Improving Student Engagement and Behavioural Outcomes via Persistence among Distance Learners

Meningkatkan Penglibatan Pelajar dan Hasil Tingkah Laku Melalui Kegigihan dalam Kalangan Pelajar Jarak Jauh

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ABSTRACT

Student engagement assists distance learners gain specific skills and to realise the worth of their rewarding educational experience. However, if persistence is not adequately present, the distance learners might quit an online course. Thus, this study aimed to investigate the relationship between online student engagement towards student satisfaction and learning outcomes and to examine the moderating effect of persistence between online student engagement towards student satisfaction and learning outcomes. The research model was tested upon engagement theory as an underlying theory to support the research framework. Purposive sampling technique was used to collect data via online survey questionnaires for three weeks. The research hypotheses are examined through correlation and path analysis of 321 distance learners from one of the public universities in Malaysia using Partial Least Square (PLS) 3.0. Results of analysis demonstrated that persistence was found to moderate the relationship between online student engagement towards student satisfaction and learning outcomes. This finding implies that distance learners who commit themselves to a goal will highly likely persist, and the more courses a student finishes, the closer he or she will be to graduating. Based on the results, this research suggests the management of Malaysian distance education institutions to create rapport between online programme staff and distance learners at an early stage. Additionally, online programmes must promote and establish support networks for distance learners to resolve personal or professional difficulties in improving retention and preventing them from dropping out of online programmes.

Keywords: Online student engagement; persistence; student satisfaction; behavioural outcomes; learning outcomes

ABSTRAK

Penglibatan pelajar membantu pelajar jarak jauh memperolehi kemahiran khusus dan menyedari nilai pengalaman pendidikan mereka yang bermanfaat. Walau bagaimanapun, jika kegigihan tidak hadir dengan cukup, pelajar jarak jauh mungkin berhenti dari kursus dalam talian. Oleh itu, kajian ini bertujuan untuk menyelidiki hubungan antara penglibatan pelajar dalam talian terhadap kepuasan pelajar dan hasil pembelajaran, dan untuk mengkaji kesan penyederhanaan antara penglibatan pelajar dalam talian terhadap kepuasan pelajar dan hasil pembelajaran. Model kajian diuji berdasarkan teori penglibatan sebagai teori dasar untuk menyokong rangka kerja penyelidikan. Teknik pensampelan purposif digunakan untuk mengumpul data melalui soal selidik secara atas talian selama tiga minggu. Hipotesis kajian dikaji melalui korelasi dan analisis jalur 321 pelajar jarak jauh dari salah sebuah universiti awam di Malaysia menggunakan Partial Least Square (PLS) 3.0. Hasil analisis menunjukkan kegigihan didapati dapat memoderasi hubungan antara penglibatan pelajar dalam talian terhadap kepuasan pelajar dan hasil pembelajaran. Penemuan ini menunjukkan bahawa pelajar jarak jauh yang mengikat diri pada suatu tujuan kemungkinan besar akan berterusan, dan semakin banyak kursus yang diselesaikan oleh pelajar, semakin hampir dia akan lulus. Berdasarkan hasilnya, penyelidikan ini menyarankan pengurusan institusi pendidikan jarak jauh Malaysia untuk menjalinkan hubungan antara staf program dalam talian dengan pelajar jarak jauh diperingkat awal. Selain itu, program dalam talian mesti mempromosi dan mewujudkan rangkaian sokongan untuk pelajar jarak jauh untuk menyelesaikan masalah peribadi atau profesional dalam meningkatkan pengekalan serta untuk mengelakkan daripada berhenti dari program dalam talian.

Kata kunci: Penglibatan pelajar dalam talian; kegigihan; kepuasan pelajar; hasil tingkah laku; hasil pembelajaran.

INTRODUCTION

Higher education institutions provide various opportunities for potential students to enrol in online courses and finish degree programmes online. The increase in enrolments emphasises the criticality in determining the factors that play a key role in student satisfaction and learning (Allen & Seaman 2017). Therefore, the assessment of online learning must go beyond student satisfaction, persistence, and learning. Hence, student engagement is evaluated as online learning could further be assessed.

Student engagement concerns the time and physical energy students spend on academic activities (Jacobi 1987; Kuh 2003). Engagement is the effort students' put in studying a subject, practising, obtaining feedback, analysing, and solving problems (Kuh 2003). Chickering and Erhmann (1996) have published guidelines on ways online education can be carried out that align with these principles. Weiss, Knowlton, and Speck (2000) have elaborated on the application of technology to enable the objectives of the principles. Palloff and Pratt (2001) have asserted that a sound and effective online course must follow these principles. Besides, Thurmond, Wambach, and Connors (2002) have reported that the principles of good practice in education must be applied for online teaching.

Student satisfaction shows how students regard their learning experience. It is among the five elements including learning effectiveness, faculty satisfaction, scale, and access for the assessment of online learning quality (Moore 2005). These elements can be employed as a framework to assess and build online programmes and courses in different educational institutions. The significance of student satisfaction with online learning is thoroughly documented in past studies and is highly associated with learners' dropout rates, determination, motivation, and commitment to finish a degree online, and success rates (Ali & Ahmad 2011; DeBourgh 1999; Yukselturk & Yildirim 2008).

Likewise, perceived learning is a learning indicator and a fundamental element for course assessment (Wright, Sunal, & Wilson, 2006). It is described as an individual's judgement that his or her knowledge and comprehension are constructed (Rovai 2002). Furthermore, it concerns the student's opinion of the learning that took place. Students who think they have learned their course materials well tend to actively participate in online classes (Fredericksen, Pickett, Shea, Pelz & Swan 1999). Perceived learning is also very predictive of learners' grades (RockinsonSzapkiw, Wendt, Whighting & Nisbet 2016). Comprehending what influences perceived learning aids instructors to enhance the quality of online courses in aspects like course design, delivery, and evaluation in providing students better learning experience (Alavi, Marakas & Youngjin 2002).

A key persistent factor is students' satisfaction with online courses (Lim & Kim 2003). Their satisfaction with an online course and instructor has a positive correlation with their perceived learning in online courses (Ferguson & DeFelice 2010). Eom et al. (2006) have stated that user satisfaction is a significant predictor of learning outcomes. These findings propose a two-way causal effect, i.e. students become more content when they perceive they are learning and have a higher tendency to learn when they are satisfied with their learning outcomes; both contribute towards students' persistence in online programmes.

Distance is not a recent phenomenon for Malaysians. Many individuals, especially those who are still working and aspire to be successful in their career development, have enrolled for external degrees. Besides, the government always play an active role in promoting and supporting e-learning initiatives. Studies on distance education in Malaysia have focused mainly on students' online reading strategy (Jusoh & Abdullah 2015), adult students' challenges in learning English (Sai & Belaja 2013), investigating social presence in online forums (Zaini & Ayub 2013), impact of online writing platform on students' performance in narrative writing (Annamalai, Eng & Abdullah 2013), and personality styles among adult learners (Mat Zin, 2012). The relationships between student engagement, student satisfaction, learning outcomes, and persistence have been examined for conventional higher education students, but not for distance learners. Thus, it is beneficial to perform an investigation to determine if student engagement has a significant association with student satisfaction and learning outcomes, besides examining whether persistence moderates the relationship between student engagement and student satisfaction and learning outcomes among distance learners.

Results from this research will be of significance to the management of Malaysian distance education institutions in developing contexts to enhance well-designed learning experience for online learners to improve persistence and retention. This will also help institutions to strategise the resources used for professional development, technical support

for faculty, and paid course updates or redesign to increase completion and graduation rates. Assessing student satisfaction and perceived learning allows educational institutions to identify areas for development and improvement in online learning.

LITERATURE REVIEW

ONLINE STUDENT ENGAGEMENT

Student engagement is vital in preventing isolation and dropout among online students. It could be an important factor in retaining online learners and increasing graduation rates (Banna, Lin, Stewart, & Fialkowski, 2015). Student engagement is the student's psychological investment and effort directed toward learning, understanding, or mastering the knowledge, skills, or crafts that academic work is intended to promote (Newmann, Wehlage, & Lamborn, 1992).

In general, students engage with instructional content and their peers and instructors. Jones (2008) listed three domains for student engagement, namely, cognitive, emotional, and behavioural. Firstly, the cognitive domain involves a student's beliefs and values of him or herself and learning itself. On the other hand, the emotional domain comprises factors like motivation and feeling, while the behavioural domain includes habits (e.g., procrastination) and skills (e.g., reading, writing, and study skills). Dixson (2010, 2015) has created the Online Student Engagement (OSE) scale that has closely associated factors which encompass skills, emotions, participation, and performance.

Chickering and Gamson (1987) have proposed seven best practices concerning engagement, which can be used in an online teaching setting. The practices are student/faculty contact, cooperation, active learning, prompt feedback, emphasis of time on task, having high student expectations, and respecting diversity. Dixson (2015) has stated that learning is a social activity for numerous learners. The researcher further reported that online learners regard engagement, which decreases transactional distance, as the utilisation of learned resources. By creating a safe setting for students, institutions can promote admiration for variety and teamwork. Instructors who can precisely estimate their online students' time spent engaging and assimilating content can increase expectations and ensure students are not poised for failure. Kuh (2009) suggested that these principles are continued to be applied in online learning.

PERSISTENCE

The opposite of persistence is attrition; however, persistence is unlike retention. Attrition is when a student forgoes every form of education before finishing his or her degree or diploma. On the other hand, persistence involves students continuing to work on finishing their degree or diploma. Lastly, retention is an institution's desire to retain its students. If a student shifts to another institution to finish studying, he or she is persisting. However, for the initial institution, this student was not retained. Thus, a student's goal can differ from that of the institution (Hashim, Soopar & Hamid 2017). Nevertheless, persistence is the most commonly used term in numerous studies and literature on completion, dropout, and attrition. Therefore, persistence was chosen to be employed in this present study. Persistence can be measured in several manners. In the higher education setting, this comprises of students enrolling year to year, within-year persistence, and level persistence like the third year to the fourth year.

With online and distance education (DE) experiencing growth globally (Qayyum & Zawacki-Richter 2018), low completion rates for online and DE are given precedence by educational institutions, governments, and policymakers (Ekstrand 2013; Boset & Asmawi 2020). Investigation on predictors of institutional retention and student persistence consists of grade point average (GPA), finances, usefulness of the degree, encouragement and support, academic integration, social integration, an expressed intent to leave, and institutional commitment (Diem & Wolter 2019). Nevertheless, more holistic models of persistence exist. For example, Tinto's model emphasises how to promote student integration into higher education to increase persistence and lower dropouts (Newman et al. 2020). The model's focus is on student factors (family background, individual characteristics, and pre-college schooling) and institutional factors (peer interactions, faculty interactions, and social integration). Applying this model for other kinds of higher education students has been queried as it emphasises on traditional on-campus higher education students (Tentshol et al. 2019).

STUDENT SATISFACTION

Student satisfaction is described as a learner's perception of the value of educational experiences in an educational environment (Bates et al. 2019).

It is a critical factor that must be considered in the assessment of course and programme effectiveness. Moreover, it is among the five pillars of quality in online education that comprise learning effectiveness, access, faculty satisfaction, and institutional cost-effectiveness (Xiao et al. 2019). Nonetheless, it is a complex construct since it consists of numerous factors (Wickersham & McGee, 2008). Student satisfaction is crucial because it could eventually cause increased levels of motivation, engagement, learning, performance, and success (Sahin & Shelley 2008; Wickersham & McGee 2008).

In distance learning, flexibility, computer expertise, and usefulness are factors related to student satisfaction (Alqurashi 2019). Several factors such as instructor behaviour, reliable technology, and interactivity affect student satisfaction in an online environment (Bolliger & Martindale 2004; Dennen, Darabi & Smith 2007). Moreover, other factors like students' perception of task value and self-efficacy, social ability, instructional design issues, and the quality of the delivery system and multimedia instruction are significant (Liaw 2008; Lin, Lin & Laffey 2008). Issues related to computers (Frankola, 2001) and unable to comprehend online media (Herbert 2006) are two key reasons adult learners quit online courses. Anxiety due to technology could negatively affect student performance and satisfaction (Sun, Tsai, Finger, Chen & Yeh 2008).

LEARNING OUTCOMES

Learning outcomes can be defined as competencies that students are to attain (Gonçalves et al. 2016; Weinert 2001). Students can obtain various aspects of competence, such as factual and conceptual knowledge within an area of research, methodical knowledge comprising skills needed for problem-solving and scientific practice (e.g., literature research), social and personal competences, and/or media competence (Krish, Salehuddin & Razak 2017). Factual and conceptual knowledge denotes comprehending classifications, theories or models, whereas methodical knowledge signifies the utilisation of subject-specific skills, techniques, and methods (Cydis et al. 2017; Anderson & Krathwohl 2001). Through university courses, students, besides gaining conceptual and methodical knowledge, must also acquire social and personal competences like competences in teamwork, self-regulation, and monitoring of one's learning processes (Ismail & Alkhazali 2019; Paechter & Maier 2004).

UNDERLYING THEORY

The study's theoretical framework referred to Kearsley and Schneiderman's (1999) engagement theory. This theory looks at creating productive collaborative teams that carry out ambitious projects that matter to individuals beyond the classroom. Students should meaningfully be engaged in learning activities by interacting with others. Engagement theory functions as the framework for technology-based teaching and learning. "The fundamental idea underlying engagement theory is that students must be meaningfully engaged in learning activities through interaction with others and worthwhile tasks. While in principle, such engagement could occur without the use of technology, we believe that technology can facilitate engagement in ways which are difficult to achieve otherwise. Therefore, engagement theory is intended to be a conceptual framework for technology-based learning and teaching" (Kearsley & Schneiderman 1999).

RESEARCH FRAMEWORK

The research framework for the study is shown in Figure 1 which consists of an independent variable (online student engagement), two dependent variables (student satisfaction and learning outcomes), and the moderating variable (persistence).
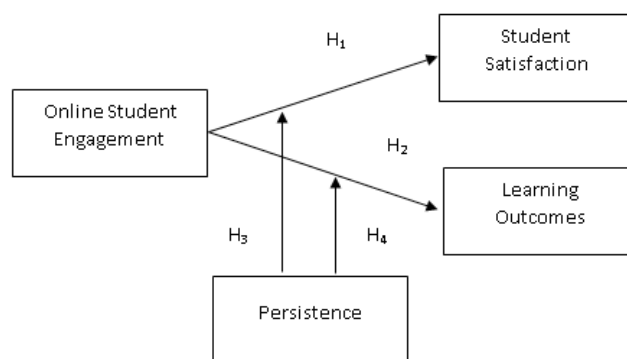

FIGURE 1. Research framework

Based on the above research framework, the following hypotheses are postulated to be tested in this study:

H_1: *Online student engagement is positively related to student satisfaction.*
H_2: *Online student engagement is positively related to learning outcomes.*
H_3: *Persistence moderates the relationship between online student engagement and student satisfaction.*
H_4: *Persistence moderates the relationship between online student engagement and learning outcomes.*

METHODOLOGY

SAMPLING TECHNIQUE

This research was conducted using purposive sampling technique. This approach was chosen because it was the most apt for this research, which examined student engagement, persistence, student satisfaction and learning outcomes among distance learners. In this study, the researcher has selected the distance learners that conform to the inclusion criteria which are a) was an active student in academic session 2018/2019; and b) they were at least in the 2nd year in the programme. These inclusion criteria would help raise the possibility that student engagement was a pertinent matter to the person and to improve accuracy in response to student satisfaction and learning outcomes questions. To better comprehend the sample, the demographic questions included sex, age, tenure with their organisation, current employment status, current year in the programme, and number of online courses the students have taken.

POPULATION AND SAMPLE SIZE

This study's target population was undergraduate distance learners from a Malaysian public university. For determining the minimum sample size for actual data collection, this investigation referred to the rule of thumb suggested by Hair et al. (2010), i.e. the sample size must be at least five times as many observations as the number of variable items to be analysed. Nonetheless, a more suitable sample size is to have a 10:1 ratio, which is 10 respondents to one observed variable item. In this study, the total number of items to measure all variables was 35. Thus, the acceptable minimum sample size was 5 × 35 items, i.e. 175 respondents.

DATA COLLECTION PROCEDURE

The questionnaire was created using SurveyMonkey, an online survey collection tool. For those who refuse to participate in this study, they are not affected by the possibility of risking future relationships with their lecturer involved in this research and worry about consequences like low marks, reduced learning opportunities, or decreased evaluative outcomes. Since all the measurement items used were adopted from prior empirical studies, the researcher believed that a pre-test was not required. Nevertheless, a pilot test was done to ascertain if the items in the questionnaire were clear and acceptable, and to refine the procedures regarding instrument administration (Maholtra et al. 2006). Fourteen sets of questionnaires were emailed to students that conformed to the inclusion criteria. A minor modification to the measurement items was done by the researcher to provide a specific example on the terminologies used in the questionnaire, as well as to fit the academic and student's context to enhance their understanding further.

During the actual data collection, a total of 372 sets of questionnaires was emailed to students from the major course managed by the researcher. From the 372 questionnaires, only 321 were used for analysis. The remaining 51 questionnaires were not used because of (a) uncompleted data (44 cases) and (b) students were in their 1st year of programme (7 cases). Consequently, only 321 cases were analysed, and this was more than the least number of cases needed (175) as recommended by Hair et al. (2010). Hence, the criterion set by Hair et al. (2010) of having an acceptable sample size, i.e. five participants per variable item, was fulfilled.

RESEARCH INSTRUMENTS

The instruments used were adopted from various past studies with acceptable reliabilities (Cronbach's alpha). Dixon's (2010, 2015) OSE scale comprises 19 Likert-type items that measure student engagement in an online learning setting. The Persistence scale by Bean (1982) consists of six Likert-type items that measure competences which students are to achieve. The Student Satisfaction (SS) scale by Tallman (1994) consists of five Likert-type items that describe the worth of educational experiences in an educational setting. The Learning Outcomes (LO) scale by Paechter and Maier (2010) comprises five Likert-type items that measure competences that students are to attain. For each variable, a five-point

Likert scale (1 = strongly disagree to 5 = strongly agree) was used for the assessment.

DATA ANALYSIS

The Partial Least Squares (PLS) approach was employed to scrutinise the research model. By adapting the two-step approach of Anderson and Gerbing (1988), the measurement model (measurement validation and reliability) was first verified. Then, the structural model was tested to examine the hypothesis relationship. Smart PLS M2 Version 3.0 and the two-step analysis method were used to analyse the data. Lastly, the bootstrap method (resampling of 500) was applied to determine the significance level of loading, weight, and path coefficient.

RESULTS

DEMOGRAPHIC FINDINGS

The total sample of 321 individuals consisted of 62 percent females and 38 percent males. The average age was 31 years, while the average tenure with their organisation was five years. The respondents were 100 percent employed in full-time jobs. All the respondents were 100 percent employed in full-time jobs and 100 percent of the respondents were above at least in their 2nd year in their online programme. The average number of courses the students have taken was 30 courses. Varying professions and organisational levels were represented (operational, supervisory, managerial) from many different organisational types (manufacturing, service, government/non-profit).

DESCRIPTIVE STATISTICS OF THE LATENT CONSTRUCTS

The four latent variables' mean value ranged from 3.79 to 4.33 while the standard deviation was between 0.88 and 1.016, based on a 5-point Likert-type scale. Nevertheless, all the variables' mean values were higher than the midpoint value of 2.50. The highest mean value belonged to Student Engagement (4.33), whereas Learning Outcomes presented the lowest mean value (3.79). On the other hand, dispersion values reported via standard deviation showed that the highest value and lowest values were by Persistence with 0.88 and Student Satisfaction with 1.016, respectively (see Table 1).

TABLE 1. Results of Descriptive Analysis

Constructs	No of items	Mean	Standard Deviation
Online Student Engagement	30	4.33	0.95
Persistence	6	3.95	0.88
Student Satisfaction	5	3.85	1.016
Learning Outcomes	5	3.79	0.960

COMMON METHOD VARIANCE

Harman's single factor test was carried out to determine the extent of the common method bias. The principal component factor unrotated analysis showed that the first factor accounted for 29.3% of the total of 65.9% covariance. The result signifies that the first factor accounted for less than 50% of the total variance explained. Following Podsakoff et al. (2003), this implies that there is no serious issue of common method bias in this study.

ASSESSMENT OF MEASUREMENT MODEL

Two types of validity were scrutinized, namely, convergent validity and discriminant validity to evaluate the measurement model. Convergent validity is generally determined via examination of indicator loadings, average variance extracted (AVE), and composite reliability (CR). In this study, as recommended by Fornell and Larker (1981), the indicator loadings and composite reliabilities were both higher than 0.7, whereas AVE was higher than 0.5 (see Table 2).

After examining the convergent validity, discriminant validity was tested. Nonetheless, there was criticism that the Fornell-Larcker (1981) criterion does not reliably spot the absence of discriminant validity in common research conditions (Henseler et al. 2015). Thus, an alternate method was proposed by Henseler et al. (2015) whereby the discriminant validity was evaluated using the heterotrait-monotrait (HTMT) ratio of correlations. There are two ways HTMT can be employed to evaluate discriminant validity, either as a criterion or statistical test. In the first approach, if HTMT value is higher than HTMT.85 value of 0.85 (Kline 2015) or HTMT.90 value of 0.90 (Gold et al. 2001),

TABLE 2. Results of Measurement Model

Constructs	Loadings	Composite Reliability (CR)	Average Variance Explained (AVE)
Online Student Engagement			
On_Stu_Engage_1	0.87		
On_Stu_Engage_2	0.89		
On_Stu_Engage_3	0.76		
On_Stu_Engage_4	0.77		
On_Stu_Engage_5	0.76		
On_Stu_Engage_6	0.82		
On_Stu_Engage_7	0.83		
On_Stu_Engage_8	0.81		
On_Stu_Engage_9	0.74		
On_Stu_Engage_10	0.72	0.87	0.74
On_Stu_Engage_11	0.81		
On_Stu_Engage_12	0.85		
On_Stu_Engage_13	0.83		
On_Stu_Engage_14	0.80		
On_Stu_Engage_15	0.86		
On_Stu_Engage_16	0.82		
On_Stu_Engage_17	0.73		
On_Stu_Engage_18	0.85		
On_Stu_Engage_19	0.76		
Persistence			
Persistance_1	0.791		
Persistance_2	0.835		
Persistance_3	0.821	0.81	0.76
Persistance_4	0.808		
Persistance_5	0.793		
Persistance_6	0.681		
Student Satisfaction			
Stu_Satisfaction_1	0.846	0.91	0.82
Stu_Satisfaction_2	0.891		
Stu_Satisfaction_3	0.895		
Stu_Satisfaction_4	0.774		
Stu_Satisfaction_5	0.823		
Learning Outcomes			
Learning_Outcomes_1	0.629		
Learning_Outcomes_2	0.636		
Learning_ Outcomes_3	0.806	0.90	0.74
Learning_Outcomes_4	0.807		
Learning_Outcomes_5	0.772		

then there is an issue of discriminant validity. The second approach, according to Henseler et al. (2015), observes testing the null hypothesis (H0: HTMT ≥ 1) against the alternative hypothesis (H1: HTMT < 1). If the confidence interval contains the value of one (i.e., H0 holds), this implies a lack of discriminant validity. As displayed in Table 3, all the values exceeded the HTMT.90 (Gold et al. 2001) and HTMT.85 (Kline 2015) values. Moreover, the HTMT Inference revealed that the confidence interval did not show a value of 1 on any constructs, therefore, implying discriminant validity has been determined.

TABLE 3. Results of heterotrait-monotrait (HTMT)

	(1)	(2)	(3)	(4)
Online Student Engagement				
Persistence	0.40 CI.$_{90}$ (0.30, 0.55)			
Student Satisfaction	0.56 CI.$_{90}$ (0.43, 0.64)	0.32 CI.$_{90}$ (0.34, 0.56)		
Leaning Outcomes	0.38 CI.$_{90}$ (0.29, 0.53)	0.45 CI.$_{90}$ (0.32, 0.62)	0.39 CI.$_{90}$ (0.31, 0.56)	

ASSESSMENT OF STRUCTURAL MODEL

Out of the four hypotheses, the results showed only two hypotheses were supported. Specifically, persistence was found to moderate the relationship between student engagement and student satisfaction (β = 0.082, p < .01). Similarly, persistence was found to moderate the relationship between student engagement and learning outcomes (β = 0.065, p < .01). Therefore, hypotheses H3 and H4 were supported. However, the remaining hypotheses, namely, H1 (β = 0.060 p > .1) and H2 (β = 0.001, p > .1) were not supported. The results are illustrated in Table 4.

TABLE 4. Path Coefficient and Hypotheses Testing

No	Relationship	Path Coefficient (β)	Std. Error	t-value	Decision
H1	Online Student Engagement --> Student Satisfaction	0.066	0.060	1.086	Not Supported
H2	Online Student Engagement --> Learning Outcomes	0.001	0.074	0.009	Not Supported
H3	Online Student Engagement * Persistence --> Student Satisfaction	0.082	0.049	1.676**	Supported
H4	Online Student Engagement * Persistence --> Learning Outcomes	0.065	0.032	1.997**	Supported

Note. ***p < 0.01 (2.33), **p < 0.05 (1.645), *p < 0.1 (1.28) (based on one-tailed test)

DISCUSSION

This research aimed to investigate the link between online student engagement towards student satisfaction and learning outcomes. In addition, persistence was examined for its moderating effect between online student engagement and behavioural outcomes which are student satisfaction and learning outcomes.

In contrast to the proposed hypothesis, the result of this study showed that online student engagement was not significantly related to online student satisfaction. The non-significant relationship between online student engagement and student satisfaction could be rationalised based on the respondents in this study who are distance learners. As all participating respondents are working adults and possessed an average of five years working experience in the current organisation, this study assumes their work experience influenced them to be more organised in managing their distance learning activities. In addition, as pursuing distance education is fully online-based, we may assume they have made an effort to look over the class notes before getting online, taking good notes over readings, slides, and videos to make sure they understand the materials, and study regularly. Thus, even though they have to struggle to digest and find ways to make sure the course materials are relevant and could be applied to their life, with a burning learning desire to learn the materials, getting a good grade is not a problem for them. Therefore, the result of this new finding contributes to the literature that online student engagement is negatively related to online student satisfaction.

Additionally, in contrast to the proposed hypothesis, the result of this study showed that online student engagement did not significantly influence learning outcomes. The non-significant relationship between online student engagement and learning outcomes could be justified could be attributed to the respondents in this study who are distance

learners. Since the mean age of the respondents is 31 years and all are working adults, this study assumes that they are millennials and are the most tech-savvy employees in the organisation. In addition, pursuing distance education via an e-learn portal, we may assume they have fun chatting in the online forums, having the chance to mingle with other students in the course, as well as feeling excited to participate in the auto-graded online quizzes, which allow them to track their own scores and performance. Thus, even though they have to struggle with online classes that require students and instructor to be online at the same time (real-time), and the possibility to miss the online activities, with their willpower and responsibility, doing well in the test or quizzes is not a problem for them. Therefore, the result of this new finding contributes to the literature that student engagement is negatively related to learning outcomes.

The result from the moderation analysis showed an interesting finding whereby persistence moderates the relationship between online student engagement and behavioural outcome, which is student satisfaction. This finding is in line with an earlier work by Müller (2008) that claimed that students feel more motivated to learn and are more likely to stay when they see value in their education. Hence, as all respondents are working adults, pursuing online distance learning is a big move in the distance learner's life, we may assume that they are physically and mentally prepared as well as confident of overcoming any obstacles encountered in the course of study. On top of that, as graduating from the university is important as it would enhance and develop their career path, they would personally feel this is a rewarding educational experience. As a result, persistence moderate the relationship between online student engagement and student satisfaction.

Furthermore, the result from the moderation analysis has confirmed that persistence moderates the relationship between online student engagement and behavioural outcome which is learning outcomes. This finding is in line with Eom et al. (2006) which suggests that students are more satisfied when they perceive they are learning and are more likely to learn when they are satisfied with their learning outcomes. In addition, with all respondents being working adults with work experience, this study also assumes they have good time management skills to balance their coursework and job responsibilities. They would certainly perform with good results so that they would be able to enrol for the next semester

and will finish their studies no matter how difficult it may be. Throughout the learning process, they would be able to apply their knowledge to different problems and situations. As a result, this study found that persistence moderates the relationship between online student engagement and learning outcomes.

CONCLUSION

The findings have contributed to the literature by determining the significance of the indirect relationship via persistence between online student engagements towards student satisfaction and learning outcomes. These findings are different from past studies as it was conducted among distance learners in DE within the Malaysian context. The implication is that distance learners who commit themselves to a goal will highly likely persist, and the more courses a student finishes, the closer he or she will be to graduating. In contrast, for distance learners who possess a lower level of persistence and do not participate adequately, they could face the risk of quitting an online course. The findings are also harmonised with the concept of persistence in online learning, implying that an online student has successfully completed all course requirements and is progressing towards programme completion.

Next, looking at the practical contribution, online programmes are suggested to improve student engagement by linking coursework to student practice and assist students to develop specific skills and notice the value of their learning. Besides, ensuring coursework is relevant to students' professional practice and enhancing student satisfaction with courses, programmes, and learning outcomes are also crucial to improve retention in online programmes.

The second practical contribution is to recommend solutions for institutions to establish rapport between online programme staff and students early on. Moreover, online programmes must promote and establish support networks that allow students to solve personal or professional issues, which could then stop them from quitting an online programme.

This research has several limitations. Firstly, this study's data were self-reported. Therefore, Harman's single factor test was conducted to approximate the possible threat to the results interpretation. Second, because this is a cross-sectional study, findings could vary if a longitudinal approach was employed.

Third, since a low number of sample was used for the research, it will be useful for future researchers to contemplate the use of a comparative method to investigate the interaction on online student engagement, persistence, student satisfaction, and learning outcomes among distance learners from different ODL institutions in Malaysia.

Future research should conduct in-depth interviews and focus group sessions with distance learners to discover other factors that could enhance the display of online student engagement, persistence, student satisfaction, and learning outcomes in private higher education institutions in Malaysia. For any research model, longitudinal studies give concrete inferences and better proof, thus, it would be advantageous for this research to be examined in a longitudinal approach in the future. Moreover, researchers can perform comparative examinations between public and private universities to determine which culture has more dominance. The upcoming studies can also investigate if this present study's results can be generalised beyond higher education institutions within the Malaysian context. Finally, hopefully, this study will be a part of a larger series of investigations to assist in developing a persistence model that can help distance education institutions to improve student engagement and to reduce the attrition rate.

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