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From F2F to Virtual Class: Does Online Learning Readiness Matters to Course Satisfaction and Academic Performance?

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Abstract
This study attempts to examine the effect of online learning readiness dimensions (Computer and internet self-efficacy, self-directed learning, learning control, learning motivation, online communication self-efficacy) on course satisfaction as well as the effect of course satisfaction and academic performance. This study develops a framework for relating academic performance to prior research and underlying theories. The sample size is 306 undergraduates in UiTM Sabah Branch consists of Kota Kinabalu and Tawau campuses. Data will go through a survey using stratified sampling from 6 different faculties and analyze with descriptive and inferential statistics. The findings suggested that (CIS) was critical for online learning and was significantly related to student achievement in online education. We also discovered that students' readiness for online learning had a significant effect on course satisfaction (CS), and that students' motivation for learning (MFL) and course satisfaction (CIS) have a direct influence on course satisfaction in terms of online learning readiness. The current study proposes some areas for future research, such as conducting a survey of lecturers who are currently participating in online education. When the pandemic is over, a mixed-methods study, such as a post-pandemic study, could be conducted.
Keywords: Online Learning Readiness, Academic Performance, Course Satisfaction, Undergraduate Students

Introduction
From early January to September 2021, Malaysia reported over a thousand cases per day (Ministry of health, 2021). From Movement Control Order 1.0 to 3.0, several phases were established as a preventive measure to contain the spread of Covid-19 in Malaysia. Besides the MCO, the Malaysian citizen must adhere to Standard Operation Procedures (SOP), which include wearing a mask and refraining from interstate travel (Malaysian National Security Council, 2020). The pandemic condition and procedure impacted most industries, particularly the service sector, which includes education, manufacturing, and small- to medium-sized businesses (SME).

The education industry worldwide has a significant impact on Covid-19, whether in school or higher learning. Management, administration, teachers, lecturers, and students need a change from face-to-face to online learning. Compared to face-to-face with online or distance learning challenges, low student persistence completion rates (Bovermann et al., 2018). Some courses used online, blended, and hybrid learning (Subramaniam et al., 2018, Adams 2018). This method is not explicitly focused on undergraduates but on postgraduates and open courses too. However, majoring affected on this learning are comes from undergraduates' students.

Undergraduate students enrolled in Pre-diploma, diploma, or bachelor's degree programs have completed their secondary school education. They may struggle to engage and learn from online courses since they lack work experience. The learners' characteristics may vary as they transform from pedagogy to andragogy instructional models via online delivery courses (Ranganathan et al., 2021).

Problem Statement
Due to the epidemic cases, students cannot attend the university, which the government enforces to close the institution to control the cases (UNESCO, 2020). The government also emphasized that the students have access to and facilities to lecture and infrastructure to conduct online learning. From 2020 onwards, the academic calendar was issued, and lecturers were instructed to conduct all teaching online (Ministry of Higher Learning, 2020).

Some of the students are distressing much in the online learning processes because of problems, such as technology and communication (Pokrovskaia et al., 2021). The problem comes from the cost and poor connection, for example, devices and access like the internet data and webcam. The learning responsibilities are likely more significant than in face-to-face classes, where the communication limitations and lack of engagement in online learning environments make it challenging to emphasize each student's unique characteristics (Khandan and Shannon, 2021). Thus, it is critical to consider the students' motivation, self-efficacy, and attitudes toward online learning to ensure an effective online learning process (Herguner et al., 2021).

Individual students may experience emotional instability during the online learning process, making them unable to cope with stress effectively (SalmelaAro, 2021). Students who cannot manage their stress will perform poorly on examinations because they will have difficulty balancing their academic and social lives (Khan et al., 2013). Students with emotional instability demonstrated anxiety and stress by losing interest in their studies (Moldasheva and Mahmood, 2014). Thus, student readiness for online learning is critical in reducing stress and increasing motivation to achieve high academic performance.

Research Objective
1. To examine the effect of online learning readiness dimensions (Computer and internet self-efficacy, self-directed learning, Learning control, learning motivation, online communication self-efficacy) on course satisfaction
2. To investigate the effect of course satisfaction and academic performance
3. To understand the effect of online learning readiness and academic performance mediates by course satisfaction

Literature Review
Dependent Variable
Academic Performance

Higher education instituition from private and government covered all the college, university college and university. The academic performance is one of factor in making sure the institutions can produce the best employees in the future (Budiharso and Tarman, 2020). There are a few components that contribute to academic accomplishment because they can serve as the defining variable in making a student performs well on examinations in courses (Senko, 2019). The improvement of student performance has been the primary priority of the educational system, and many researchers have conducted considerable research to determine the factors that influence student performance in their education level (Remali et al., 2013). Academic accomplishment has been measured in a variety of ways by researchers, including grade point averages (GPA), lecturer ratings as well as grade retention and dropout percentages (Burns & Darling, 2002). However, as for this study, academic performance is defined as a student's ability to perform well in the subject and course throughout the semester.

Independent Variable
Online Learning Readiness (OLR)
Self-Directed Learning (SDL)

(SDL) stated as a technique that enables students to take individual responsibility and contribute to the production and assessment of significant and valued learning objective through the use of cognitive self-monitoring and contextual self-management methods (Garrison, 1997). Students make their own decisions about how to achieve their goals by using their prior knowledge objectives determine the online learning successful (Lin & Hsieh, 2001). It helps self-directed people to take part of their education and cultivate a deeper passion for their studies. Knowles (1977) described SDL as the process of deploying resources and capabilities for learning, recognising learning needs and planning the most effective instructional method, and assessing learning results (Rafique et al., 2021).

Computer and Internet Self-efficacy (CIS)

(CIS) is related to an individual's personal ability to apply enhanced diagnostic and problem-solving capabilities when confronted with technological issues while surfing the Internet (Eastin & LaRose, 2000). Throughout online learning, students with higher of self-efficacy outperformed and learned further than learners with a low level of self-efficacy in terms of internet access (Tsai and Tsai, 2003). Chung et al (2020) state that online learning is predicated on the use of technology. Students must be able to limit their computer and Internet usage thoroughly. Tsai et al (2020) discovered that CIS was crucial for online education and also substantially associated with student accomplishment. Thus, students' success in online discussions and academic achievement is influenced by their ideas about online learning via computer and their self-efficacy on the Internet (Wei & Chou, 2020).

Learner Control (LC)

Learner control was formerly used in the classroom to improve the learning process by allowing students to select how they learned or presented what they had learned (Taipjutorus et al., 2012). Nowadays, learner control is an essential dimension to understanding one's readiness for online learning. Learners should be able to choose and present tasks or content

on their terms. It means that students can choose their own pace, strategies, and sequence based on their interests and preferences (Valjataga & Laanpere, 2010). With the rapid progress of ICTs, the concept of learner control has evolved. According to Merrill (1983), individuals can learn as they make instructional decisions and experience the results. Learners who are more empowered to direct their own learning may perform better academically (Rafique et al., 2021).

Motivation for Learning (MFL)

Motivation drives a person to want to know, act, understand, believe, or learn specific skills, and it can also be defined as the drive to meet an individual's needs (Filgona et al., 2020). While learning motivation is a learner's viewpoint on events, and various perspectives result in diverse knowledge acquisition demands (Lin et al., 2017). Student motivation is generally and naturally connected to the student's willingness to participate in the learning process. Most motivation theorists believe that motivation plays a role in executing all learned responses and that learned behavior will not occur unless energized (Afzal & Ali, 2017). According to Hung et al (2010), intrinsic or extrinsic motivation in students has a significant impact on their learning performance. Intrinsic motivation is an essential factor in cognitive, social, and physical development because it is through acting on one's natural interests that one gains knowledge and skills (Ryan & Deci, 2020). Intrinsic motivation has been associated with lower dropout rates, higher-quality learning, better learning methods, and higher school enjoyment. In other words, if students are more motivated to learn and like sharing their views with others online, they will engage more actively in the discussion (Wei & Chou, 2020).

Online Communication Self Efficacy (OCS)

Online communication self-efficacy should be considered when measuring online learning readiness. It was one of five separate sub-dimensions under Readiness for Online Learning Scale (ROSL) by (Hung et al., 2010). Bandura (1997) described self-efficacy as an individual's belief and expectation in his or her capacity to execute a task. Self-efficacy in using a computer versus utilizing the internet and may differ (Hung et al., 2010). The distinctions could be how the series of internet behaviors are set up, maintained, and used. Internet self-efficacy may influence students' information-gathering skills, and their usage of these strategies may be facilitated in an Internet-based learning environment (Tsai, 2003). Kundu (2020) discovered that self-efficacy is a key element among teachers and students who use online platforms and that increased efficacy can encourage online behavior.

Mediator Variable
Course Satisfaction (CS)

Students' satisfaction with an online learning course depends on three main mechanisms: student assessment, learning process, and student's knowledge and skills throughout the course (Rodriguez et al., 2019). The lecturer's method used to assess the student is considered the main point, such as the assignment and test. The learning process must deliver accordingly thru the right platform and student engagement (Pellas, 2014). The course assessment should be representative of the student's knowledge and skills, such as creativity on the presentation and infographic (Damyanov and Tsankov, 2018). For instance, lecturer, system, and student are a greater variety of assessment tools to provide good feedback for course assessment (Moffitt et al., 2020). Many distance learning programs are successful when the lecturer gives the students adequate support (Danchikov et al., 2021). Course

satisfaction is a broad measure of a student's perception and value, and it most immediately relates to usefulness efficiency. Assuming that students perceive a course as convenient will also rate it as gratifying if all other factors are equal (Sanford et al., 2017). According to Chan et al., 2021, students are satisfied with online courses by utilizing flexible online tools for learning, communicating, and sharing. Participation and engagement of students can be accelerated when technology is used in the teaching and learning process (Bond et al., 2021). Therefore, the conceptual framework and hypothesis development are as below:

Figure 1 - Conceptual framework
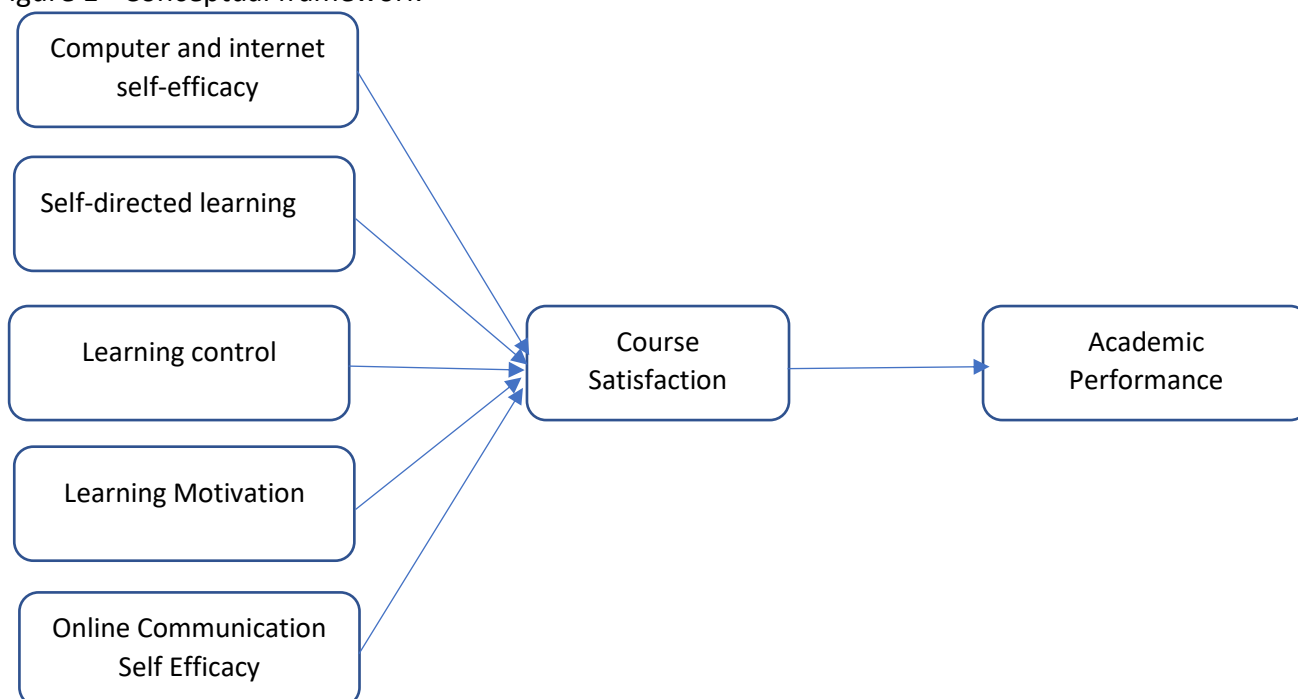
H1: There is a significant effect of Computer and internet self-efficacy and Course Satisfaction
H2: There is a significant effect of Self-directed learning and Course Satisfaction
H3: There is a significant effect of Learning control and Course Satisfaction
H4: There is a significant effect of Learning Motivation and Course Satisfaction
H5: There is a significant effect of Online Communication Self Efficacy and Course Satisfaction
H6: There is a significant effect of course satisfaction and Academic performance.
H7: There are mediating effect of Course Satisfaction on the relationship between Online Learning Readiness and Academic Performance.

Research Methodology
Research Design
Quantitative analysis is used to determine whether or not there is a relationship between the independent and dependent variables. The primary objective of this analysis approach is to employ observable results as a time and resource-saving strategy. Quantitative analysis is a technique that relies on numbers and insights to process knowledge and claims (Bryman and Cramer, 2002). The quantitative approach must be accepted as realistic, and the critic should have explained that conclusions were discarded by examining clarity and statements using observable evidence (Brundin et al., 2021).

A questionnaire is a tool used to conduct this research, and data collected is needed. English as the universal medium use as the language setting for this questionnaire. There will be four sections in the questionnaire: Section A, B, C, and D, which consist of demographic, student online readiness, course satisfaction, and academic performance. Meanwhile, for Section B and C, and D the answers will be answered based on Likert Scale ranges from Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree (Liedke, 2018). Table 1 summarize of overall measurement for this research

Table 1
Measurement of Variables for The Questionnaire

Construct	Item	Measure	Source For Items
Online Learning Readiness	18	Computer and internet self-efficacy, self-directed learning, learning control, learning motivation, and online communication self-efficacy	Rafique et al. (2021)
Course Satisfaction	7	Instructional style, course and content structure, assignment and project	Wei & Chaou (2020)
Academic Performance	5	Semester, examination, subject and goal.	Ambad et al., (2017)

Stratified Random Sampling
A stratified random sample is one in which the entire population is divided into homogeneous classes (Singh and Masuku, 2014). A demographic analysis may be used to determine the results of a survey. This is a process that involves stratified random sampling, which divides the entire community into homogeneous groups (Freschet et al., 2020). There are approximately 949 undergraduate students at UiTM Sabah branch, spread across six faculties, including applied sciences, accounting, business, and management. The minimum sample size will be determined using G power, which takes into account the number of predictors and the magnitude of the effect. The G power calculation indicates that the minimum sample size for this research is 138. (Barlett, 2019)

Data Analysis
SPSS Version 20.0 of the IBM Statistical Package for Software Science was used as the primary tool for data analysis. It provides an easily accessible set of features that enables organizations to derive value from their data. SPSS can assist researchers in comprehending data and resolving complex issues in business and research by providing a user-friendly interface. Thus, it can broaden one's knowledge base to ensure high precision in decision-making (IBM, 2020). Subsequently, the data from the population sample has been analysed and researched; inferential statistics are utilized to make forecasts for a larger population.

Result
Respondent Demographic Information
Table 2 shows the demographic information of the 306 participants, who were undergraduate students in their second semester and above who participated and provided feedback on online learning readiness (OLR), course satisfaction (CS), and academic performance (AP).

There were 230 female responses (75.16 %) compared to 76 male responses (28.84 %), with ages ranging from 18 to 30. The high percentage of respondents (97.71 %) are between the ages of 18 and 24, whereas the number of respondents was the lowest (2.29 %) are between the ages of 25 and 30. The majority of the respondents 167 (54.58 %) reside in urban areas, while just 139 (45.42 %) live in rural areas. There were 151 diploma level respondents (49.35 %) and 155 respondents from degree level (50.65 %). Overall, 226 (73.86 %) of respondents were from the Faculty of Business and Management, followed by 33 (10.78 %) came from the Faculty of Hotel Management and Tourism, and 27 (8.82 %) came from the Faculty of Applied Sciences. Respondents from the Faculty of Accountancy and Faculty Administrative Science and Policy Studies, on the other hand, had a comparable number of respondents with 10 (3.27 %). Almost 87.91 percent of respondents had a current CGPA of between 3.01-4.00 pointer.

Table 2
Respondent Demographic Information

Characteristic	Category	N=306	Percentage
Gender	Female	230	75.16%
	Male	76	24.84%
Age	18-24 years	299	97.71%
	25-30 years	7	2.29%
Area of residence	Rural area	139	45.42%
	Urban area	167	54.58%
Program Level	Diploma	151	49.35%
	Bachelor Degree	155	50.65%
Faculty	Faculty of Business and Management	226	73.86%
	Faculty of Accountancy	10	3.27%
	Faculty of Hotel Management and Tourism	33	10.78%
	Faculty of Applied Sciences	27	8.82%
	Faculty of Administrative Science & Policy Studies	10	3.27%
Year of study	1st Year Part 2 (Degree)	25	8.17%
	1st Year Part 2 (Diploma)	16	5.23%
	2nd Year(Degree)	84	27.45%
	2nd Year(Diploma)	55	17.97%
	3rd Year(Degree)	41	13.40%
	3rd Year(Diploma)	45	14.71%
	≥4rd Years and Above (Degree)	40	13.07%
Current CGPA	2.00-2.50	1	0.33%
	2.51-3.00	36	11.76%
	3.01-3.50	121	39.54%
	3.51-4.00	148	48.37%

Measurement Model Estimation

The measurement model important on order to check the validity and reliability of each items. Table 3 shows all loading are higher than 0.7 achieved the requirement suggested by (Hair et al., 2021). While average variance extracted (AVE) of all constructs exceeded 0.5 (Bagozzi & Yi, 1988) while the composite reliability scores (CR) were all higher than 0.7 (Hair et al., 2013) means all the criterion achieved the convergent validity. The discriminant validity sufficient to achieve by seen on loadings of measured variables higher than cross loading as shows in table 4. Therefore we conclude both convergent and discriminant validity success to achieved.

Table 3

Measurement Model

Construct	Item	Loadings	AVE	CR
Computer and Internet Self-efficacy (CIS)	C1S1	0.873	0.687	0.867
	C1S2	0.867		
	C1S3	0.739		
Learner Control (LC)	LC1	0.731	0.533	0.773
	LC2	0.657		
	LC3	0.796		
Motivation for Learning (MFL)	MFL1	0.645	0.573	0.842
	MFL2	0.794		
	MFL3	0.823		
	MFL4	0.753		
Online Communication Self Efficacy (OCS)	OCS1	0.782	0.614	0.827
	OCS2	0.828		
	OCS3	0.739		
Self-Directed Learning (SDL)	SDL1	0.711	0.581	0.846
	SDL3	0.732		
	SDL4	0.85		
	SDL5	0.748		
Course Satisfaction (CS)	CS1	0.793	0.626	0.921
	CS2	0.824		
	CS3	0.808		
	CS4	0.795		
	CS5	0.811		
	CS6	0.746		
	CS7	0.761		
Academic_Performance (AP)	AP4	0.832	0.735	0.847
	AP5	0.882		

Table 4
Discriminant validity

	AP	CIS	CS	LC	MFL	OCS	SDL
AP	**0.857**						
CIS	0.319	**0.829**					
CS	0.348	0.523	**0.791**				
LC	0.285	0.375	0.413	**0.73**			
MFL	0.318	0.41	0.563	0.519	**0.757**		
OCS	0.291	0.488	0.482	0.382	0.569	**0.784**	
SDL	0.394	0.527	0.471	0.591	0.588	0.507	**0.762**

Structural Model Estimation

We proceed to the path analysis to test the direct hypothesis between independent to dependent variable and course satisfaction to academic performance. The results presented in Table 5 and Figure 2. The R^2 value was 0.434 suggesting that 43.4% of the variance in could be explain by course satisfaction. From 5 of the hypothesis from independent variable only 2 not supported that is H2 not significant between SDL to CS ($\beta = 0.036$, $p > 0.1$) and H3 is not significant between LC to CS ($\beta = 0.077$ $p > 0.1$). The H1 ($\beta = 0.293$, $p < 0.01$), H4 ($\beta = 0.325$, $p < 0.01$), H5 ($\beta = 0.113$, $p < 0.01$) and H6 ($\beta = 0.348$, $p < 0.01$) is significant and support the hypothesis.

Table 5
Hypothesis Testing

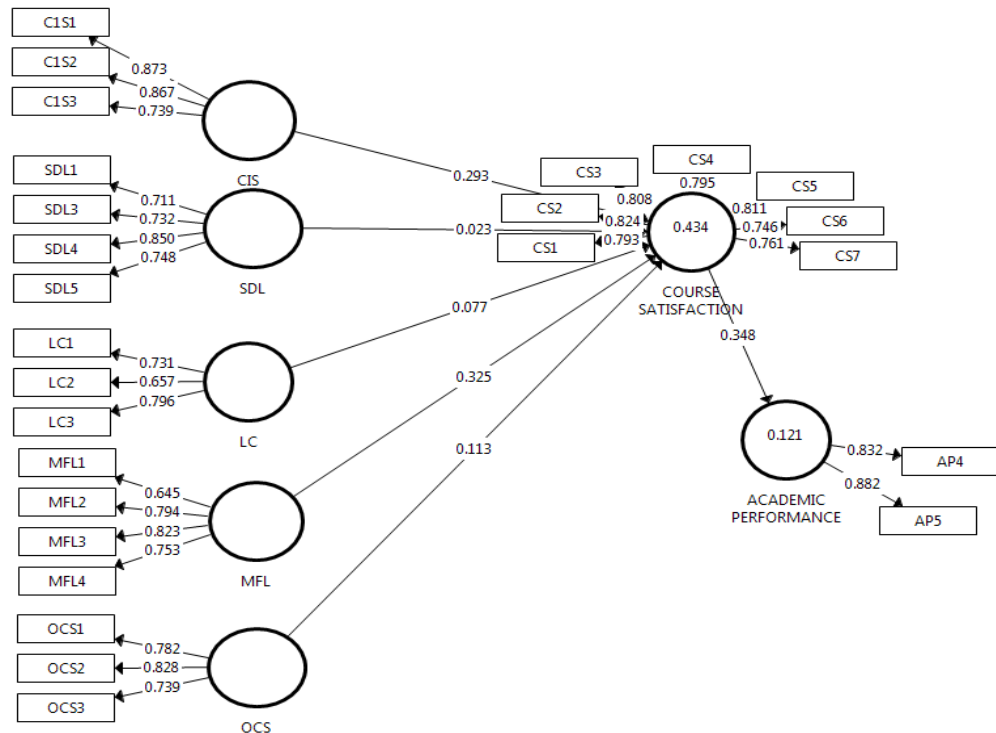| Hypothesis	Std Beta	Std Error	t-value	Supported
H1: CIS ---- CS	0.293	0.053	5.561	Supported
H2: SDL---CS	0.036	0.036	0.375	Not Supported
H3: LC--- CS	0.077	0.054	1.423	Not Supported
H4: MFL---CS	0.325	0.065	5.003	Supported
H5: OCS---CS	0.113	0.059	1.908	Supported
H6: CS -- AP	0.348	0.054	6.506	Supported

Figure 2: Path Coefficients

Mediation Effect (H7)

Bootstrapping procedure with 500 resamples was run to generate the t-values for mediator model estimation. Figure 3 presents the structural model while Table 5 presents the results of the hypothesis testing. As shown in Figure 2 and Table 5, there is significant relationship between CIS, MFL and OCS to Course Satisfaction explaining 43.4% variance. Course Satisfaction was also positively related ($\beta = 0.664$, p< 0.01) to Academic Performance explaining 12.1% variance. To test the mediation hypothesis the Preacher and Hayes (2004; 2008) method of bootstrapping the indirect effect was applied. The bootstrapping analysis showed that the indirect effect of H7a ($\beta = 0.102$, p< 0.01) (95% Boot CI: LL=0.07, UL=0.152), H7c ($\beta = 0.113$, p< 0.01) (95% Boot CI: LL=0.071, UL=0.158), and H7d ($\beta = 0.039$, p< 0.01) (95% Boot CI: LL=0.004, UL=0.076), was significant. Also as indicated by Preacher and Hayes (2008) the indirect effect of 95% Bootstrapping does not straddle a 0 in between indicating there is mediation of course satisfaction on CIS,MFL and OCS to academic performance while LC and SDL is not support the mediator. Thus we can conclude that the mediation effect is statistically significant, indicating that H7a, H7c and H7d was supported.

Table 6
Hypothesis Testing for Mediation

	Relationship	Std Beta	Std Error	t-value	Confident interval BC LL	UL	Decision
H7a	CIS	0.102	0.024	4.288**	0.07	0.152	Supported
	-> Course Satisfaction						
	->Academic Performance						
H7b	LC	0.027	0.019	1.412	-0.005	0.057	Not supported
	-> Course Satisfaction						
	->Academic Performance						
H7c	MFL	0.113	0.027	4.242**	0.071	0.158	Supported
	-> Course Satisfaction						
	->Academic Performance						
H7d	OCS	0.039	0.023	1.742**	0.004	0.076	Supported
	-> Course Satisfaction						
	->Academic Performance						
H7e	SDL	0.008	0.022	0.359	-0.029	0.045	Not Supported
	-> Course Satisfaction						
	->Academic Performance						
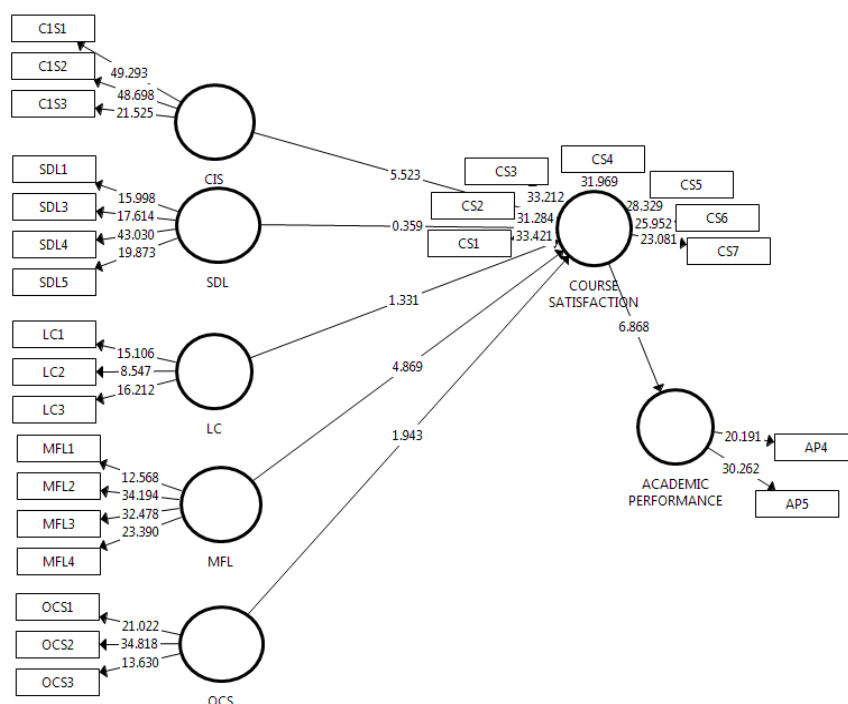
Figure 3: Bootstrapping of Path Coefficients

Discussion

According to the findings, most respondents agreed that they had adequate computer and internet skills. They were also able to have the ability to use the essential features of Microsoft Applications (MSWord, MS Excel, and MS PowerPoint). Students are also comfortable utilizing a range of technical tools for various purposes, including searching the internet for information for online learning and using a variety of technological tools for different purposes. This outcome, consistent with previous studies by (Alqurashi, 2016; Tsai et al., 2020), indicated that (CIS) was crucial for online learning and had been substantially associated with student accomplishment in online education. (MFL) has been the second-highest level of dimension, students were eager to learn, new thoughts, and liked sharing their views with other students. This outcome was consistent with previous studies by (Dikbas Torun, 2020; Kirmizi, 2015; Rafique et al., 2021) that found the motivation to be a vital component in preparation for online learning. The result further indicated that students' self-directed learning had managed their study plan and timely submission of their tasks. Smith et al. (2003) argued that understanding online education and self-management of learning would improve online learning readiness. Students had a high level of self-efficacy when it came to internet communication. This result is similar to the outcomes by (Rafique et al., 2021; Yasin et al., 2020), who stated that (OCS) in a hybrid learning situation might increase students' readiness for online education

The results suggested that the respondents reported less control of their learning process. These results are consistent with previous research (Hung et al., 2010; Naji et al., 2020; Rafique et al., 2021) that found learner control of OLR has a lower score among Library and Information Science students in Pakistan during the Covid-19 pandemic. The reason for this discrepancy between online and physical classroom learning is that there is a greater risk of interruption from students' engagement in activities such as online gaming, internet browsing, texting, or text messaging. They were perplexed whether their online learning progress was good, awful, or middling. Furthermore, because the students were encountering

online learning for the first time, they would confront an unanticipated and implicit sort of online learning process and hence would be unable to manage their learning (Torun, 2020). As a result, frequent feedback, encouragement, and communication initiated by lecturers from time to time were critical in assisting students in realizing that they were on the right track and had done an excellent job pursuing online learning.

According to the findings, students' readiness for online learning had a significant and positive effect on course satisfaction (CS). Students' motivation for learning (MFL) and (CIS) directly affect the course satisfaction towards online learning readiness. This finding is consistent with the prior researches by (Bolliger & Halupa, 2012; Wei & Chou, 2020). It is feasible to complete all of the course's learning activities entirely online. Educators are not required to remind students regarding sharing messages or assignment deadlines. Students must post a message to communicate with their colleagues and instructors every week. In other words, if students are more enthusiastic about learning and like expressing their thoughts with others online, they will engage more actively in the conversation. As a result, their online learning score is significantly higher.

Furthermore, (CIS) also has a direct effect on course satisfaction (CS). This possible causation shows that students' CIS could mediate the effect of students online learning readiness and their course satisfaction. Although practically all learning activities in online learning must be completed utilizing any variety of computer or internet applications in online learning, students who have a high level of confidence in utilizing these tools may find it simpler to perform in the course. Chung et al (2020) remarked that because the foundation of ODL is based on technology, students must comprehend how to optimize the computer and the internet entirely.

Finally, the Course satisfaction as the mediator effect can't be deniable. Hence a few of dimension on (OLR) is not significant but the (OLR) itself as a construct shows the significant level and correlate with course satisfaction (CS) (Dooley et al., 2018). The course satisfaction also significant with the dependent variable that is academic performance and overall variables show with or without mediating effect still significant assume the mediation occur on the relationship between (OLR) and academic performance (AP) supported hypothesis 7 and third objective.

Conclusion
Besides all the difficulties, online learning may offer flexible learning locations and expand students' creativity. For instance, the effectiveness of online learning can be considered subjective and comprehensive (Bahcekapili and Karaman, 2020). This study determines factors affecting academic performance that focuses on the undergraduate student. It proposes a framework that relates academic performance with independent variables: online learning readiness and course satisfaction as a mediator with academic performance as the dependent variable, towards a current situation where the education is changing from face to face to virtual learning (Espino-Díaz et al., 2020). However, the unpredictable situation still can come in the future. By doing this research, it will be an advantage as a guideline if the situation repeatedly happens.

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