and Lee (2019) mentioned that users of online learning systems should have the requisite technological abilities in order to use them. Furthermore, this terms explored by the Chapnick (2000), technological readiness as a situation in which a person is endowed with a collection of modifiable technical skills.

I think there are one or two computer introductory courses in almost all departments as per curriculum, so I think no one has faced any difficulty in using these tools and of course university student have their own personal computers and mobile phones, our teachers guide and support in using tools. Personally I was not aware of these tools, I have good knowledge now. In future if we face these kinds of situations, we should prepare our-self. Well, being a student of university I have good knowledge of IT and software too, I am able to study at my own speed and degree of skill, and I love the challenges, freedom, and independence that come along with online learning. This flexibility is another benefit of online learning.

Now I am not only attending online classes of my departments but also I got admission in online courses as well.

5.5.2. Computer skills

When attempting to get access to an online classroom, it is important to avoid becoming frustrated; students must have enough computer and technology knowledge (Link & Marz, 2006). Students must have a sufficient level of computer understanding to prevent becoming frustrated with online learning. Because of the inadequate computer literacy of students or their unfavorable attitudes toward e-Learning, there is a possibility that issues may occur during the activation of a Learning Management System that is used throughout the whole institution. R. Ali (2012), has found that in order for students to thrive in an e-Learning environment, they need a certain degree of proficiency in computer and technology abilities , and that basic computer skills are required for success in an online context. As a result, pupils are provided with the essential technologies to become computer literate.

Being university student, we are doing assignments on laptop and give presentation that is why every university student has the basic knowledge of computer but in the COVID-19, GOVT: and HEC announced to continue education via online. So our university does as per instructions, but we students don't have knowledge of such tools so our teachers and other students help us how to use those tools.

I am well-versed in computer and information technology.

5.5.3. Internet access

E-Learning is technology-based, requiring students to have access to computers and the Internet. Furthermore, online-Learning would assist the education sector, but it would require enhanced technology support for students.

University students are "compelled" to engage in online learning in the absence of sufficient infrastructure and facilities at their residences.

To date, students have not established a culture of online learning due to the implementation of the learning management system and students' expenses increases in buying internet packages, some of our student colleagues have not enough resources to take online classes so that university should provide us technological support.

5.6. Equipment Readiness: Broadband facilities, and Mobile Devices

Chapnick (2000) found that Equipment Readiness as having the essential equipment to implement e-Learning or possessing and making available appropriate and pertinent instruments. As a result, the participants lack the necessary equipment to make a smooth transition to online learning. Infrastructure/equipment readiness refers to the provision of technical support, e-learning content delivery, broadband facilities, and a Learning Management System (LMS) by the institutions who adopt the systems.

5.6.1. Broadband facilities

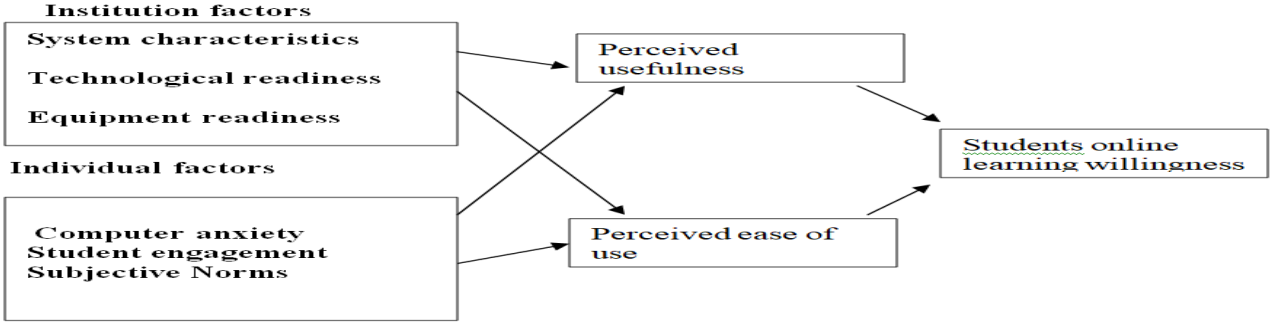
The following are basic to online Learning infrastructure, Gaebel, Kupriyanova, Morais, and Colucci (2014), computer networks and servers, provision of students with emails, access to Wi-Fi, computer rooms, and online libraries. Students perceive that schools compelled them to transition to online learning without sufficient home amenities and infrastructure. Access to laptops, PCs, mobile phones, and internet connectivity is essential for seamless online education. Even students who have sufficient home infrastructure may still have difficulties with online learning due to its unfamiliarity within the learning culture. *Students have not had a culture of online learning yet because so far the learning management system implemented and students' expenses increases in buying internet packages, some of our student colleagues have not enough resources to take online classes so that university should provide us technological support.*

I think it is good idea because we got knowledge more about online learning tools and got familiar with the online learning but we need university support to adopt this learning.

5.6.2. Mobile Devices

In the context of the learning process, smartphones and iPods play a significant role because they enable students to use the educational information they provide in a manner that allows them to exercise control over their own content, particularly in situations when laptops or desktop computers are not accessible (Levy & Blin, 2011). Furthermore, students believe that mobile phones enable them to connect with information that is relevant to them and boost their confidence as learners. In addition, the mobile phones and applications in question include a multitude of categories that include learning tools and characteristics, alerts about short, mid, and final examinations, learning videos sent by teaching staff, and other elements that contribute to the success of the students' learning process (Gupta & Pandey, 2018) Due to the availability of those mobile phones, students are interested in using those applications rather than a desktop computer in order to keep up with the latest college updates from the college.

Figure1: Proposed Model for students willingness towards online learning



University should launch schemes to give mobile phones to all students to cope with this situation. University should provide us mobile phones on loan scheme so that our classmate who don't enough resources to purchase android phones

6. Discussions

The importance of online learning for System attributes as "properties of the system that influences individuals' perceptions regarding usefulness or ease of use of a system" Chang, Hajiyev, and Su (2017) explanation that System attributes consist of content quality (CQ), information quality (IQ), and system quality (SQ). With respect to this definition, system characteristics are the external factors which tend to influence the outlooks of the users with respect to the use of e-learning system. Our data is also consistent with these arguments where respondents were in view that system characteristics such as content quality (CQ), information quality (IQ), and system quality (SQ) have a crucial role in adopting and using an online learning system. When system quality is clear to students, when complete, precise and well-timed information received over electronic service interface, when depth and frequent updates of the content, it affects perceived ease of use and perceived usefulness of online learning system which create sense of willingness among students. Therefore, connecting the above mentioned arguments and on the basis of discussion from grounds it has been proposed that:

Proposition 1*: System attributes (i.e. system quality, content quality, and information quality) lead towards willingness of students to use*

Here on the basis of our analysis technical skills, computer skills and internet access as prototypical of technological readiness. We on the basis of our findings argue that students experiencing technological readiness as they must have a certain degree of computer and technological skills, having access to computers and the Internet- online Learning is based on technology.

These findings are also consistent with the findings of Saubern, Urbach, Koehler, and Phillips (2020) as he argued students need to have adequate technological computer knowledge in order to avoid the frustrations experienced when they are involved in an online learning, it impacts perceived ease of use and perceived usefulness of online learning system which create sense of willingness among students.

Hence, connecting the findings of our grounded data with the above mentioned arguments it has been proposed that:

Proposition 2: *students experiencing institution technological readiness will lead towards willingness to use through computer skills, technical skills, and internet access.*

Here we on the basis of our findings include mobile phones, LMS, and broadband facilities which are considered as crucial for student's willingness in the online environment. From our findings it is clear that those teachers and students are well equipped offered by their institutes, student will adopt online learning in order to protect their future in the critical situations (i.e. Covid-19). Up to this point these findings are also in line with the findings of Criollo-C, Guerrero-Arias, Jaramillo-Alcázar, and Luján-Mora (2021) who reported in their research that student's think that mobile phones help them engage with relevant material and raise their confidence as online learners- online Learning success depends on infrastructure readiness.

Strengthening these arguments, same has been confirm from our findings that those students are more intended towards adopting online learning who are well equipped by institutes, it affects perceived ease of use and perceived usefulness of online learning system when students who are studying online during COVID-19. Hence, another proposition emerged from ground reality is as under:

Proposition 3: *Equipment readiness is positively related with Students willingness to use online environment*

According to the findings of this study, student perceived engagement contribute environmental features (i.e. quality of interaction and supportive environment) where they experience feelings of support given by peers, instructors, support from the family and society, Interaction between students and teaching staff as well as among students via emails, and WhatsApp. Our findings are consistent with the study of C.-L. Tsai, Ku, and Campbell (2021) as he also draws conclusion in the examination of student views to engagement as overall perception of a supportive environment and quality of interactions with students, faculty, and other types of staff (Groves, Sellars, Smith, & Barber, 2015; Muzammil, Sutawijaya, & Harsasi, 2020).

Therefore, it has been summarize in following proposition that student engagement through interaction and supportive environment motivate student towards online learning, it affects perceived ease of use and perceived usefulness of online learning system which create sense of willingness among students when students who are studying online during COVID-19.

Proposition 4: *Student engagement leads towards willingness of student to use through interaction and supportive environment.*

According to Torkzadeh and Angulo (1992), computer anxiety as a multi-dimensional construct consists psychological, operational, and sociological factors. Keeping in view the above arguments, it is quite clear that psychological, operational, and sociological dimensions are very important factors in computer anxiety and these are necessary to consider when students involved in online environment. Our analysis are close to these arguments as our data says that psychological, social and operational factors play important role in usage of information technologies when students gets anxiety, they might perceive the system as complicated and difficult, it affects perceived ease of use and perceived usefulness of online learning system which create sense of willingness among students when students who are studying online during COVID-19.

Hence, next proposition has been shown as:

Proposition 5: *The lesser the computer anxiety for online learning, greater the willingness of students to use followed by psychological, social and operational influences.*

Our findings also claim that students possessing positive influence of subjective norms like social pressure give them motivation towards online learning. Given their tendency (i.e. what others think I should do, what others really do and so on), student high in these factors might be more inclined to perceive as pleasant those behaviors pressurized by others who are important to them (e.g. family, friends, colleagues, and others) to behave in a certain manner, and subsequently, their motivation to comply with those people's views. Therefore, the last proposition to be emerged from ground is:

Proposition 6*: subjective norms push students to adopt online learning if they are dependent on the people's belief surrounding them.*

6.1. Practical Implication

For education administrators, instructional designers, and instructors, understanding the implications of online learning concerning factors such as technology readiness, equipment readiness, system attributes, computer anxiety, subjective norms, and student engagement is vital for creating effective online learning environments.

1. Education administrators need to assess the technology readiness of both instructors and students. Providing professional development opportunities for instructors to enhance their technological skills and ensuring students have access to necessary training can improve the overall online learning experience.
2. Instructional designers should ensure that online learning materials are accessible across different devices and screen sizes to accommodate varying levels of equipment readiness among students. Education administrators can support initiatives to provide students with the necessary equipment for successful participation in online courses.

3. Instructional designers play a key role in designing online learning systems that are user-friendly, intuitive, and engaging. Collaboration between education administrators and instructional designers can lead to the development of online platforms with features that enhance student interaction, facilitate content delivery, and promote active learning.
4. Instructors should be mindful of computer anxiety among students and incorporate strategies to support learners who may feel overwhelmed by technology. Providing clear instructions, technical support, and creating a positive and encouraging online learning environment can help alleviate computer anxiety and foster student confidence.
5. Education administrators can promote a culture of collaboration and community building within online learning environments.

By considering these implications and addressing the impact of technology readiness, equipment readiness, system attributes, computer anxiety, subjective norms, and student engagement in online learning, education administrators, instructional designers, and instructors can work together to create dynamic, inclusive, and effective online educational experiences for students.

6.2.2. Future Avenue

In the future, this study can be extended to explore how emerging technologies, such as artificial intelligence and adaptive learning systems, further influence the identified institutional and individual factors, potentially reshaping student appraisals of online learning. Additionally, examining longitudinal data could reveal how these factors evolve over time, particularly in response to rapid technological advancements and shifts in educational practices. Cross-cultural comparisons could also provide insights into how these factors vary in different educational contexts, contributing to a more comprehensive understanding of global trends in online learning. This is a first study which found institution approach as a consequence of technology readiness, system characteristics, equipment readiness; and individual approaches as a consequence of engagement, subjective norms and computer anxiety as a variable enhancing the effect of virtual environment on perceiving the climate of online learning and positive readiness in the way of increasing the state of willingness so in this context more research is also required to confirm these finding.

7. Conclusion

The individuals who participate in online learning are provided with a variety of individual factors as well as the institution factors. An important goal of online learning is that the online learning is internalized by those who receive it in order to widen their perspectives and contribute positively to wider institutional and individual well being. There is evidence that the online learning has been important, individual factors that are computer anxiety, student engagement and subjective norms becoming important factors to influence student's willingness. Students understand themselves as having benefitted from online learning and they believe this benefit extending beyond their students lives. Respondents were in view that online learning has certain boundaries so students develop their competencies and avoid challenges that would prevent them from using online learning like computer anxiety. Furthermore, the impact of online learning is not only predicated upon the students' willingness to take an active role, but also greatly affected by institutional factors. These factors include the attributes of the system, including the level of design and user-friendliness of the online platform, as well as the technical and equipment readiness of the institution. If students are provided with a supportive atmosphere by their educational institution, they are more likely to successfully implement and make use of online learning. That involves providing them with dependable and easily available technology and a well-organized online learning system that will improve their learning experience. Students are more likely to engage with and retain information from distance learning classes when educational institutions make an effort to provide an inspiring and interesting classroom setting. The effective adoption and implementation of online learning relies on a blend of personal drive and institutional support. This, in turn, benefits both the individual and the institution.

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