AMERICAN UNIVERSITY OF BEIRUT

# GRADUATE STUDENTS EXPERIENCE WITH E-LEARNING: A DISTRESSED COUNTRY CONTEXT

by
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# ABSTRACT
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E-learning has always been adopted in higher studies since the rise of the web and internet among the technological revolution. Hence, when the global COVID-19 pandemic hit all the countries, responsible authorities in the educational sector worldwide came to a conclusion that e-learning must be adopted and implemented in all educational levels with no exceptions in order to escort the educational programs already set for the year and to save the educational system especially with the lockdowns that took place all over the world. In fact, as any newly implemented system, there has been some deficiencies as it is reflected on further in this research study, but these deficiencies are more remarkable in developing countries rather than in developed countries which is due to the lack of IT infrastructure and resources, and very bad internet connectivity among other factors in those developed countries. The aim of this study is to explore the factors that affect students' satisfaction with online learning in a distressed country context, as well as to compare public and private educational sectors in terms of e-learning readiness elements in response to the COVID-19 pandemic. We took Lebanon, a distressed country, as a case to assess students experiences with e-learning in both private and public educational sectors. Using a convenience sampling method, a sample of 307 graduate students agreed to participate in the study and filled in a survey, where 146 of them were graduate students at a private university in Lebanon (American University of Beirut) and 161 were graduate students at a public university in Lebanon (Lebanese University). The study found that institutional readiness for adopting online learning, lecturers' readiness to design their courses through e-learning setting and students' readiness to use e-learning were significantly and positively associated with students' satisfaction with online learning. However, the students' psychological distresses caused by COVID-19 pandemic were shown to be negatively associated with students' satisfaction. More specifically, students experiencing higher levels of psychological distresses are less satisfied with online learning. Moreover, the study found that students who are employed and have a greater level of institutional and lecturer readiness are more likely to have a positive experience with online learning. On the other hand, students in public educational sector are less likely to have a positive experience with e-learning compared to students in the private sector. Furthermore, it was demonstrated that the private educational sector was more ready to implement online learning than the public sector where institutions, lecturers, contents/materials and students in private sector were ready for the new learning system compared to the public sector. Also, it was revealed that some demographic factors affect students' readiness where males and employed students were shown to be more ready for distance learning than females and unemployed students.

TABLE OF CONTENTS

# ILLUSTRATIONS

Figure

# TABLES

Table

# CHAPTER 1

# INTRODUCTION

In today's changing world, and with the outbreak of COVID-19 pandemic, higher educational institutions all around the globe have shifted from face-to-face learning to online learning as a way to sustain the educational process. On December 31, 2019, a new virus called "Coronavirus" or "COVID-19" was first reported in Wuhan, China which the World Health Organization declared, after a short period of time, as a "global pandemic". The virus has spread to all countries worldwide due to its fast transmission between people. As such, governments in all countries have implemented strict precautionary measures and imposed full lockdowns in order to contain the virus (Puljak et al., 2020). Educational institutions were not exceptions; many universities had to quickly reform their educational system in order to keep the educational process at the desired level during those challenging times. That's when they shifted quickly towards e-learning, where all courses, sessions and material have been delivered exclusively online (Alqahtani & Rajkhan, 2020).

This transition wasn't easy, not solely for institutions, but also for students and lecturers. In fact, most of the educational institutions in developing countries lack the proper information technology infrastructure and other technological privileges that would allow them to shift to online platforms at the same rate as institutions in developed countries. Whereas lecturers and students have been challenged to familiarize themselves with the new learning system and overcome all obstacles that may interrupt their learning process (Marshall & Wolanskyj-Spinner, 2020).

Therefore, we selected Lebanon's case as a distressed country in an attempt to study the student's experience with e-learning and e-learning readiness in both private and public educational sectors. This research interrogated private and public educational sectors' graduate students through a survey that examines the extent to which institutions, lecturers and the content of the courses were ready for e-learning, alongside students' own readiness to use computers and other digital tools in order to participate in the distance learning system. Also, in this study, we measured students' satisfaction with online learning as a way to measure their experience with this learning method in response to the COVID-19 crisis. This research's being carried out in both the public and private educational sectors.

### 1.1. Background of the Study

When classrooms were first invented, face to face learning was the only system for education in all countries. However, in the next centuries and specifically in the 1990s and onwards, online learning programs have emerged in few universities; a fact that hasn't affected the popularity of traditional learning at the time. It was only after the outbreak of COVID-19 that online learning has been adopted to become the lone educational alternative in a way to sustain the learning process worldwide. In fact, during the pandemic, while the whole world was in full lockdown and quarantine was in full effect, educational institutions had to make a fast decision about the future of the educational process; some universities had to suspend their classes until further notice, others had to dismiss the semester, whereas the majority switched to the remote sessions (Fawaz & Samaha, 2020).

The instant transition to online learning has produced a surge of hesitation, especially for the students who were unfamiliar with such an educational system. Students and instructors had to challenge themselves in order to acquaint themselves with e-learning and overcome all constraints that may interrupt the learning process. At this stage, the efficiency of the online learning system has become a controversial topic that divided the public opinion into supportive and unsupportive; parents and students denoted fears about the current and the future effects of COVID-19 on the educational system once the pandemic is over, while some students describe their experience with e-learning as a success and prefer it over the traditional education whereas others are still adamant of its ineffectiveness (Alqahtani & Rajkhan, 2020).

In developing countries however, where financial, economic and social challenges are encountered on a daily basis, the healthcare condition due to COVID-19 has made the situation even worse. Governments of such countries had to adopt the online learning system, same as the developed ones, despite their limited capabilities and lack of Information Technology Infrastructure; a situation that kept the students confused and muddled about the future of their education (Marshall & Wolanskyj-Spinner, 2020).

Eventually, this situation impacted negatively all the stakeholders of education, especially the students, who are most vulnerable to develop psychological and mental disorders (Bruffaerts et al., 2018). A condition that raises the bar for universities to start evaluating the students' psychological needs and their level of satisfaction with the new educational system.

## 1.2. Problem Statement

Assuring the success of online learning is not an easy task, especially for the institutions who have not set up the ground for the implementation of such an educational system. In fact, universities in developing countries have been the most challenged during the pandemic, where they have confronted local, institutional, technical and social obstacles. All parties involved in the e-learning process: institutions, lecturers and students have endured these conditions, however, this situation has impacted most notably the students, who are most vulnerable to become unsatisfied and unmotivated to use this learning system, as well as those who are most probable to develop psychological and mental disorders. This imposes the necessity for conducting a study about the factors that affect students' experience with online learning so that institutions and instructors can receive some guidance to provide a better learning environment.

### *1.2.1. Problem Statement and Research Gap*

Many studies have explored the e-Learning experience in private and public institutions without comparing their implementation in Third World countries (Fawaz & Samaha, 2020; Marshall & Wolanskyj-Spinner, 2020; Alqahtani & Rajkhan, 2020; Nwagwu, 2019). However, in this research, students are the center of concern, where we studied their readiness as well as their experience with this educational system in a distressed country context, taking into account many factors including the institutions readiness to adopt e-learning, lecturers eagerness to organize and supervise the online learning and their ability to prepare the courses' content in the most efficient way online, students preparedness to deal with e-learning and their psychological state

within the healthcare circumstances of COVID-19 pandemic besides the university educational sector (private/public) and other sociodemographic factors.

### 1.3. Objectives of the Study

In this research, we aim to help institutions and lecturers to improve the quality of the e-learning based on students' experiences, which in turn will prove beneficial for the learners especially with a better quality of education. The main objectives of this research are divided into three dimensions:

**RO1:** To identify the factors that affect student's satisfaction and experience with e-learning

**RO2:** To compare e-learning readiness between public and private educational sectors in response to the COVID-19 pandemic, particularly in a distressed country.

**RO3:** To measure a student's readiness for e-learning

### 1.4. Research Questions

**RQ1:** What e-learning readiness elements can affect student's satisfaction with e-learning?

**RQ2:** Do students in the private educational sector have a better experience with e-learning than students in the public sector?

**RQ3:** Is the private educational sector more ready for e-learning than the public sector?

**RQ4:** Do sociodemographic characteristics affect student's experience with e-learning?

**RQ5:** Do sociodemographic indicators affect student's readiness for e-learning?

**RQ6:** Do the psychological/mental distresses during the pandemic affect students' satisfaction with online learning?

### 1.5. Thesis Organization

The remaining of the thesis is organized as follows.

Chapter two reviews some literature about previous studies that have examined e-learning and its implementation on a higher education level. Based on the literature, eight hypotheses were set and developed.

Chapter three displays the methodology where participants, data collection techniques, measurements and analysis methods are discussed in detail.

Last chapter discusses the findings and concludes the whole research outcome by also displaying the limitation of the study and future considerations.

# CHAPTER 2
# LITERATURE REVIEW

The chapter starts by defining e-learning, exploring its characteristics and qualities, and providing an overview of the way the online learning system has evolved to become one of the most practical methods of learning and teaching. It tackles the emergence of COVID-19 and its impact on the higher educational system, which resulted in the full shift to online learning methods. It, also, explores the different types of e-learning that were implemented during the pandemic (Blended Learning, Flipped Classroom, Information Communication Technology (ICT) Supported Face-to-Face Learning, Synchronous Learning, Asynchronous Learning). Also, this chapter studies the effects of COVID-19 on the psychological state of the students and its impact on their level of satisfaction with the online learning system.

Furthermore, the chapter explores the implementation of e-learning in both public and private educational sectors in developing countries and their readiness for the full adoption of the distance learning system during the pandemic. Lecturers, materials/contents of the courses and students' readiness for e-learning were investigated as well as their mutual relationship with students' satisfaction. Lastly, the effects of sociodemographic factors on students' readiness were also put into place in this chapter.

## 2.1. E-learning Definition and Evolution

"E-learning" is a combination of two spaces, technology and learning. Learning is an intellectual course for reaching knowledge and technology is a facilitator for the educational process (Aparicio et al.,2016). Roffe, (2002) defines e-learning as a way of

learning and communication between students and lecturers by electronic means, which has soared as a crucial source of competitive advantage in the information society. E-learning can be defined simply as learning with the use of technology; it is the principle of providing knowledge to individuals who are in different geographical areas. Other terms like online learning, distance learning, online collaborative learning, virtual learning, and technology mediated learning can also be used as substitute terms for e-learning (Wallace & Panteli, 2018).

E-learning has taken off faster than expected due to the pandemic, as Nwagwu (2019) explains that; "*By the start of the twentieth century, e-learning has appeared to be the wave of the future".* E-learning was first implemented to bridge the gap between the increased demand on education and the number of institutions of higher education (Kibuku et al., 2020) and to allow students with supplementary responsibilities and work to access learning (Kpolovie et al., 2014). Thus, it empowers marginalized sectors of the society by supporting them to become lifelong learners. Many universities have adopted e-learning as a way to expand the access to learning and to be competitive at a local stage (Nwagwu, 2019); these institutions have found e-learning very beneficial for their institution due to its iniquitousness, flexibility, enriching knowledge, accessibility, cost effectiveness, time efficiency and adaptable supervision of the educational progress (Pham & Huynh, 2017). In fact, it is perceived as an open, flexible and cost-effective way of learning that provides educational opportunities to overcome the obstacles of both space and time (Nwagwu, 2019). Thus, online learning has been growing constantly due to the improvement of the Internet and recent information technology that modified the process of education (Ali & Ahmad, 2011).

## 2.2. E-Learning Approaches

Alqahtani & Rajkhan, (2020) have evaluated the criteria of five different approaches of e-learning and rated each approach's performance using TOPSIS method (Technique for Order Preference by Similarity to Ideal Solution method): "This method essentially determines the distance of both the positive and negative alternatives of the ideal solution." (Alqahtani & Rajkhan, 2020). The five types of e-learning are manifested by:

i) Blended Learning: The mix of traditional and online classes

ii) Flipped Classroom: Online material provided to students prior to classes

iii) Information Supported Face-to-Face Learning: Traditional learning supported by information and communication technology

iv) Synchronous Learning: A real-time interaction distance learning

v) Asynchronous Learning: Non-real time interaction distance learning

According to the study conducted by Alqahtani & Rajkhan, (2020), it was concluded that the most efficient e-learning system is Blended Learning. This is due to the flexibility of this type of learning in exploiting resources for learners and in offering additional time for faculty members with students whether in group settings or individually. Also, through blended learning, students can have modified experiences and results (Davis & Fill, 2007).

## 2.3. E-Learning in Developing Countries

As in developed countries, e-learning has become fundamental for many universities in developing countries (Pham & Tran, 2020). However, this learning

method was implemented lately in the underdeveloped nations where it suffers a lack of interaction compared to that in developed nations (Pham & Huynh, 2017). Many developing countries were interested to adopt e-learning (Grönlund & Islam, 2010) but faced barriers in infrastructure, capitals, technology accessibility (Raab, Ellis, & Abdon , 2002), culture and policy (Shraim & Khlaif, 2010). According to Ssekakubo, Sulelman and Marsden (2011), most of the e-learning projects in the Third World either fail partly or wholly to deliver on their promise. This is due to the high costs of the implementation and sustainability for a dependable Information Communication Technology (ICT) infrastructure for many universities in the developing countries (Sabi, 2014). In Kenya for example, it was reported that there are 580 sub-locations with under 50% Global System for Mobile Communication coverage, 160 sub-locations with no mobile signal, and 2000 sub-locations with below 50% 3G network coverage, half of which are with no 3G services completely (Kibuku et al. 2020). Thus, financing the implementation and the delivery of e-learning is the main issue in the Third World (Sabi, 2014).

### 2.4. E-Learning During COVID-19

Since the outbreak of coronavirus or what is called COVID-19, confirmed as a global pandemic, governments all around the world have imposed strict precautionary measures to control the spread of the virus (Fawaz & Samaha, 2020). All countries have been put in full lockdown, which contributed to the destabilization of academic activities (Igere, 2020). The Lockdown started by the middle of the spring semester 2020; a situation that was unexpected for lecturers and students (Alqahtani & Rajkhan, 2020). As such and as a mean to bridge the gap that resulted from the lockdown (Khan

et al., 2021), higher educational institutions have shifted from the face-to-face learning to the online learning (Alqahtani & Rajkhan, 2020) where students and lecturers have had the opportunity to interact and satisfy the learning outcomes of the courses distantly. “Platforms such as Zoom, Moodle, Blackboard, and Skype” have been used to provide students with the required materials, where lecturers have challenged themselves to adapt to the new teaching methods. Thus, the implementation of e-learning has become vital and important for education where it has grown at a higher rate during COVID-19 relative to previous years since most of the educational services have become online and provided for over 60% of students around the globe (Fawaz & Samaha, 2020).

### 2.5. Students’ Satisfaction Definition

Due to the increased demand for an effective learning system and the emergence of students’ experience with flexible educational programs that support students’ lifelong learning and career development, scholars’ expectancies for the lecturer’s quality, efficient learning outcome and satisfaction for learning experiences have been enhanced (Debourgh, 1999). Astin, (1997) defined students’ satisfaction as the students’ perception of their college experience and the value they believe to have been received from the education given during their attendance of the institution. Satisfaction is reached only when the real performance convenes or surpasses the expectancies of the students (Szymanski& Henard, 2001). In this regard, effective technological innovation, good communication between students, accessibility of technical support, and reliable courses’ design are essential to guarantee the efficiency of online education (Swan et

al., 2000). Thus, student satisfaction is believed to be a crucial product in “job-related learning contexts” (Klein, Noe & Wang, 2006).

### 2.6. E-Learners Psychological State During COVID-19

The COVID-19 pandemic has reflected further concerns on the psychological and mental health of the affected population. In fact, it is well known that such pandemics can generate new stress factors manifested in the concern about the health of oneself and of loved ones, the restrictions on social activities and the major lifestyle modifications (Son et al., 2020). That being said, these stressors are most likely to develop among college students since they are considered to be a vulnerable population (Bruffaerts et al., 2018). In Lebanon, for example, e-learning implementation has been very difficult since the country was already facing different problems on the political and economic level, ranging from an economic crisis, and country-wide bankruptcy, to the government attempting to retrieve the population's trust, and so COVID-19 has placed a large burden (Bizri et al., 2020). This situation has affected professors, and university students who have been exposed to anxiety, stress, and depression especially through COVID-19 and the countless psychological challenges faced on a daily basis (Othman et al., 2019). In fact, during quarantine, students who were subject to isolation found it difficult to involve themselves in virtual conversations where they felt like they were talking through a void (Brooks et al., 2020). Thus, students have felt worthless, and kept on procrastinating their dues. Findings of a study conducted in Lebanon during the pandemic have shown that 17.9% of the students who participated in the study have mild depression, 13.8% have moderate depression and 1.7% have severe depression. Therefore, the generation of the previously mentioned symptoms have negatively

affected the students' satisfaction with e-learning (Fawaz & Samaha, 2020). According to a report issued during COVID-19, it was highlighted that "psychological counseling of students" is extremely needed due to the high levels of anxiety and pressure resulting from the radical conversion that has occurred on the level of learning environment and prospects of future jobs (Marshall & Wolanskyj-Spinner, 2020). As such, we hypothesize the following:

**H1:** Students who are psychologically/ mentally distressed by the pandemic are more likely to be dissatisfied with e-learning than others

### 2.7. Institutional Readiness – Students' Satisfaction

Prior to COVID-19, the use of e-learning was measured to be growing at a rate of 15.4% annually in educational institutions around the world. This has changed during COVID-19 as the situation has altered dramatically; all universities and educational institutions have shifted from traditional learning to e-learning (Alqahtani & Rajkhan, 2020). However, ensuring the success of the online learning system is not an easy task (Pham & Huynh, 2017). In fact, university support is perceived as a crucial key to the success of online learning systems, and this includes library facilities, department support, computer labs, and IT support (Benigno & Trentin, 2000; Pham & Tran, 2020). As per Headar et al. (2013), one of the most significant strategies to enhance satisfaction and customer behavioral intentions is to enhance the quality of the provided service. This strategy also applies in the online learning perspective, where it is proven that a relationship exists between the quality of the service and the students' satisfaction and continuance intentions (Chiu et al., 2005; Headar et al., 2013). Thus, student's

satisfaction increases when technical services, besides lecturer's support, are provided (Palmer & Holt ,2010). As such, we hypothesize the following:

**H2:** Institutional readiness positively affects student's satisfaction with e-learning.

### 2.8 Lecturers' Readiness – Students' Satisfaction

All participants in online learning are very essential to the success of e-learning; authorities, learners, instructors, societies, and others all participate in the efficiency of e-learning. However, instructors play a very crucial role in designing and implementing e-learning courses due to their function as organizers, educators (Nwagwu, 2019) and mediators between students and materials (Beaudoin, 1990). In fact, lecturers intend to simulate or sustain the learner's fascination on the subject, while prompting them to learn (Headar et al., 2013). Thus, they play a very crucial role in making the educational system fruitful (Hong et al., 2003). Kenya's study, handled by Mutisya & Makokha, (2016), showed that limited Information Communication Technology (ICT) skills ranked among the main challenges that inhibited the adoption of e-learning in the public educational sector since the ability of lecturers to use Computers and other ICT technologies is essential for e-learning. In fact, this is dependent on the lecturers' prior knowledge and experience in using technology; in case they lack such skills, they would either use it insufficiently or not use it at all, thus compromising the successful employment of e-learning. Therefore, lecturers should always keep on acquiring new skills to succeed (Jones, 2003), besides ensuring interactions and discussions with the students (Hong et al., 2003). They should recognize the situational diversity that exists among learners and then consequently implement exams, measurement practices and testing schemes (Banerjee & Brinckerhoff, 2002). Eventually, online education known

as “learner-centered instruction” involves three important factors to reach student satisfaction, included in “instructor support” and they are: valuable feedback, easy interaction, and timely support (Ali & Ahmad, 2011). Thus, accessibility of knowledge, assistance and feedback by instructors convey student’s satisfaction in online learning (Wilson & Whitelock, 1998); students support the necessity for qualified and specialized lecturers in order to get to a high level of student satisfaction (Hong et al., 2003). As such, we hypothesize the following:

**H3:** Lecturer’s readiness positively affects student’s satisfaction with e-learning.

### 2.9. Content Readiness and Efficient Deliverability – Students’ Satisfaction

Content of the courses denotes the recognition of students about the fruitfulness, the development of the courses’ content, and the ease of the courses’ design (Pham & Tran, 2020). The implementation of an online setting allows students to be part of the educational process by playing with the course’s materials (Michailidou & Economides, 2003). Learners’ discussions and interaction seem to be among the most significant features of online courses (Swan et al., 2000) where interaction can be defined as the collaboration with the course content, group work, relational skills, and demand for support (Northrup, 2002). Additionally, students believe that an e-learning content should be well presented in an animated layout “such as a web page which summarizes course content, web links to other learning resources, practical “real - world” examples, or a site where they can practice specific skills” (Ali & Ahmad, 2011). As Swan (2001) describes, the clearness of the course design is among the three factors that affect the satisfaction of the students with e-learning, besides the interaction with the instructors and discussions among students. Thus, it is suggested that the content of online courses

be designed based on students' prospects and preferences in order to enhance their level of satisfaction and success (Akdemir & Koszalka, 2008). As such, we hypothesize the following:

**H4:** Content readiness positively affects student's satisfaction with e-learning

### 2.10. Students' Readiness – Students' Satisfaction

As Headar et al., 2013 declare "Familiarity is another antecedent of student satisfaction with e-learning". In fact, the efficiency of e-learning is related to the level of reception and usage of students (Brown, Jenkins & Walker, 2006; Teo, 2014). Students' reception of technology and their ability to use computers are the main factors that affect their acceptance to use online learning (Al-Gahtani, 2016; Tarhini, Hone, & Liu, 2015; Wong, Teo,& Goh, 2015). Among the factors that affect students' satisfaction, students' technological skills and competency have proved to be highly correlated to their satisfaction (Beqiri, Chase & Bishka, 2009). As per Palmer & Holt (2009), 70% of students have a satisfaction level related to their conviction for the effectiveness of learning and ability to use technologies. As such, a significant relationship is shown to exist between students' technology interaction and students' satisfaction with e-learning (Chang, 2013). As such, we hypothesize the following:

**H5:** Student readiness is positively associated with student's satisfaction with e-learning.

## 2.11. Educational Sectors Readiness

In Lebanon, during the pandemic, students have encountered financial constraints that restricted their ability to access educational technologies that would have sustained their education online (Zeng et al., 2019). It was found that "infrastructural factors such as the electricity and telecommunication deficits" were considered the main actors impeding the efficiency of e-learning for university students in Lebanon (Fawaz & Samaha, 2020). Most students in the private educational sector have access to the online learning platforms that are provided by their institutions, as these institutions have readied their lecturers to deliver their course material through this online learning process (Eze et al., 2018).

Nevertheless, during the pandemic, some institutions were unable to apply the quick transition at the same rate of other institutions who have already offered e-learning and were planning to invest in the online system process (Alqahtani & Rajkhan, 2020). In Kenya, for example, public universities were not well-prepared to handle e-learning, where 76% of the lecturer's participants in a study revealed that "bandwidth and the number of hotspots to access the Internet were insufficient" and that the Internet facilities were only provided within the university premises which left lecturers and students inconvenienced. Thus, this issue was declared to be one of the most serious challenges inhibiting the implementation of e-learning in public universities. This matter was explained by senior managers of the universities who have confirmed the high and prohibitive costs of Internet Connectivity, besides the fact that some of the remote locations are situated far from Internet Signals (Mutisya & Makokha, 2016). However, the private educational sector, which is self-financed and is privately owned, has a better functional readiness and ability to adapt to changes than

the public sector. This explains why the private sector is ahead of the public one in the adoption and utilization of the full prospects of online learning (Eze et al., 2018). That is, also, the case of the Lebanese University, the largest and the only public university in Lebanon, which suffers from a lack of funding and thus endures a scarce of computer and communication infrastructure. As a consequence, computer usage by its staff and lecturers deceed the level of usage in institutions in more developed nations like the United States or in Lebanon's leading private educational institutions (Saleh, 2008). In fact, the level of confidence among faculty and staff in using technology as well as the availability of hardware and software applications are significant factors in the restricted usage of technology (Faseyitan et al., 1996). Also, the lack of progression at the level of courses and materials occurs due to inconsistent acceptance of academic staff to implement instructional technology besides unrewarded efforts made by faculty members who are interested in designing new material for new instructional technologies (Kessel, 1972). Hence, universities are required to continuously adjust and implement new technologies, new abilities and other services that encourage re-engineering and mirror culture fluctuations (Nwagwu, 2019).

This suggests testing the following hypothesis and sub-hypotheses:

**H6:** Private education sector is more ready to implement e-learning than public sector

**H6a:** Institutions in the private educational sector are more ready for online learning than institutions in the public sector

**H6b:** Lecturers in the private educational sector are more ready for online learning than lecturers in the public sector

**H6c:** Contents/Materials in the private educational sector are more ready for online learning than contents/materials in the public sector

**H6d:** Students in the private educational sector are more ready for online learning than students in the public sector

**H6d:** Students in the private educational sector are more ready for online learning than students in the public sector

### 2.12. Sociodemographic Factors – Students' Readiness

E-learning without students using its systems has no worth. While the need for online learning has increased, learners have become more various; such an increase is coming from the integration of female students who have children, full time students who work as part timers and part time students who have full time jobs (Sharma & Kitchens, 2004; Bhuasiri, 2012). Multiple different features can affect the adoption of e-learning due to this increasing diversity (Volery& Lord, 2000). In fact, there is a significant relationship between gender and e-learning readiness, where males have proven to have more technological skills than females to acquire e-learning. Indeed, males are more ready for e-learning than females. Among them, full- timers, who have more time to familiarize themselves with the online learning, have the edge over part-timers (Islam et al, 2011), which suggests the following hypotheses:

**H7:** Males tend to be more ready for e-learning than females

**H8:** Full - timers are more ready for e-learning than part - timers

# CHAPTER 3

# RESEARCH METHODOLOGY

This chapter provides an explanation of the research methodology used to address the research questions and hypotheses. The chapter starts by proving the internal consistency of the construct items, followed by a description of the research participants. Research instruments, data collection techniques, and data analysis procedures are then explained in detail.

## 3.1. Research Design and Data Collection

The primary goal is to study students' experience with e-learning in both private and public educational sectors in developing countries during COVID-19 pandemic, particularly in a distressed country context. Data was then collected to get a comprehensive picture of the way e-learning was employed in both public and private educational sectors. Taking Lebanon as a case of a distressed country and using a structured survey, the convenience sampling method was used to gather a representative sample of 307 graduate students from public and private educational sectors in Lebanon. Despite the fact that convenience sampling is not the best sampling method when considering generalization, however, it still ensures the credibility of associations between variables (Lim, 2019; McMillan & Schumacher, 2010). Accordingly, data was collected from May 1, 2021, until May 31 2021 from one public and one private universities in Lebanon, where at each university, 800 random graduate students from different departments enrolled between spring 2019 - 2020 and spring 2020 - 2021 were selected to receive the invitation to participate in our study. Consequently, 146 graduate

students from the private university (American University of Beirut) and 161 graduate students from the public university (Lebanese University) have agreed to participate and fill out an online survey on AUB Lime Survey platform. All participants were informed about the objectives and the details of this study through an advertisement message along with a consent form that states the procedures, the benefits and the potential risks of participating in this study that they needed to agree on before proceeding to fill out the survey. Furthermore, as this survey involved some questions that might be sensitive to the participants, we guaranteed to the respondents that their responses are kept anonymous ensuring the confidentiality of the questionnaire in the consent form. Also, the study participation was voluntary, and students could withdraw from the survey without any consequences. This study was approved by the institutional review board (IRB) at the American University of Beirut (AUB).

### 3.2. Measures

The structured survey included 45 questions that interrogated the graduate students on their institutions, lecturers and students' level of readiness to either implement, adopt, or embrace efficiently online learning, as well as the online course content conformation with the aforementioned stakeholders. Moreover, this survey inquired the students on their satisfaction with the distance learning and the psychological distresses caused by COVID-19 pandemic. At the end of the survey, students were asked some demographic questions like their marital status, their type of Masters' program, their employment status, etc. The scales used to measure the constructs were picked from previous research studies to make sure it is reliable and valid. **Table 1** depicts the sources and the scales of the constructs used in this research.

**Table 1:** Scales used to measure research constructs

| Variable | Source | Scale |
|---|---|---|
| Institutional Readiness (4 items)<br>Lecturer Readiness (6 items)<br>Content Readiness (6 items)<br>Student Readiness (5 items) | Pham & Tran (2020) | Readiness Scale (5-point ranges from strongly disagree (1) to strongly agree (5)) |
| Student Satisfaction (5 items) | Headar et al. (2013) | Satisfaction & Loyalty Scale (5-point ranges from strongly disagree (1) to strongly agree (5)) |
| Psychological and Mental Health (6 items) | Son et al. (2020) | Mental Health aspects scale ranges from none (0) to mild (1) to moderate (2) to severe (3) |

### 3.3. Methods of Analysis

The study tested first the reliability of the questions using Cronbach alpha. Then, two linear regression models were employed; the first model was executed in order to test the hypotheses related to students' satisfaction with online learning in terms of the five constructs (institutional, lecturers, content, and students' readiness and the psychological distresses caused due to COVID-19), and the second model was performed to test the hypotheses related to students' readiness with respect to sociodemographic factors. Furthermore, two-tail tests were executed to test the hypotheses that compare readiness factors (institutions, lecturers, content and students' readiness) between public and private educational sectors. In addition, a logistic regression model was conducted in order to explore the effects of sociodemographic factors and readiness factors on students experience with e-learning. For the models that involved the six constructs (institutional, lecturer, content, and student's readiness, satisfaction and the psychological distresses caused due to COVID-19), the average responses for each of these variables was taken, resulting a number between 1 and 5 given that the questions related to these constructs were on 5-points Likert Scale except

for the psychological health which involved questions measured on a 4-point Scale and thus takes a value between 0 and 3. However, for the logistic regression model, students' satisfaction factor was dichotomized, where 3.5 was taken as a cutoff; a satisfaction factor strictly above 3.5 designates that the students have a positive experience with e-learning. For this model, we tested multiple cutoffs and noticed that the higher the cutoff, the higher the satisfaction is and thus, the better are the chances to get to a positive students' experience with online learning. Therefore, the new coded variable for students' experience has taken the value of 1 if satisfaction is strictly greater than 3.5, referring to a positive experience and 0 otherwise. All statistical analyses were performed using R language.

# CHAPTER 4

# DATA ANALYSIS

This chapter reviews the findings of the quantitative part of this Thesis and tests the validity of the previously mentioned hypotheses.

## 4.1. Descriptive statistical analysis

As discussed in **Table 2** below, the survey was answered by 307 graduate students, 26% of them were male while 74% of them were female. Among those who responded, 48% of them were studying in the private educational sector and 52% of them were studying in the public sector. Since this study addressed graduate students, the age range was between 19 and 56 and the mean age was 26, with the majority being single. There were various responses from different departments: Business- Health- Engineering and Architecture- Sociology, Anthropology and Media Studies- Law- Economics- and others. Among the respondents, 71% of them were full timers and the others were part timers. Also, it is interesting to note that 41% of the participants were employed.

**Table 2:** Descriptive statistics of samples by demographic factors

| | | | |
|---|---|---|---|
| Gender | Male | 80 | 26% |
| | Female | 227 | 74% |
| Age | 18 - 26 years old | 218 | 71% |
| | 27 - 35 years old | 58 | 19% |
| | 36 - 45 years old | 23 | 7% |
| | 46 - 56 years old | 8 | 3% |

| | | | |
|---|---|---|---|
| Marital Status | Single | 186 | 60% |
| | Engaged | 15 | 5% |
| | Married | 58 | 19% |
| | In a relationship | 40 | 13% |
| | Divorced | 5 | 2% |
| | Other | 3 | 1% |
| Employment Status | Yes (employed) | 128 | 41% |
| | No (Unemployed) | 181 | 59% |
| University Sector | Private | 146 | 48% |
| | Public | 161 | 52% |
| Program Type | Full Time | 219 | 71% |
| | Part Time | 88 | 29% |
| Major | Business | 67 | 22% |
| | Health | 52 | 17% |
| | Engineering & | 41 | 13% |
| | Architecture | 35 | 11% |
| | Sociology, Anthropology | 30 | 10% |
| | & Media Studies | 18 | 6% |
| | Law | 64 | 21% |
| | Economy | | |
| | Other | | |
| Last Semester GPA | 95-100 | 25 | 8% |
| | 90-95 | 57 | 19% |
| | 85-90 | 58 | 19% |
| | 80-85 | 42 | 14% |
| | 75-80 | 37 | 12% |
| | 70-75 | 27 | 9% |
| | 65-70 | 26 | 8% |
| | 60-65 | 22 | 7% |
| | Below 60 | 13 | 4% |

As shown in **Table 3**, the mean and the median of institutional readiness are 2.967 and 3.000 respectively with a standard deviation of 1.088. However, it's shown that the participants were leaning towards a positive persuasion with regard to their lecturers as well as to the contents/materials readiness for online learning given the means 3.553 and 3.547 respectively and the median 3.667 for both. It's also remarkable that the

students incorporated in this study were more likely to agree that they are ready for online leaning with a median of 4 and a mean of 3.881 while they were less likely to be satisfied with a mean of 2.815 and a median of 2.600. Nevertheless, the average responses of all participants suggested a moderate impact of COVID-19 on students' psychological health given a median of 2.000 and a mean of 1.832.

**Table 3:** Descriptive statistics of samples by constructs

| Factors | Mean | Median | Standard Deviation |
|---|---|---|---|
| Institutional readiness | 2.967 | 3.000 | 1.088 |
| Lecturer readiness | 3.553 | 3.667 | 0.845 |
| Content readiness | 3.547 | 3.667 | 0.889 |
| Student readiness | 3.881 | 4.000 | 0.827 |
| Psychological distresses | 1.832 | 2.000 | 0.733 |
| Satisfaction | 2.815 | 2.600 | 1.073 |

### 4.2. Internal Consistency – Cronbach's alpha

Internal consistency is the level to which a paradigm is measured by a collection of questions; it is related to the homogeneity of the questions' items (Henson, 2001).

Accordingly, Cronbach's alpha was used to measure how every group of questions is closely related to a construct. Cronbach' alpha returns a number between 0 and 1; 1 being the highest value and 0 being the lowest value with a threshold of 0.7 i.e., if an item gets a value below 0.7 it is considered unreliable whereas a value above or equal to 0.7 considers reliability (Nunnally, 1978).

Applying Cronbach's alpha to all of our variable items, we can deduce the reliability of the items of all the variables as alpha is greater than 0.7 for all. The results are represented in **Table 4**.

**Tables 5,6,7,8,9 and 10** show Cronbach's alpha value if one of the question items is deleted. As presented in the tables, the coefficients of reliability for all the construct items involved in institutional, lecturers, materials/contents, and students' readiness and satisfaction, and the psychological distresses due to COVID-19 are above 0.7 which means they're all consistent and reliable. It is also, interesting to observe that alpha coefficient rises to 0.820 if question item Q18 of the Students' Readiness is deleted, providing higher level of reliability and consistency.

**Table 4:** Cronbach's alpha of the constructs

| Variable | Number of Items | Cronbach's Alpha |
|---|---|---|
| Institutional readiness | 4 | 0.850 |
| Lecturers' readiness | 6 | 0.900 |
| Content of the courses' readiness | 6 | 0.860 |
| Students' readiness | 5 | 0.790 |

| | | |
|---|---|---|
| Psychological distress due to COVID-19 | 6 | 0.800 |
| Students' satisfaction | 5 | 0.920 |

**Table 5:** Cronbach's alpha if Institutional Readiness items were deleted

| Institutional Readiness | Cronbach's Alpha if item is deleted |
|---|---|
| Q1: My institution's Information Technology's Office was at our disposal when a new problem related to e-learning is encountered | 0.790 |
| Q2: My institution has provided enough computers for use and practice | 0.850 |
| Q3: My institution has given us access to the central library website and search for materials | 0.800 |
| Q4: My institution was adequately capable to support e-learning | 0.780 |

**Table 6:** Cronbach's alpha if Lecturers' Readiness items were deleted

| Lecturer's Readiness | Cronbach's Alpha if item is deleted |
|---|---|
| Q5: My institution's lecturers were very excited to teach on e-learning platforms | 0.90 |
| Q6: My institution's lecturers were very interactive during the discussions on e-learning platforms | 0.880 |
| Q7: My institution's lecturers have presented the materials in a very interesting way | 0.870 |

| | |
|---|---|
| Q8: My institution's lecturers have encouraged questions during the sessions and requested continuous feedbacks to ensure students' satisfaction | 0.880 |
| Q9: My institution's lecturers have encouraged us to participate in class discussions on e-learning platforms | 0.880 |
| Q10: My institution's lecturers have encouraged us to use e-learning | 0.880 |

**Table 7:** Cronbach's alpha if Materials/Contents' Readiness items were deleted

| **Material/Content's Readiness** | **Cronbach's Alpha if item is deleted** |
|---|---|
| Q11: The online courses' materials were sufficient and relevant to the courses' requirements through e-learning | 0.840 |
| Q12: The functions of e-learning system were easy to use | 0.850 |
| Q13: It was easy to navigate on e-learning system | 0.850 |
| Q14: The recordings of the sessions and other materials were always available online at the disposal of the students | 0.840 |
| Q15: The courses' materials were uploaded online on time | 0.850 |
| Q16: The user interfaces of the online system were well designed | 0.820 |

**Table 8:** Cronbach's alpha if Students' Readiness items were deleted

| Students' Readiness | Cronbach's Alpha if item is deleted |
|---|---|
| Q17: I enjoy using personal computers | 0.760 |
| Q18: I usually use my personal computer for work and gaming purposes | 0.820 |
| Q19: I am comfortable with using PC and software applications before the implementation of e-learning | 0.720 |
| Q20: My technological skills were efficient enough to help in e-learning | 0.720 |
| Q21: I am not intimidated by using e-Learning based courses | 0.740 |

**Table 9:** Cronbach's alpha if Psychological Distresses due to COVID-19 items were deleted

| Students' Psychological Health | Cronbach's Alpha if item is deleted |
|---|---|
| Q22: Difficulty in concentration | 0.770 |
| Q23: Irregular sleeping habits | 0.780 |
| Q24: Impact on academic performance | 0.770 |
| Q25: Social Isolation | 0.770 |
| Q26: Depressive thoughts | 0.740 |

| | |
|---|---|
| Q27: Worry about own health and the health of loved ones | 0.780 |

**Table 10:** Cronbach's alpha if Students' Satisfaction items were deleted

| Students' Satisfaction | Cronbach's Alpha if item is deleted |
|---|---|
| Q28: I find the quality of the online system computers favorably with the face to face learning | 0.920 |
| Q29: If I get the opportunity to involve in an online learning system I would gladly do so | 0.900 |
| Q30: I gained more interest in the courses' subject through e-learning | 0.900 |
| Q31: I feel that e-learning has served all my needs well | 0.890 |
| Q32: I am satisfied with the e-learning educational system | 0.890 |

### 4.3. Linear Regression Model for testing Satisfaction Hypotheses

Linear regression model was performed with students' satisfaction as a dependent variable and the five constructs (institutional, lecturer, content and students' readiness and the psychological distresses due to COVID-19) as independent variables as discussed in **Section 3.3**. This model was employed to test hypotheses H1, H2, H3, H4 and H5 which declare a positive relationship between the previously mentioned five constructs and students' satisfaction. Findings of this model are displayed in **Table 11**. Linearity and homoscedasticity were validated through **Fig. 1-2.** where the plot of residuals versus fitted was randomly patterned. Also, a Q-Q plot or Quantile-Quantile

plot was deployed which depicts that the data is coming from a normal distribution since it follows a straight line.

**Table 11 shows** that the institutional readiness is a strong predictor for students' satisfaction (p-value = 0.006 < 0.05 and positive coefficient = 0.175) which supports hypothesis H2. Lecturer readiness and students' satisfaction are also significant (p-value < 0.0001and positive coefficient = 0.359) which validates hypothesis H4. Content readiness is an insignificant predictor for students' satisfaction as the p-value = 0.632 > 0.05. Thus, hypothesis H5 is not supported. Students' readiness is statistically significant as the p-value = 0.048 and the coefficient equals 0.145, which supports hypothesis H6. The psychological distresses and students' satisfaction were significant where p-value = 0.012 < 0.05 with a negative coefficient = -0.176, which validates hypothesis H1.

**Table 11:** Linear Regression Output for testing the factors that affect students' satisfaction with online learning

| | Coefficient | Std Error | T value | P value |
|---|---|---|---|---|
| Intercept | 0.598 | 0.341 | 1.755 | 0.080 |
| Institution readiness | 0.175 | 0.063 | 2.763 | 0.006 * |
| Lecturer readiness | 0.359 | 0.079 | 4.564 | <0.0001*** |
| Content readiness | 0.042 | 0.087 | 0.480 | 0.632 |
| Student readiness | 0.145 | 0.073 | 1.990 | 0.048 * |
| Psychological distresses | -0.176 | 0.069 | -2.531 | 0.012 * |

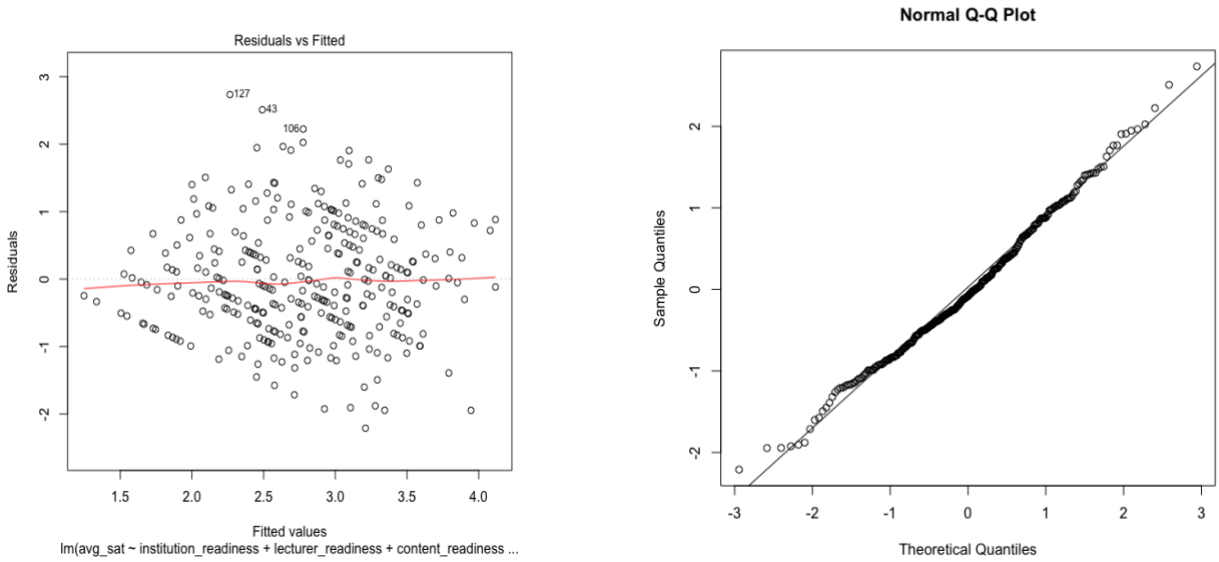


**Fig. 1:** Residual Diagnostic

### 4.4. Linear Regression Model for Testing Students' Readiness Hypotheses

Regression model was executed in order to test hypotheses H7 and H8 which predict students' readiness through demographic factors and university sector. Findings of this model are displayed in **Table 12**, where it was confirmed that gender is a significant predictor for students' readiness where findings suggest that males (p-value = 0.043) have higher chances to be ready for e-learning than females, which supports hypothesis H7. However, the program type (full time/part time program) was an insignificant predictor for students' readiness where p-value = 0.755> 0.05. Thus, hypothesis H8 is not supported. Also, it is remarkable that an employed status is a significant predictor for readiness with a p-value = 0.039 which is less than 0.05 while all other demographic factors are statistically insignificant. Furthermore, the public university sector is a negative predictor for students' readiness given that p-value < 0.0001 with a coefficient = -0.565, which supports our findings in the two-tail tests.

**Table 12:** Linear regression output for students' readiness with respect to socio-demographic factors

| | Coefficient | Std Error | T value | P value |
|---|---|---|---|---|
| Intercept | 3.983 | 0.561 | 7.101 | <0.0001*** |
| University sector_Public | -0.565 | 0.117 | -4.846 | <0.0001*** |
| GenderMale | 0.207 | 0.102 | 2.030 | 0.043 * |
| Program_type Part Time | -0.031 | 0.099 | -0.312 | 0.755 |
| Marital_Status Engaged | -0.301 | 0.383 | -0.785 | 0.433 |
| Marital_Status In a relationship | -0.445 | 0.354 | -1.257 | 0.210 |
| Marital_Status Married | -0.388 | 0.347 | -1.117 | 0.265 |
| Marital_Status Other | -0.500 | 0.542 | -0.922 | 0.358 |
| Marital_Status Single | -0.378 | 0.337 | -1.122 | 0.263 |
| Employment StatusYes | 0.189 | 0.091 | 2.072 | 0.039 * |
| Semester GPA | 0.006 | 0.005 | 1.130 | 0.260 |

### 4.5. Two-Tail Tests for Comparing Readiness of Educational Sectors

Two-tail tests were conducted to compare the readiness of both public and private educational sectors in terms of their institution, lecturers, contents/materials and students to use online learning during pandemic. Hypothesis H6, which declares that the private educational sector is more ready for e-learning than the public sector, was

divided into 4 sub hypotheses that state a superior readiness in the private educational sector compared to the public sector in terms of the four constructs (institution, lecturers, contents/materials and students' readiness). To test these hypotheses, variance test was first conducted to examine the equality of the variances of private and public educational sectors. Using R and with a confidence interval of 95%, variance test showed unequal variance for both sectors.

Accordingly, two-tail tests were executed, and the findings are displayed in **Table 13**.

**Table 13:** Two-tail tests outputs

| Hypothesis | T value | Mean difference | p-value |
|---|---|---|---|
| H6a: Institution readiness in private sector > Institution readiness in public sector | 12.650 | $\hat{\mu}_{i1}$ - $\hat{\mu}_{i2}$ = 0.435 | < 0.0001 |
| H6b: Lecturers' readiness in private sector > Lecturers' readiness in public sector | 4.722 | $\hat{\mu}_{l1}$- $\hat{\mu}_{l2}$ = 0.944 | < 0.0001 |
| H6c: Contents' readiness in private sector > Contents readiness in public sector | 11.093 | $\hat{\mu}_{c1}$ - $\hat{\mu}_{c2}$ = 0.705 | < 0.0001 |
| H6d: Students' readiness in private sector > Students' readiness in public sector | 8.603 | $\hat{\mu}_{s1}$ - $\hat{\mu}_{s2}$ = 1.295 | < 0.0001 |

**Note:** $\hat{\mu}_{i1}$– estimated mean score of institutional readiness in private educational sector; $\hat{\mu}_{i2}$ – estimated mean score of institutional readiness in public educational sector; $\hat{\mu}_{l1}$ – estimated mean score of lecturer readiness in private educational sector; $\hat{\mu}_{l2}$ – estimated mean score of lecturer readiness in public educational sector; $\hat{\mu}_{c1}$ – estimated mean score of content readiness in private educational sector; $\hat{\mu}_{c2}$ – estimated mean score of content readiness in public educational sector; $\hat{\mu}_{s1}$ – estimated mean score of student readiness in private educational sector; $\hat{\mu}_{s2}$ – estimated mean score of student readiness in public educational sector

Findings denote that the difference in the estimated mean scores of readiness between the private educational sector and the public educational sector, in terms of institutions, lecturers, contents/materials and students, is greater than 0, designating that the estimated mean readiness in the private educational sector is greater than that in the public sector. It is also interesting to note that the mean difference in students' readiness between the private and public educational sectors has recorded 1.295 which is the highest among all other readiness factors and stresses on the fact that students in the private educational sector are more prepared and ready for e-learning than students in the public sector. Therefore, hypotheses H6a, H6b, H6c and H6d are supported since p-values are less than 0.05 as shown in **Table 13**. Thus, the private educational sector is more ready for online learning than the public sector.

### 4.6. Logistic Regression Model for Exploring the Factors That Affect Students' Experience With E-learning

In order to study the effects of sociodemographic and readiness factors on students' experience with online learning (positive experience/negative), a binary logistic regression model was performed as mentioned in **Section 3.3**. As satisfaction affects students' experience with online learning; a satisfied student would have a positive experience. The average of the items in each construct (students' satisfaction, institutional readiness, lecturer readiness, content readiness, student readiness and the psychological distresses due to COVID-19) was calculated, resulting for each construct one variable. Thus, a new coded variable for students' experience has taken a value of 1 if satisfaction is greater than 3.5, denoting a positive experience and 0 otherwise.

As **Table 14** denotes, the findings of the logistic regression reveal that institutional readiness has a positive effect on students' experience with online learning

where coefficient = 0.077 and p-value = 0.044 < 0.05. More accurately, if institutional readiness increases by one unit (scale), the odds of having a positive experience with e-learning increases by 8%. Also, a positive and significant relationship exists between lecturers' readiness and students' experience where coefficient = 0.095 and p-value = 0.028 < 0.05; a one unit-increase (scale) in lecturers' readiness would increase the odds of having a positive experience with online learning by 10%. Additionally, the employment status has a significant and positive effect on students experience with e-learning (coefficient = 0.151 and p-value = 0.009 < 0.05). More specifically, being an employed student increases the odds of having a positive experience with online learning by 1%. However, the university sector negatively affects students' experience where coefficient = -0.318; findings suggest that being in the public educational sector ($p < 0.0001$) would decrease the odds of having a positive experience by approximately 25%. With regards to socio demographic factors, gender, marital status, age, semester GPA and program type were not important drivers of positive students' experience with distance learning.

**Table 14:** Logistic Regression output for the effects of socio-demographic and readiness factors on students' experience with online learning

| | Coefficient | Std Error | T value | P value | OR |
|---|---|---|---|---|---|
| Intercept | -1.217 | 0.465 | -2.615 | 0.010 * | 0.296 |
| Institution readiness | 0.077 | 0.038 | 2.029 | 0.044 * | 1.080 |
| Lecturer readiness | 0.095 | 0.043 | 2.206 | 0.028 * | 1.099 |
| Content readiness | 0.080 | 0.048 | 1.653 | 0.100 | 1.083 |
| Student | 0.032 | 0.037 | 0.843 | 0.400 | 1.032 |

| | | | | | |
|---|---|---|---|---|---|
| readiness | | | | | |
| Psychological distresses | -0.027 | 0.038 | -0.695 | 0.488 | 0.974 |
| genderMale | 0.006 | 0.066 | 0.097 | 0.923 | 1.006 |
| University sectorPublic | -0.289 | 0.083 | -3.480 | <0.0001 *** | 0.749 |
| Marital StatusEngaged | 0.178 | 0.264 | 0.676 | 0.500 | 1.195 |
| Marital StatusIn_a_relationship | -0.104 | 0.254 | -0.410 | 0.682 | 0.901 |
| Marital StatusMarried | 0.216 | 0.235 | 0.918 | 0.360 | 1.241 |
| Marital StatusOther | 0.555 | 0.357 | 1.554 | 0.122 | 1.741 |
| Marital StatusSingle | 0.059 | 0.245 | 0.243 | 0.808 | 1.061 |
| Employment StatusYes | 0.151 | 0.057 | 2.655 | 0.008 * | 1.163 |
| Age | -0.009 | 0.006 | -1.335 | 0.183 | 0.991 |
| Semester GPA | 0.006 | 0.003 | 1.875 | 0.062 | 1.006 |
| Program TypePart Time | 0.017 | 0.063 | 0.269 | 0.788 | 1.017 |

# CHAPTER 5

# DISCUSSION AND CONCLUSION

## 5.1. Study Implication and Conclusion

With the outbreak of COVID-19, e-learning has grown at a higher rate compared to previous years, and that's mainly due to the healthcare situation that imposed full closures of schools and universities complemented with a quick transition to online learning (Alqahtani & Rajkhan, 2020). However, in a distressed country setting, the implementation of online learning was very challenging because of the financial, social and economic setbacks (Marshall & Wolanskyj-Spinner, 2020), where most of the e-learning projects either partly fail or collapse entirely in properly delivering their services. This is due to the high implementation and sustainability costs for a dependable Information Communication Technology (ICT) infrastructure for many universities in the developing countries (Sabi, 2014). In Lebanon, for example, the execution of online learning has been very difficult since the country was already facing different problems on the political and economic level and so COVID-19 was seen as an extra burden (Bizri et al., 2020). This situation has affected professors, and university students alike because of the stressors and factors that subjected them to anxiety, stress, and depression, specifically through the pandemic (Othman et al., 2019). As such, students' satisfaction with e-learning becomes an important measure to evaluate their experience with this learning system.

The current study has taken Lebanon's case as a distressed country in an attempt to investigate the factors that affect students' experience and students' readiness to online learning method during pandemic in both public and private educational sectors.

The impact of each factor was first studied by testing relevant hypotheses about its association with students' satisfaction. It was found that institutions, lecturers and students' readiness positively affect students' satisfaction. These findings concur with the studies in the literature (Headar et al., 2013; Palmer & Holt, 2010).

In an online setting, university support is considered one of the key factors that affect students' satisfaction (Pham & Tran, 2020). In this study, graduate students were asked on the extent their institution provided technical support and computer services. The findings of this research showed that the higher the institution readiness, the higher the students' satisfaction is. Additionally, lecturers play a very crucial role in presenting the courses' material in a fascinating way to the students by triggering their interests and encouraging them to participate in the online learning process. In this study, students were asked about the degree to which lecturers have shown readiness in an online learning setting; they were asked about the interactive environment instructors have provided besides lecturers' support and willingness to answer questions clearly without leaving any room for confusion. Results showed that the more lecturers show readiness, the more students are satisfied. Also, students who show high competency in technology and prove to be able to use online learning tools sufficiently are more likely to be satisfied than others (Chang, 2013; Palmer & Holt, 2009). Findings of our study support the literature, where a positive association was shown to exist between students' readiness for e-learning and students' satisfaction. While Ali & Ahmad (2011) found a positive relationship between content readiness and students' satisfaction, this study wasn't able to confirm this association. Thus, no relationship was shown to exist between content readiness and students' satisfaction. In line with the findings of Fawaz & Samaha (2020), this research also has shown that the higher the students'

psychological distresses due to COVID-19, the lower the satisfaction is with online learning.

Although the literature (Islam et al, 2011) highlighted differences in students' readiness among full timers and part timers, this study failed to detect a significant association between students' readiness and the type of program they are involved in (part time/full time). However, a significant relationship was shown to exist between students' gender and students' readiness for online learning where males proved to be more ready to use e-learning than females, thus, confirming the findings of Islam et al, (2011). Moreover, this study has tested the association between student's readiness and their employment status, and it was revealed that an employed student is more ready for e-learning than an unemployed one. Furthermore, 67% of the graduate students involved in this study revealed that they prefer the hybrid learning method over e-learning and face to face learning, supporting the findings of Alqahtani & Rajkhan (2020).

This study also compared the readiness for online learning between public and private educational sectors in Lebanon, the case of a distressed country. Saleh et al., (2008) have shown that the Lebanese University, which is the only public university in Lebanon, suffers from a lack of funding and thus has a shortage in computer and communication infrastructure. Furthermore, its staff and lecturers are less competent to use computers than staff and lecturers in institutions in more developed nations like the United States or in Lebanon's leading private educational institutions (Saleh, 2008), contributing to a lack of progression at the level of courses and materials (Kessel, 1972). In line with these findings, this study has shown that the private educational sector is more ready to adopt e-learning than the public one in terms of its institutions,

lecturers and contents. In addition, it was shown that students in the private educational sector are ready for online learning compared to their counterparts in the public sector, which supports the findings of Eze et al., (2018).

On the other hand, a classification model for positive students' experience with online learning was performed using logistic regression. The findings revealed that a one unit increase in institutional readiness suggests 8% increase in the odds of having a positive experience with e-learning. Also, being an employed student increases the odds of having a positive experience with online learning by approximately 1%. Another interesting finding is that being a student in the public educational sector would decrease the odds of having a positive experience by approximately 25%.

This study examined the factors that affect students' experience with online learning as well as students' readiness to use e-learning and compared these factors between public and private educational sectors. Therefore, after manifesting and explaining the factors that affect the relationship between students and institutions in an online learning setting, it is reasonable to conclude that educational institutions, specifically the public ones, should work on enhancing their technical and online services and should require trainings for their lecturers and students in order to make them more familiar with the online learning system and thus get them to a positive experience with this learning method. Additionally, universities should focus on the psychological and mental health of their students and lecturers and provide psychological services well adapted to the effects of COVID-19 on their psychological state. It is also worth noting that, although the study was conducted on university level graduate students, it is harmless to consider that the same factors apply for undergraduate level.

## 5.2. Limitation of The Research and Future Consideration

This study has several limitations. First, the survey occurred at the end of the spring semester 2021, when students are often busy with exams and deadlines which may have contributed to different results. Secondly, the participation of students from universities other than the American University of Beirut and the Lebanese University would have expanded the scope of this research by validating additional comparative conclusions. Another limitation of this study is that this study used the convenience sampling method which may not assure the generalizability of the findings. However, it is still a reliable sampling method to denote associations between variables (Lim, 2019; McMillan & Schumacher, 2010).

Future studies should go beyond the scope of graduate students' level and should further explore factors that affect students' satisfaction and readiness to online learning. It would be also interesting for future research to consider more than one distressed country to base its research on rather than taking the case of one country like this study did. Also, future studies should consider the different types of online learning (blended, flipped, synchronous.) and test the studied factors for each of these learning types. Additionally, further studies are needed to determine the effects of COVID-19 on students' psychological and mental health after the pandemic due to the great chance that the effects of this global pandemic on students may stay put for a lengthy period beyond the peak COVID-19 period itself (McAlonan et al., 2007).

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