

FACTORS AFFECTING THE STUDENT'S ACADEMIC PERFORMANCE UNDER DISTANCE LEARNING DURING THE COVID-19 CRISIS (Case Study of Altınbaş University in Turkey)

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A B S T R A C T	K E Y W O R D S
<p>The advent of the Covid-19 pandemic greatly disturbs the traditional way of getting an education. The transition from face-to-face to completely online occurs suddenly and in an unplanned way. This study analyzes those factors that affect students' online learning process and whether they play an important role in saving the student's academic year. Therefore, to achieve this objective, the seven independent variables, i.e., online learning readiness, emotional competence, information overload, communication overload, satisfaction, and perceived difficulty, were chosen, and the study's dependent variable is academic loss. The study utilizes the quantitative data of 206 students, and the software used for the analysis is SPSS software. The result shows that all the variables positively affect academic performance except for information overload, which negatively affects academic performance. The study gives valuable implications that are beneficial for higher education institutions.</p>	<p>Online Education, Academic Year, Students, Turkey, SPSS.</p>

Introduction

An academic year is a complete cycle of educational activities that have been executed in educational institutions in a calendar year. The universities and other educational institutes have followed the prepared and specified course curriculum to complete their academic years. It helps to make the students' learning processes complete and makes them more skillful. The academic year at most universities starts in September. However, the study program begins in early October. In June, the academic year ends. The time frame varies from university to university, but the starting month and ending time are almost identical in every university. Based on the time frame of the course and the

actual duration, university authorities plan their course curriculum. Completing the curriculum on time is considered to complete one academic year in universities.

The worldwide pandemic of COVID-19 significantly affected the academic environment. The lockdowns caused by the pandemic and the regulatory guidelines for preventing the spread restrict educational institutes from following their regular course curriculum. As a result of this yearly assessment of the students, it might not be possible for the educational institutes to fill the gaps in an academic year. To overcome this issue, the approach of distance (online) learning has been taken into consideration by universities.

Distance learning facilities aim to offer learning facilities and environments in remote environments that make the learning process more accessible to students. It also allows educational institutes to maintain consistency in a disruptive situation in which classroom facilities cannot be executed. Hence, distance learning might be the approach for future learning initiatives due to the restrictions of a global pandemic. Like any other industry, the education industry is also significantly affected. As a result, educational institutions are completely closed, and students encounter a disruptive academic environment. To overcome the issue, the concept of distance learning through an academic medium has been considered by educational institutions, mainly higher-level institutions where the learning gap can affect students very badly. The use of the internet medium and virtual tools is considered to facilitate distance learning facilities, which can maintain COVID protocols easily and deliver a safe learning experience to the learners (Khan, Khan, & Arbab, 2021). Hence, the main purpose of distance learning is to maintain consistency in the academic process by delivering better access to students in any problematic situation.

The approach of online learning facilities has numerous benefits over traditional offline studies, which might be greatly helpful in the pandemic situation of the 21st century. As (Haider & Al-Salman, 2021) mentioned, online education delivers additional flexibility to the students and educators who might be useful in the pandemic situation of COVID-19 to avoid any educational gap. Apart from that, online learning also allows students and accessories to explore the field of study better by analyzing different areas. It might be very useful to bridge the knowledge gap that originated due to the absence of traditional classes for a pandemic. Furthermore, online education facilities make students and teachers more open to new technologies and how they can be used in the classroom for learning. It can increase the aspect of future study and environmental betterment. Apart from that, opportunities for virtual collaboration have been greatly facilitated through the online assessment during the pandemic. Thus, it might be very helpful in developing teamwork skills among the students during the projects. (Gelles, Lord, Hoople, Chen, & Mejia, 2020) mentioned that self-discipline and other soft skills among students are greatly framed in online learning, which might make the objectives of online learning in the epidemic more successful. Due to the global pandemic canceling university attendance and the growing distances between people, some universities have been forced to stop in-person education and switch to e-learning. This has made distance education more important.

With the advent of the Covid-19 pandemic, many educational institutions opted for online learning as UNESCO recommended distance learning programs for interrupted education. However, it was difficult for educational institutions to adopt online learning without facing challenges and problems. The studies have identified several difficulties from student and teachers' perspectives in online education. The most identified challenges include limited internet access, unfamiliar information technology, engagement, lack of experience, and learning outcomes. Previously, many studies have

analyzed the nexus between student satisfaction, learning efficiency, and online learning. However, limited studies have been done on the predictor that influences student performance in online learning during the Covid-19 Pandemic. In analyzing the literature focusing Covid1- 9 pandemic, the studies have investigated factors that influence student performance. Still, none of the studies has examined emotional competence, online learning readiness, Information overload, communication overload, perceived difficulty in student satisfaction and performance in online learning at the time of the Covid-19 pandemic, especially in the case of Turkey.

Therefore, this paper will investigate those factors that affect students and how they perceive these changes, displayed via their satisfaction and performance level. It also will highlight the latest trends in the universities for online education during a pandemic. The study will take Altinbaş University in Turkey as a case study.

2. Literature Review

(Al-Maroofof, Alhumaid, Akour, & Salloum, 2021) conducted a research which aims to inspect the attitude of undergraduate students toward learning online during the pandemic of Covid-19. The outcome of the research shows that all the considered variables, i.e., Perceived Ease of Use; Perceived Routine Use; Perceived Usefulness; Perceived Enjoyment; Self-efficiency, and Perceived Critical Mass have a positive association with e-learning.

Another study shows that the students who were using Microsoft Teams were more satisfied compared to others. Focusing on the online education system, the findings can be bifurcated into two aspects, i.e., positive and negative. From the positive aspects, factors like fewer distractions and "home comfort" motivate the students to opt for online learning. While factors such as deficiencies in discipline problems and instant feedback demotivate students to opt for online learning (Durak & Çankaya, 2020).

The outcome of this study identified five themes that affect the students' attitude to opt for online learning. These factors include individual factors, Learning environment, Instructional factors, and policies. All these factors affect the students' willingness to use online learning (Kurt, Atay, & Öztürk, 2022).

(Elhadary, Elhaty, Mohamed, & Alawna, 2020) conducted a research which tends to analyze the impact of e-learning and academic performance nexus among Turkish university students in the Covid-19 Pandemic. The outcome of this study shows that most of the variables negatively affected the teachers' and students' motivation to use online learning. 60.3% of the participants show anxiety, 41.8% show social problems, and 43.2% of the participants show internet connection as the factor that affects their motivation to opt for online learning. 65% of the students and 48% of the teachers said they were happy with online learning.

The outcome of another study shows that socio-economic factors and technological infrastructure play an important role and affect each country's students differently. The results show that students' self-efficacy and attitude play a big role in their cognitive engagement with online learning (Aguilera-Hermida, et al., 2021).

(Kamarudin, Shoaib, Jamjoom, Saleem, & Mohammadi, 2021) stated that emotional, social, personal, and cognitive engagement have a positive impact on students' intention to use e-learning. Moreover, the study showed that cognitive engagement mediates the association between emotional, social, and personal factors and students' intention to use e-learning.

The outcome of another study showed that usefulness and confirmation significantly affect the students' satisfaction. The variables such as subjective norms perceived behavioral control, and attitude affects the students' intention to use e-learning significantly and positively. Moreover, satisfaction is identified as a significant predictor that affects the student's willingness to use e-learning (Rajeh, et al., 2021).

Moreover, (El-Sayad, Md Saad, & Thurasamy, 2021) stated that academic self-efficacy affects emotional and behavioral engagement significantly. In comparison, perceived usefulness affects cognitive and emotional engagement significantly. Moreover, the teacher's presence affects all three engagement dimensions. In addition, emotional and behavioral engagement significantly affects behavioral engagement.

Another study showed that e-learning quality is shaped by service quality, the role of the teacher during the process, and overall system quality. Online interactions, digital competencies, and interaction between teachers and colleagues, on the other hand, are less significant. Moreover, student satisfaction is mediated by the association between student performance and e-learning quality (Keržič, et al., 2021).

After revising all the above literature, this conceptual model is driven (shown in Figure 1):

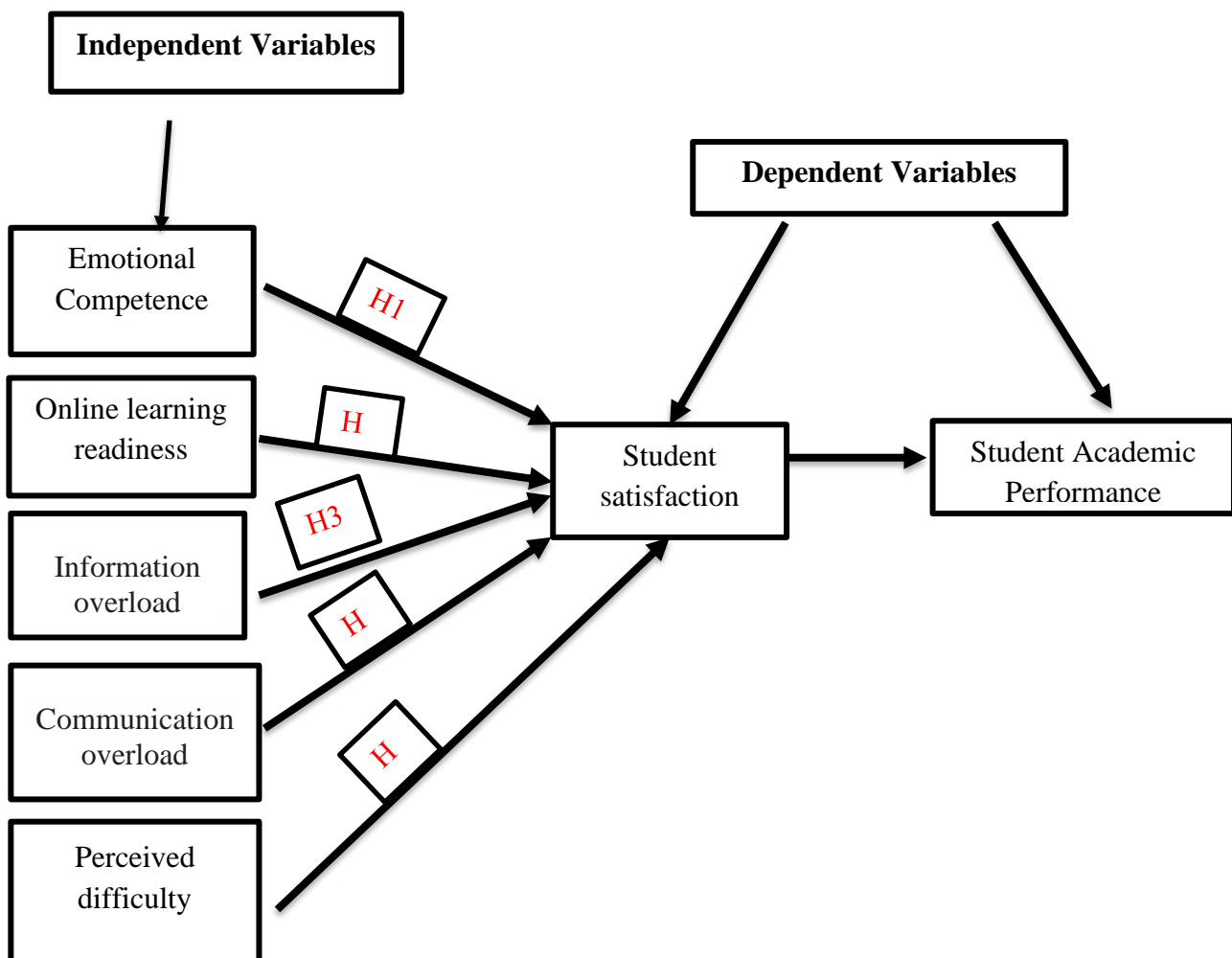


Figure 1: Conceptual model of the study

3. Methodology

The researcher identified independent and dependent factors through his review of previous studies on this subject. The independent variables are emotional competence, online learning readiness, satisfaction, information overload, and communication overload, while the dependent variable is student academic performance. Then the researcher writes hypotheses for his research. Then, the data is collected through questionnaires and is therefore a quantitative study. Finally, the data is analyzed and the results are shown.

The sample population of the study will be the students getting master's degrees in engineering who opted for online learning during the COVID-19 Pandemic. The sample size of the study will be 500. The population target is concentrated on Istanbul Altinbaş University.

The variable measurement of this study is divided into two types: for the demographic variables such as gender, age, and education level, the nominal scale is used as these variables have no quantitative value. Other than the above variables, the ordinal scale is used as these variables are measured on a five-point Likert scale. The ordinal sequence will strongly disagree, disagree, neutral, agree, and strongly agree.

The questionnaire will be shared with the university students via electronic media. To ensure the reliability of the data, all the collections will be evaluated by doing the pilot study. The collected data will be analyzed using the SPSS software. The test performed will include descriptive statistics, factor analysis, and regression analysis.

4. Results and Discussion

4.1 Demographic Profile

Table 1 explains the demographic profile of the respondents. In total, 206 respondents were approached to complete the questionnaire and participate in the survey.

Table 1: Descriptive Statistics (n = 206)

Characteristics		Frequency	Percent
Gender	Male	138	67
	Female	68	33
Age	18-25	121	59
	26-30	42	20
	31-35	20	10
	36-40	23	11
Education	Undergraduate	161	78
	Post-Graduate / Master's	23	11
	Others	22	10
Medium	Zoom	58	28
	Blackboard	53	26
	Uzem	95	46
Courses	1-2	87	42
	3-5	72	35
	Above 5	47	23

4.2 Mean Analysis

The findings show that the minimum value is 1 and the maximum value is 5. The mean value is on average 3 and the standard deviation is around 1.

4.3 Correlation Analysis

The correlation analysis explains the association between the variables. The Spearman's correlation is applied and the result is depicted in Table 2. The result shows that all the variables show moderate to high correlation. Moreover, all the independent variables are positively correlated with the dependent variable.

Table 2: Correlation Analysis

			EC	OLR	SAT	IO	CO	AP	PD
Spearman's rho	EC	Correlation Coefficient	1.000	.595**	.586**	.497**	.467**	.591**	.646**
		Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
		N	206	206	206	206	206	206	206
	OLR	Correlation Coefficient	.595**	1.000	.557**	.475**	.449**	.475**	.515**
		Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
		N	206	206	206	206	206	206	206
	SAT	Correlation Coefficient	.586**	.557**	1.000	.577**	.437**	.552**	.622**
		Sig. (2-tailed)	.000	.000		.000	.000	.000	.000
		N	206	206	206	206	206	206	206
	IO	Correlation Coefficient	.497**	.475**	.577**	1.000	.646**	.470**	.672**
		Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
		N	206	206	206	206	206	206	206
	CO	Correlation Coefficient	.467**	.449**	.437**	.646**	1.000	.461**	.565**
		Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
		N	206	206	206	206	206	206	206
	AP	Correlation Coefficient	.591**	.475**	.552**	.470**	.461**	1.000	.616**
		Sig. (2-tailed)	.000	.000	.000	.000	.000		.000
		N	206	206	206	206	206	206	206
	PD	Correlation Coefficient	.646**	.515**	.622**	.672**	.565**	.616**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
		N	206	206	206	206	206	206	206

** . Correlation is significant at the 0.01 level (2-tailed).

4.4 Reliability Analysis

In this study, the most commonly used internal consistency analysis is employed, i.e., reliability analysis, in which the coefficient of Cronbach's alpha is assessed. Table 3 shows the reliability test results. In addition, it shows the reliability results of the variable items before and after factor analysis.

As seen from the table, the Cronbach's Alpha value is higher than 0.6, which satisfies the benchmark criteria given by (Hair, Hult, Ringle, & Sarstedt, 2016) and (Tabachnick, Fidell, & Ullman, 2007). It indicates that the collected responses are reliable and can be used for further examination.

Table 3: Reliability Analysis

a: Before Factor analysis			b: After Factor analysis	
Variables	N Items	Cronbach's Alpha	N Items	Cronbach's Alpha
Emotional Competence	5	0.834	4	0.796
Online Learning Readiness	5	0.827	2	0.765
Satisfaction	5	0.852	2	0.661
Information Overload	3	0.817	3	0.817
Communication Overload	4	0.828	2	0.783
Perceived Difficulty	3	0.862	2	0.992
Academic Performance	4	0.803	2	0.721
Overall Reliability	29	0.957	17	0.921

4.5 Factor Analysis

The Kaiser-Meyer-Olkin (KMO) analyzes the sampling adequacy of the response. While Bartlett's test is applied to check the factorability of the matrix combinedly. The KMO test explains the data suitability for factor analyses. The findings show that the KMO value is greater than 0.7, which meets the benchmark criteria of greater than 0.6. Bartlett's test explains the adequacy of the sample, and the value is significant as a P-value < 0.05.

4.6 Regression Analysis

The regression analysis is performed to analyze the association among the considered variables. Linear regression acts as a tool that helps us to analyze and understand the causal association between the variables. The results (see Table 4) show that the independent variable can predict almost 46% of the dependent variable. The value of VIF is less than 10, which shows that multicollinearity does not exist among the variables. The P-value of F-statistics is less than 0.05, which means that a combined effect exists among the considered variables. The result shows that out of 6 hypotheses, 4 hypotheses are accepted, and 2 are rejected. The EC, SAT, CO, and PD significantly affect academic performance as the P value is less than 0.05, while OLR and IO show an insignificant association. Similarly, all the variables show a positive association with academic performance except for IO, which shows a negative association.

Table 4: Regression Analysis

Variables	Beta	t	Sig.	VIF
(Constant)	0.62	2.48	0.01	
EC	0.30	3.53	0.00	1.95
OLR	0.08	1.26	0.21	1.72
SAT	0.20	2.71	0.01	1.96
IO	-0.06	-0.84	0.40	2.24
CO	0.12	2.03	0.04	1.79
PD	0.21	3.76	0.00	1.60
Adjusted R Square 0.444				
F-Statistic (Sig) 28.256 (0.000)				

4.7 General Discussion

For the first hypothesis which is related to emotional competence and academic performance, the result shows that the connotation among the two variables is positive and significant. The result implies that students that have high emotional competence can identify and understand the emotional cues in their atmosphere which facilitates social interaction. This positive interaction facilitates their capability to give attention to their academic tasks. Students with high emotional competence can sustain relationships, regulate stress and emotions, recover from failure, and find new educational opportunities, leading them to control emotional systems' adverse effects on their academic performance.

For the second hypothesis which is related to online learning readiness and academic performance, the result shows that the connotation among the two variables is positive but insignificant. The result implies that students that can manage search engines, Microsoft Office programs, and managing software have high academic performance. Moreover, the students willing to learn online have high academic performance.

For the third hypothesis which is related to information overload and academic performance, the result shows that the association between the two variables is negative and insignificant. The plausible reason behind this association can be elucidated by the fact that when the information is shared with the student, they can effectively use and evaluate the information for their good if they are unable to comprehend the information or its retrieval is beyond their capacity it can affect their academic performance.

For the fourth hypothesis which is related to communication overload and academic performance, the result shows that the connotation among the two variables is significant and positive. The result argued that students with a richer experience in handling communication and autonomy in using social media, such as filtering unnecessary information and requests are less prone to exhaustion. Thus, they can concentrate on their studies.

For the fifth hypothesis which is related to perceived difficulty and academic performance, the result shows that the connotation among the two variables is positive and significant. The possible reason behind this association can be clarified by the Social-Cognitive Theory, which postulates that individuals can decide their course of action and organize resources that are needed to perform the

tasks successfully. Therefore, the students who want to learn and improve their performance challenge their selves by conferring obstacles and opt for difficult learning tasks over easy learning.

For the last hypothesis which is related to academic satisfaction and performance, the result shows that the connotation among the two variables is positive and significant. The result implies that students who are gratified with online technology are more willing to take online classes and lectures and have high academic performance.

5. Conclusion and Recommendations

The objective of this research is to analyze those important factors for online learning and how those factors help save the students' academic year. The data was taken from 206 university students to study the association between the variables, and the SPSS software was used for the analysis. The result shows that out of six, four hypotheses were accepted. Moreover, all the variables show a positive effect on academic performance except for information overload, which negatively affects academic performance.

This study contributes both theoretically and practically. From the theoretical perspective, this study contributes to the studies related to online learning. From a practical perspective, this study gives implications for higher education institutions. It is recommended that educational institutions, as the first step, should prepare students for online learning. The transition process requires high emotional competence; if they can control their emotions, they will be able to manage their educational loss. The educational institutes should not only provide instructions related to the usage of software but also on how to search online, avoid distractions, and communicate with other students and teachers effectively. Such instructions will help those students who think they cannot do online learning. Effective strategies that involve regulating, identifying, utilizing, and comprehending emotions should be offered through activities and online instructions. In addition, online counseling sessions should be accessible to students.

The study also implies that information overload affects the student's academic performance as excessive information hinders the learning abilities and knowledge acquisition process. In addition, the presence of unnecessary information confuses the students in identifying the relevant information. Therefore, it is recommended that educational institutions should encourage simulation games for academic purposes as these games help to improve the student's knowledge acquisition.

The authors recommend that Future studies can perform cross-sectional or comparative analysis to expand the generalizability of the result. Moreover, the mediation and moderation effects of the variables can be added.

References

1. Aguilera-Hermida, A., Quiroga-Garza, A., Gómez-Mendoza, S., Del Río Villanueva, C., Avolio Alecchi, B., & Avci, D. (2021). Comparison of students' use and acceptance of emergency online learning due to COVID-19 in the USA, Mexico, Peru, and Turkey. *Education and Information Technologies*, 26(6), 6823-6845.
2. Al-Marooof, R., Alhumaid, K., Akour, I., & Salloum, S. (2021). Factors that affect e-learning platforms after the spread of COVID-19: post-acceptance study. *Data*, 6(5).

3. Durak, G., & Çankaya, S. (2020). Undergraduate Students' Views about Emergency Distance Education during the COVID-19 Pandemic. *Online Submission*, 5(1), 122-147.
4. Elhadary, T., Elhaty, I., Mohamed, A., & Alawna, M. (2020). Evaluation of the academic performance of science and social science students in Turkish Universities during the COVID-19 crisis. *Journal of Critical Reviews*, 7(11), 1740-1751.
5. El-Sayad, G., Md Saad, N., & Thurasamy, R. (2021). How higher education students in Egypt perceived online learning engagement and satisfaction during the COVID-19 pandemic. *Journal of Computers in Education*, 8(4), 527-550.
6. Gelles, L., Lord, S., Hoople, G., Chen, D., & Mejia, J. (2020). Compassionate flexibility and self-discipline: Student adaptation to emergency remote teaching in an integrated engineering energy course during COVID-19. *Education Sciences*, 10(11).
7. Haider, A., & Al-Salman, S. (2021). Jordanian university instructors' perspectives on emergency remote teaching during COVID-19: humanities vs sciences. *Journal of Applied Research in Higher Education*.
8. Hair, J., Hult, G., Ringle, C., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage Publications.
9. Kamarudin, S., Shoaib, H., Jamjoom, Y., Saleem, M., & Mohammadi, P. (2021). Student's behavioral intention towards e-learning practices through augmented reality app during COVID-19 pandemic in Saudi Arabia. *Interactive Learning Environments*, 1-17.
10. Keržič, D., Alex, J., Pamela Balbontín Alvarado, R., Bezerra, D., Cheraghi, M., Dobrowolska, B., & Aristovnik, A. (2021). Academic student satisfaction and perceived performance in the e-learning environment during the COVID-19 pandemic: Evidence across ten countries. *Plos one*, 16(10).
11. Khan, U., Khan, G., & Arbab, K. (2021). Creating 'COVID-safe face-to-face teaching: Critical reflections on on-campus teaching during a pandemic. *Journal of University Teaching & Learning Practice*, 18(5).
12. Kurt, G., Atay, D., & Öztürk, H. (2022). Student engagement in K12 online education during the pandemic: The case of Turkey. *Journal of Research on Technology in Education*, 54(1), 31-47.
13. Rajeh, M., Abduljabbar, F., Alqahtani, S., Waly, F., Alnaami, I., Aljurayyan, A., & Alzaman, N. (2021). Students' satisfaction and continued intention toward e-learning: A theory-based study. *Medical education online*, 26(1).
14. Tabachnick, B., Fidell, L., & Ullman, J. (2007). *Using multivariate statistics*. Boston: MA: Pearson.