

STUDENTS' SATISFACTION TOWARDS ONLINE LEARNING IN A PUBLIC UNIVERSITY IN MALAYSIA DURING COVID-19 PANDEMIC

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Abstract: Most universities have implemented an online learning system to ensure that students, particularly those who are pursuing advanced degrees, can continue their education during the COVID-19 pandemic. Converting from traditional face-to-face classes to online mode is not a simple process. Students must adapt to the rapid changes and workload, which are mandatory for them to participate in. The purpose of this study is to investigate the factors that contribute to students' satisfaction with online learning, specifically on perceived usefulness, perceived ease of use, social interaction, social presence and motivation. A quantitative study was conducted on 71 postgraduate coursework students at Universiti Malaysia Terengganu to determine the relationship between online learning satisfaction and the five variables. The findings indicated that only perceived ease of use and motivation could enhance online learning satisfaction. The study discovered that the majority of students were satisfied with online learning due to the convenience of attending such classes and their motivation to participate in those classes. Further research is recommended to focus on improving online education through reduction of stress and depression, particularly during pandemics.

Keywords: COVID-19 pandemic, online learning, Technological Acceptance Model (TAM), Social Constructivism Theory.

Introduction

The Coronavirus Disease 2019 (COVID-19) outbreak began in Wuhan, China, in Dec 2019 and by March 2020, it had spread throughout the world with more than a hundred thousand infections and thousands of deaths reported (Unger & Meiran, 2020; World Health Organisation, 2020). The Severe Acute Respiratory Syndrome Coronavirus-2 (SARS CoV-2), which causes the fatal disease, is spread through liquid aerosols and droplets from infected patients, hence precaution had to be taken in limiting face-to-face interaction and close contact. This has affected all aspects of human life when countries began enforcing social restrictions and lockdowns in a bid to prevent the spread of COVID-19. Learning activities have been identified as a major contributor of virus transmission, and therefore, many schools and universities were closed (World Health Organisation, 2020). The Institute of Democracy and Economic Affairs reported that 1.5 million students from 165

countries were unable to attend school during the pandemic (IDEAS, 2020).

The Malaysia government first implemented the Movement Control Order (MCO) on March 18, 2020, when cases began rising exponentially, causing the country's healthcare system to be overloaded. The pandemic resulted in the closure of all government and private establishments that did not provide essential services, including schools and higher-learning institutions. Even though this situation occurred, daily activities like learning – especially higher education – cannot afford to be disrupted without affecting the country's development and future of its people (Malaysia Law Act 342, 2016; Unger & Meiran, 2020; Surani & Hamidah, 2020).

Despite the order to close all learning institutions, educational activities have to continue online. During the peak of the pandemic in late 2020 and 2021, many higher-learning institutions were considering to phase out face-to-face classes in favour of online

education (Adnan & Anwar, 2020; Surani & Hamidah, 2020).

The academic sector has demonstrated exceptional resilience, adaptability and ability to overcome obstacles and challenges during MCO. All teaching and learning activities, including lessons, projects, group work, presentations and assignments, were quickly adapted for online delivery. It is undeniable that online learning is the optimal solution for ensuring continuity of learning throughout MCO, and it has become the New Normal. However, this learning method is deficient in terms of human interaction, where there is a lack of rapport among students and lecturers, leading to a lack of motivation and concentration to study. With limited interaction, students are forced to cope with their lessons alone as they are unable to organise study groups (Adnan & Anwar, 2020). Online education is also challenging in terms of assisting students in developing their ability to learn autonomously, actively and persistently (Surani & Hamidah, 2020).

Online learning is facilitated by the use of information and communication technology. It enables students to connect with learning resources through the Internet, besides allowing them to communicate with one another virtually (Surani & Hamidah, 2020). This method of learning may be considered new and is still in the process of improvement. Educators must make greater effort to maintain student engagement to effectively deliver their lessons (Khan *et al.*, 2020).

The transition from face-to face classes to virtual learning will take time. Rapid change is not easy and may entail numerous difficulties. With no way of knowing when the pandemic will end, learning institutions have decided to move on by implementing and utilising all available resources to create online learning materials for students. Academic experts have begun considering the possibility of conducting online classes in the long term to mitigate the risk of COVID-19 transmission among students. In addition, online learning methods are accessible as long as there is good Internet

connection. However, a previous study argued that the students' attitude towards their learning environment may change as they face new and unprecedented challenges (Surani & Hamidah, 2019; Adnan & Anwar, 2020).

Online education has gained popularity in recent years as it is cost-effective and convenient. However, the system may be quite demanding, where numerous instances of students experiencing mental breakdown, stress and being unable to cope with their workload had been reported (Bali & Liu, 2018; Surani & Hamidah, 2020).

According to Al-Kumaim *et al.* (2021), 69.5 per cent of students felt overwhelmed by the schedule and workload of their online courses. A total of 71.4 per cent of the students reportedly said they had too many tasks to complete, 19.9 per cent reported having too much information to understand, and 8.7 per cent had other reasons. It is also difficult to concentrate when students have to remain seated in front of the computer for extended periods as this may cause fatigue and eye strain (Ramane *et al.*, 2021).

According to the Department of Statistics in 2021, 77.6 per cent of households in Malaysia owned a computer, 91.7 per cent had access to the Internet, and 98.6 per cent owned a mobile communication device. This indicates that almost all the country's population is capable of participating in online education. However, during the pandemic, one issue that arises was poor Internet connection and a lack of broadband ports, especially in rural areas. Poor Internet connection is disruptive and prevents students from effectively participating in online learning. Vulnerable students, such as those who are less fortunate and persons with disabilities, may also be left behind as educators could not pay attention to their special needs (Selvanathan *et al.*, 2020).

According to previous research, online classes are perceived by students as lacking interaction, social presence and motivation to study when compared with face-to-face classes.

A critical component of learning is the interaction between students and lecturers, as this type of communication makes the learning experience more meaningful. Additionally, a study has found that many students are dissatisfied with online learning and preferred traditional classes. Furthermore, online learning has been observed to have a direct impact on students' academic performance, including a lack of efficiency in technology, difficulty for students to understand the concepts taught, and online learning causes social isolation, resulting in students not developing the necessary communication skills (Bali & Liu, 2018; Lee & Martin, 2017; Rafiq *et al.*, 2020).

Apart from that, perceived usefulness and ease of use are also critical factors in online learning success. They will foster a positive attitude among students and will determine their reception towards technology. During the COVID-19 pandemic, new standards are implemented to standardise the use of the Internet and technology platforms for learning. Students tend to choose technology that is simple to use to accomplish their goals. Therefore, their perception on the usefulness and ease of using technology may increase engagement between them and the lecturers, which in turn, increases their satisfaction with online learning. These factors have been identified as significant influences in previous studies (Joo *et al.*, 2011; Rafiq *et al.*, 2020; Kim *et al.*, 2021)

Literature Review

Underpinning Theories

This study is based on two underpinning theories: The Technology Acceptance Model (TAM) and social constructivism. Both are applied to the study of student satisfaction with online learning.

Technology Acceptance Model (TAM)

The TAM theory comprises two beliefs: perceived ease of use and perceived usefulness (Weng *et al.*, 2018; Maziriri *et al.*, 2020). These

two elements are the primary determinants of people's attitude towards technology, which can also influence their behavioural intentions. According to TAM, perceived ease of use and perceived usefulness are both tools for attitude development because they refer to "the degree to which a person has a favourable or unfavourable evaluation or appraisal of the in-question behaviour". Attitude has an effect on an individual's behavioural intention and determines the degree to which an individual will engage in those behaviours (Maziriri *et al.*, 2020).

TAM has been widely used to assess student acceptance of educational technologies. Previous research by Saade *et al.* (2007), Al-Adwan *et al.* (2013) and Sprenger and Schwaninger (2021) had established that TAM was an appropriate model for online learning, and that its application might demonstrate student acceptance of the method (Kim *et al.*, 2021).

Theory of Social Constructivism

According to Vygotsky's Theory, social interaction plays a critical role in the development of students' cognitive thought processes. Additionally, students can gain additional knowledge and ideas through social interaction with those who are more knowledgeable (Jeremic *et al.*, 2012). Constructivism is a theory of learning that defines knowledge as temporarily, developmentally, socially, culturally and objectively mediated (Al-Rahmi, 2017). The social constructivism theory incorporates engagement, collaboration and interaction in learning to enable students to improve and develop their skills through education and experience, as opposed to their own learning process (Al-Rahmi, 2020).

It is an observation of individual knowledge acquisition methods. Individuals acquire knowledge and understanding through their experiences and modes of thought. The constructivism perspective views classroom learning through a variety of teaching activities.

Active methods, such as experiments, real-world observation, problem-solving, and knowledge-building, may be used to alter students' thinking and motivate them to learn. Constructivism has been a leading educational practice for decades and is widely accepted as an alternative school improvement method (Al-Rahmi *et al.*, 2017).

According to Huang and Liaw (2018), the constructivist instructional theory focuses on real-world activities, which include student motivation. The critical factor is the context which influences learning performance, increases interest in learning, and enhances its efficiency. When students interact and apply their knowledge in daily activities, the effectiveness of learning outcomes will increase. Apart from student motivation, social constructivism theory also emphasises the importance of interaction between students and lecturers (Huang & Liaw, 2018).

Student Satisfaction

Turley and Graham (2019) defined student satisfaction as having a positive experience and being able to document their success after participating in an online learning course. Student satisfaction is difficult to quantify, but given the effort invested in terms of time and money, they probably expect to receive high-quality and value-added lessons.

Satisfaction is just as critical as interaction in online learning. According to previous research, when comparing between online and classroom learning, learners will prefer face-to-face interaction during lessons. Therefore, the interaction between other students and lecturers will contribute to satisfaction in this regard. Satisfaction is classified as follows: Being happy with the instructor's support with one's own commitment to learning and with online learning policies (Bali & Liu, 2018).

Student satisfaction refers to the positive feelings they have about the actual outcomes that fulfill their expectations. Alkhateeb and Abdalla (2021) asserted that informational needs may be met through participation in an online class. If

students are satisfied with their online education experience, they will continue with the course. If they are satisfied with their online class, there will be a direct positive effect on their performance, commitment, class participation, and rate of absenteeism (Alkhateeb & Abdalla, 2021).

Perceived Ease of Use

The capacity to comprehend and adapt to novel technological advancements is referred to as perceived ease of use (Jahangir & Begum, 2008). It indicates how easily an innovation is understood, learned and implemented. Prior research observed that perceived ease of use had significant effect on usage intention, both directly and indirectly (Amoako-Gyampah, 2007; Malureanu *et al.*, 2021; Alkhawaja *et al.* 2022).

According to Baber (2021) and Jahangir and Begum (2008), perceived ease of use has a positive effect on the acceptance and adaptation of online learning. Both studies showed that perceived ease of use have greater effect than perceived usefulness, but both factors also have a positive effect on the behavioural intention related to the acceptance of technological systems. The ease in which a system may be adopted is evidence of its ease of use. If the system is user-friendly, acceptance of online learning will increase, as attitude, learning experience and satisfaction will all influence preferences for the method of learning. Additionally, it will increase the likelihood of a repeated use of online education. There are numerous ways to simplify the management of online learning systems, such as the use of multiple methods to access a specific function of a system, which is possible to achieve with a well-designed interface (Jovic *et al.*, 2017).

Perceived Usefulness

Perceived usefulness refers to the degree to which an individual believes that utilising certain tools will improve their job performance. Perceived usefulness may also be defined as an

individual's perception that by utilising the latest system or technology, their performance will improve (Jahagir & Begum, 2008). Meanwhile, Jovic *et al.* (2017) defined perceived usefulness as a critical factor in increasing students' self-regulation in an e-learning environment, which in turn, increases their intention to use e-learning. The decisive factor affecting educational effectiveness is usefulness. The usability of human and computer interfaces is denoted by usefulness, which is both an attribute and quality (Jovic *et al.*, 2017).

Online learning has a noticeable practical validity and has been used by many universities as part of an integrated effort to efficiently maximise new technologies in education. Additionally, previous research had demonstrated that perceived usefulness had significant effect on students' attitudes towards online learning (Rafiq *et al.*, 2020; Jahangir & Begum, 2008).

Social Interaction

Social interaction is defined as an asymmetrical exchange between at least two individuals who share a common goal. In online communication, social interaction demonstrates visibility, awareness and accountability by allowing students and their activities to be visible to one another (Kozuh *et al.*, 2015). The most effective learning environment is one that involves interaction, regardless of the delivery format, as interaction is also a form of motivation. It is critical for instructors and students to maintain focus during interactions (Tichavsky *et al.*, 2015; Gray & Diloreto, 2016).

In face-to-face classes, the lecturer's physical distance from the student should not jeopardise the consistency and purpose of communication. Online classes, on the other hand, may present difficulties for effective communication because the interaction is different. Online classes employ a unique approach and the interaction between student and lecturer may lead to miscommunication. As classroom participants are physically separated,

communication becomes critical, consequently, physical separation has an effect on students' perception of online learning (Tichavsky *et al.*, 2015). Therefore, the communication in an online learning environment must be clear and precise (Daniels *et al.*, 2019). Additionally, Tichavsky *et al.* (2015) discovered a positive relationship between instructors providing a consistent pattern of communication and students perceiving them as having a teaching presence. This has an effect on the motivation of students.

Social Presence

Due to varying perceptions of online learning as a medium, social presence is defined as the prominence of two people when they use communication tools. It is also referred to as the degree to which a person is perceived as genuine or existent in communications, which can affect the social climate in the classroom. Additionally, social presence can be referred to as the social and emotional reactions that occur when students communicate online (Bali & Liu, 2018; Tayeh, 2021). It is a critical factor in the success of online learning and has been recognised for many years. In an online learning environment, the most frequently used tools in establishing and maintaining a social presence are forums and messaging applications (Grandbastien *et al.*, 2012). Staying connected with course mates and presence in the online classroom can motivate students to participate in lessons, which is especially beneficial in larger classes. Although students may interact with one another, form friendships, and assist each other in gaining a better understanding of their lessons, however, time constraints can limit their ability to participate in online classes (Lee & Martin, 2017).

Social presence is necessary for cultivating and establishing effective communication, as well as integrating with cognitive presence. It is necessary to increase access to both traditional and technology-based communication in classrooms. The instructor should have the capacity to develop and maintain educational

projects while students are enrolled. If the lecturer and students do not interact frequently, this indicates a lack of social presence. These factors will contribute to student dissatisfaction in online and blended courses (Tayeh, 2021; Bali & Liu, 2018). Effective social presence strategies, on the other hand, can significantly increase student motivation, academic success, and the capacity to conduct online classes effectively. Nevertheless, increasing social presence in online learning classes is not easy (Roberts, 2018).

Motivation

Researchers have discovered that a motivational perspective in behaviour may help to better understand intention and predict technology acceptance (Kira & Saade, 2006). Student motivation is defined as an attempt to boost and maintain one's self-esteem. It is critical when it comes to enrolling in an online learning course as the students' success in online learning is determined by their motivation. Student engagement in online classes, their experience with technology, and their attitude towards it are all determined by their motivation (Baber, 2020). Motivation is vital for learning success because it influences the students' decision to continue participating or drop out of the online class. It also influences their level of engagement, the quality of the assessment, and their achievement in the online classroom (Lee & Martin, 2017; Kira & Saade, 2006).

Due to the pandemic, physical distancing must be incorporated into daily activities and students are forced to transition to online classes over an extended period of time. The changes are drastic and unexpected, and students must continue paying their fees normally even though they do not attend any activities in campus. If they are unable to fully utilise the technological tools and devices for learning, this will affect their motivation (Kira & Saade, 2006). Furthermore, if students are unwilling to adapt to online learning, this can result in a negative perception of online learning activities and cause their academic performance to suffer.

Hence, when it comes to online learning, student motivation becomes crucial (Baber, 2021).

Hypotheses Development and Research Framework

Perceived ease of use is defined as the expectation of using a technology which requires minimal effort to improve an individual's learning performance (Baber, 2021; Alalwan, 2019). Meanwhile, perceived usefulness is defined as the expectation of improved performance as a result of utilising technology. Studies have shown that using technology may make learning easier and improve the students' performance. Additionally, it has been demonstrated that student satisfaction and attitude towards online learning is influenced by perceived usefulness of technology (Alalwan, 2019; Rafiq et al., 2020).

Social interaction and presence are inextricably linked, and both bring a positive effect on student satisfaction in web-based education (Kozuh et al., 2015; Bali & Liu, 2018). When students are satisfied with their learning process in a particular way, they will be motivated to continue their education. Additionally, a previous study discovered a positive correlation between student satisfaction with online learning and the higher likelihood that students will continue to participate in an online course (Huang & Liaw, 2018). The following hypotheses are proposed:

Hypothesis 1 (H_1): Perceived ease of use has a positive influence on student satisfaction towards online learning.

Hypothesis 2 (H_2): Perceived usefulness has a positive influence on student satisfaction towards online learning.

Hypothesis 3 (H_3): Social interaction has a positive influence on student satisfaction towards online learning.

Hypothesis 4 (H_4): Social presence has a positive influence on student satisfaction towards online learning.

Hypothesis 5 (H_5): Student motivation has a positive influence on student satisfaction towards online learning.

Figure 1 depicts the study framework, which is based on two dominant theories: (i) TAM, which encompasses perceived ease of use and

perceived usefulness; and (ii) constructivism, which emphasises social interaction, social presence and motivation, all of which influence student satisfaction with online learning.

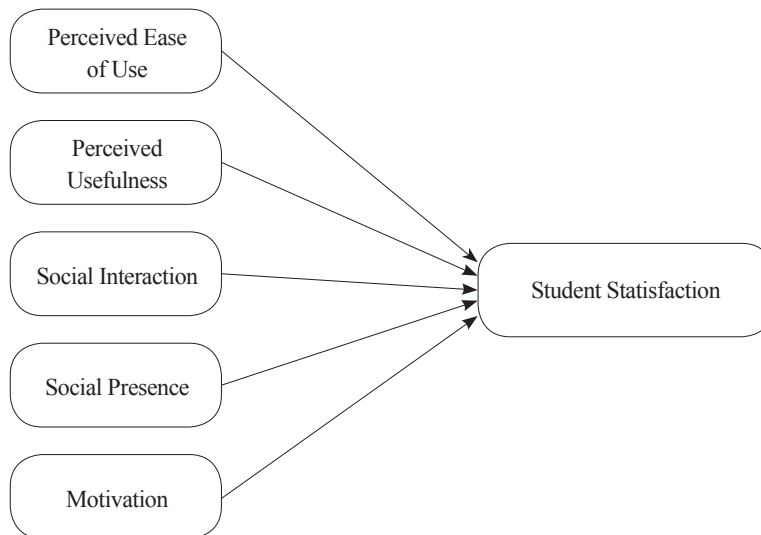


Figure 1: The framework of the study

Research Methodology

This quantitative study used non-probability sampling to select its respondents. The respondents comprised 116 postgraduate students who took an online learning course at Universiti Malaysia Terengganu (UMT) in Terengganu, Malaysia, during the 2020/2021 semester, when the campus was closed due to the pandemic. Raosoft (2004) recommended a sample size of 90 respondents to obtain a confidence level of 95 per cent. A questionnaire in Google Forms was distributed via email to all respondents, and 82 replies were received, indicating a response rate of 70.69 per cent. However, only 71 (86.59 per cent) questionnaires contained answers that were usable in this study.

This study's questionnaire was adapted and adopted from earlier research (Alkhateeb & Abdalla, 2021; Tayeh, 2021; Bali & Liu, 2018; Lee & Martin, 2017). The respondents were instructed to use a Likert scale to answer the

questions, which were in the form of statements expressing either a favourable or unfavourable view toward the topic of interest (Cooper & Schindler, 2006). Therefore, a five-point Likert scale was designed for this investigation. Thus, for the statements on perceived ease of use, perceived usefulness, social interaction, social presence, and motivation, the responses ranged from 1 = 'strongly disagree' to 5 = 'strongly agree' and for the statements on student satisfaction, the responses ranged from 1 = 'extremely low' to 5 = 'extremely high'.

The respondents were pursuing the following courses at UMT: Master of Business Administration (MBA), Master of Management (Integrated Coastal Zone), Master of Counselling, Master of Science (Aquaculture), Master of Mathematics, Master of Science (Environmental Forensics), Master of Computer Science, and Master of Statistics (Marine Science).

Data Analysis

Statistical analysis was performed using IBM SPSS Version 26. Cronbach's alpha coefficient was used to determine the internal consistency among the variables to see how closely related they were as a group. Correlation analysis was performed to determine the level of association between student satisfaction and each of the five online learning variables. Multiple linear regression analysis was used to determine if there was significant association between all online learning variables with student satisfaction.

Results

Demographic Profile of Respondents

Table 1 shows the demographic data of the 71 accepted respondents in this study. There were slightly more males than females, and majority of them were young adults aged between 20 and 25. Most respondents have also completed two semesters of online study.

Table 1: Demographic Profile

Demographic	N	Percentage
Gender		
Female	33	46.5
Male	38	53.5
Age		
20-25 years old	28	39.4
26-30 years old	18	25.4
31-35 years old	4	5.6
36-40 years old	9	12.7
41-45 years old	8	11.3
46-50 years old	4	5.6
Courses		
Master of Business Administration (MBA)	45	63.4
Master of Management (Integrated Coastal Zone)	8	11.3
Master of Counselling	9	12.7
Master of Science (Aquaculture)	3	4.2
Master of Mathematics	1	1.4
Master of Science (Environmental Forensics)	1	1.4
Master of Computer Science	3	4.2
Master of Statistics Marine Science	1	1.4
Duration of online learning		
1 semester	12	16.9
2 semesters	29	40.8
3 semesters	23	32.4
4 semesters	7	9.9

Reliability Analysis

According to Sekaran and Bougie (2013), the closer the reliability coefficient was to 1.0, the more reliable the variables were to each other. If the reliability was less than 0.60, it was considered poor; if it was between 0.7 and 0.8, it was considered acceptable; and, if it was greater than 0.8, it was considered good. The Cronbach's alpha coefficient for six independent

variables in this study was 0.90, which was acceptable and indicated the measure's ability and consistency in terms of reliability. As shown in Table 2, all scales of perceived ease of use, perceived usefulness, social interaction, social presence and student motivation had a high degree of internal consistency, as reflected by their Cronbach's alpha coefficients of 0.848, 0.9, 0.847, 0.793, and 0.887, respectively.

Table 2: Reliability statistics

	Cronbach's Alpha	Cronbach's Alpha (standardised items)	No. of Items
Student satisfaction	0.873	0.871	6
Perceived ease of use	0.848	0.853	6
Perceived usefulness	0.900	0.900	6
Social interaction	0.847	0.850	6
Social presence	0.793	0.799	6
Student motivation	0.887	0.888	6

Correlation Analysis

As demonstrated in Table 3, the correlation between student satisfaction and perceived ease of use was 0.71, indicating a moderately positive relationship. The more students perceived online learning to be useful, the more satisfied they were with their learning. Meanwhile, the correlation between student satisfaction

and perceived usefulness was 0.67, which was considered a moderate correlation. Similarly, a correlation of 0.59 existed between student satisfaction and social presence. However, there was a strong correlation between student satisfaction and motivation (0.75) and a weak correlation between student satisfaction and social interaction (0.43).

Table 3: Correlation between student satisfaction and other variables in online learning

Construct	SS	PEOU	PU	SI	SP	SM
Student satisfaction	1	0.711	0.672	0.435	0.592	0.756
Perceived ease of use	0.711	1	0.833	0.428	0.634	0.613
Perceived usefulness	0.672	0.833	1	0.400	0.615	0.613
Social interaction	0.435	0.428	0.400	1	0.717	0.538
Social presence	0.592	0.634	0.615	0.717	1	0.671
Student motivation	0.756	0.613	0.817	0.538	0.671	1

Multiple Linear Regression Analysis

As shown in Table 4, the value of R was 0.82 or 82 per cent, indicating a high level of prediction. Meanwhile, for the coefficient of determination, perceived ease of use, perceived usefulness, social interaction, social presence and student

motivation all had a value of 0.672 ($R^2 = 0.672$), accounting for 67.2 per cent of variability in student satisfaction. As a result, 32.8 per cent (100 per cent – 67.2 per cent) of the variation in this model could be attributed to other factors. The coefficient values were significant predictors of independent variables.

Based on the coefficient table in Table 4, only two independent variables – perceived ease of use (0.016; $p \leq .05$) and student motivation (0.000; $p \leq .05$) – were significant. As a result, student satisfaction with online learning was positively influenced by the two variables. Meanwhile, perceived usefulness (0.486), social

interaction (0.901) and social presence (0.961) had no significant effect on student satisfaction.

Apart from that, the table indicated that the study was not multicollinear, as the variation inflation factor (VIF) for each of the five independent variables was less than 10, and the tolerance was greater than 0.1.

Table 4: Model summary of dependent variables

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.820 ^a	.672	.647	.50125
a. Predictors: (Constant), Motivation, Interaction, P_Usefulness, S_Presence, P_easeofuse				
b. Dependent Variable: Satisfaction				

Table 5: Coefficient values

Coefficients ^a													
Model		Unstandardised Coefficients		Standardised Coefficients		Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t		Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-.412	.396		-1.041	.302	-1.204	.379					
	P_easeofuse	.378	.153	.333	2.473	.016	.073	.684	.711	.293	.176	.278	3.600
	P_Usefulness	.106	.152	.093	.700	.486	-.197	.409	.672	.087	.050	.284	3.523
	Interaction	-.016	.129	-.013	-.124	.901	-.273	.241	.435	-.015	-.009	.472	2.118
	S_Presence	-.007	.149	-.006	-.049	.961	-.305	.290	.592	-.006	-.004	.316	3.167
	Motivation	.522	.107	.506	4.875	.000	.308	.736	.756	.517	.346	.468	2.135
a. Dependent Variable: Satisfaction													

Discussion

The purpose of this study is to ascertain students' satisfaction with online education in terms of perceived ease of use, perceived usefulness, social interaction, social presence and student motivation. Perceived ease of use refers to the students' expectation of a positive return on investment and that studying would become easier with the use of technology. Students would also be anticipating that the use of technology could also increase their performance. According to The results of the current study was in line with Alalwan (2019), where that perceived ease of use

had a significant effect on student satisfaction with online learning. However, the perceived usefulness observed had no significant effect.

Many researchers had stated that students preferred traditional learning over online classes because they were accustomed to attending face-to-face classes. However, with the onset of COVID-19, students had no choice but to be compelled to attend online classes (Surani & Hamidah, 2020; Tayeh, 2021). The main drawback in online learning was its deficiency in terms of social interaction and presence (Bali & Liu, 2018). Moreover, prior research

had established a positive correlation between social interaction and social presence with student satisfaction in online learning. Students, particularly those forced to adapt to online classes due to the pandemic, required motivation to cope with their studies. And motivation was found to have a significant effect on student satisfaction in this study. In fact, motivation was the main factor for students to continue participating in online classes (Lee & Martin, 2017). If students saw the positive effects of an online course and how it could help them improve their academic performance, hence they would continue to participate in the course (Huang & Liaw, 2018).

However, this study demonstrates that only two independent variables had statistically significant effect on student satisfaction with online education. The findings indicated that student satisfaction with online education was significantly influenced by perceived ease of use and student motivation. Perceived usefulness, social interaction, and social presence all produce inconsistent results and did not demonstrate any beneficial effects.

Perceived usefulness, social interaction and social presence were not significantly associated with student satisfaction with online learning due to a variety of factors influenced by the online learning environment itself, such as technical difficulties, a sense of isolation and a lack of social support. These factors might negatively affect the students' experience as it caused them anxiety, anger and boredom.

Theoretical and Practical Contributions

Two major contributions are made in this study. The current study examines the context of online education. It assists government, management, online system creators, and educators in determining what factors affect student satisfaction with online learning. As perceived ease of use was one of the factors that contributed to student satisfaction with online education, thus, universities should strive to create a system that is simple to use and easy

to understand. In the case of motivation, it was vital that the university administration or management to be vigilant in planning online class schedules, as well as continually offering system improvements so students and lecturers would not be stressed out. Additionally, instructors and educators should give allowance for students to catch up with their lessons as they may be struggling to balance between their studies and household responsibilities while at home during the pandemic.

Conclusion

This study surveyed postgraduate students at Universiti Malaysia Terengganu (UMT) only. As a result, the results could not be generalised to all students in Malaysia. More research is needed to examine the effectiveness of online education, as it is used by students in all levels of education. That way, we could ensure that every student and instructor was effectively utilising the online platform. Additionally, it is crucial to find a way to mitigate problems faced by students in adapting to the online learning process, such as stress, isolation and inability to cope with the lessons. Further research could focus on the factors that contributed to student depression, stress and anxiety in online learning, as well as developing strategies to enhance the students' learning experience.

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