FACTORS INFLUENCING ONLINE LEARNING ENGAGEMENT: INTERNATIONAL STUDENTS' PERSPECTIVE AND THE ROLE OF INSTITUTIONAL SUPPORT

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ABSTRACT

The study was intended to model online learning engagement of international students studying in Indonesia to determine which factors affect learner engagement. A survey was conducted online, and 102 international students filled the questionnaire. Partial Least Squares-Structural Equation Modeling (PLS-SEM) technique was used for data analysis. The results show that the variables: university support (T = 2.881, $P< 0.01$), motivation (T = 3.411, $P< 0.01$), and personal innovativeness (T = 2.426, $P< 0.05$) were the significant predictors of international students' engagement in online learning. Other variables like instructor interactivity, student-material interaction, student-student interactions, and self-regulated learning didn't significantly affect learner engagement. The findings of this exploration can be used as empirical data for higher education institutions' managers when developing support programs for international students during their studies in a destination country. Other findings' implications and recommendations are discussed.

INTRODUCTION

The Covid-19 pandemic has changed various aspects of life, including the education and learning system experienced by international and local students. After the pandemic, universities adjusted the learning system by providing a distance online learning alternative (Widiasih et al., 2020). The Covid-19 consequences interrupted the education sector and added the complexity of the problems faced by international students both in academic and nonacademic matters (Cleland et al., 2020). In the new normal after the pandemic, international students from various countries find it more challenging to study in destinations like Indonesia. For international students who take online learning, their overall learning efficiency is hindered due to multiple technical and non-technical limitations (Bayham & Fenichel, 2020; Murphy, 2020). They experience various challenges to engage in online studies (Baloran, 2020). Online learning is implemented as an effective effort to manage physical and social distance to mitigate the spread of Covid-19 (Blankenberger & Williams, 2020; Murphy, 2020).

Implementing fully online learning is abrupt and novel to most students, especially international students, and of sudden for teachers in developing countries like Indonesia. Both academically and non-academically, international students adapt to the new normal after the pandemic, such as changes in learning methods, financial problems, demands to maintain physical and mental health, and the need to limit social relationships. These drastic changes affected students' psychology (Azorin, 2020). In other words, the pandemic crisis has affected students' psychological conditions such as learning motivation, discipline, and isolation feelings while adapting to changes in the learning system (Raaper & Brown, 2020). Among the crucial psychological aspects of students in the learning process is learner engagement.

A study (Susanto et al., 2020) revealed that online learning during the new normal affected the emotions of international students. Other studies indicate that there are many issues associated with learning engagement in online systems (Kahn et al., 2017), including a reduced commitment due to online technical hardships (Jaggars, 2014) and low learning retention (J. Moore, 2014). Moreover, learner satisfaction and engagement in an online context were found to be affected by factors such as learner motivation and interest loss (Basuony et al., 2020; Means & Neisler, 2021), self-regulation, and social interactions issues (Hamdan et al., 2021) as well as lack of support (Tonks et al., 2021). This situation is fascinating to empirically examine international students' online learning engagement in a developing country such as Indonesia. Therefore it's vital to understand what factors influence international students to engage in online learning.

Studies from various perspectives regarding the experiences of international students studying in Indonesia are currently still limited (Widiasih et al., 2020). The most recent researches on international students studying in Indonesia focused on Indonesian language learning experiences. Moreover, many previous studies (Ferdiansyah et al., 2020; Hastowahadi; Setyaningrum & Pangesti, 2020; Nurfaidah et al., 2020; Puspitasari et al., 2020; Widiasih et al., 2020; Widodo et al., 2020) conducted qualitative studies on non-academic elements. Meanwhile, other aspects, especially concerning educational systems and learning experiences such as online learning engagement, have not received much attention from researchers.

Based on the literature review, no study yet explains which factors influence international students in Indonesia to engage in online learning, whether before, during, or even after the pandemic. Moreover, previous studies have a methodological gap as most of them are qualitative based on conceptual modeling (Abubakari & Mashoedah, 2021), and few are quantitative studies based on descriptive analysis. Therefore, this current study aims to fill the gap by developing a model of online learning engagement for international students to determine which factors affect learner engagement in the online context.

The following questions guided the research to reach the study's objectives:

1. What factors influence international students to engage in online learning?
2. What is the role of institutional support in influencing international students' engagement in the online context?
3. What is the effect of learner motivation and personal innovativeness on online learning engagement?

LITERATURE REVIEW

Research on psychological issues of international students has been carried out by many academics, such as those related to self-esteem, psychological adaptation, life satisfaction, attitudes on help-seeking, acculturation, and depression (Li et al., 2014; Shafaei et al., 2018). Recently, a study (Khanal & Gaulee, 2019) found some typical international students' problems while studying abroad. These include financial, racism and discrimination, academic and language issues, and psychological issues. Besides those common challenges, after the pandemic outbreak, the current situation has necessitated implementing online learning as the best alternative to maintain the educational process. However, online learning after the pandemic has added another unique challenge to international students while studying abroad.

Both local and international students feel the challenges and changes brought by the aftermath of the Covid-19 pandemic; however, the latter group usually faces more challenges while studying in a foreign country (Le & McKay, 2018; McGarvey et al., 2015). Several studies show that students studying abroad face various challenges and require multiple adaptations, including language, culture, and education system (Brunsting et al., 2018; Li et al., 2018; Luo et al., 2019; Rana et al., 2020; Singh, 2019). Recently, it was

found that the abrupt changes in learning modes, especially the sudden shift to online learning systems, caused international students to miss many opportunities. Hence, they could not meet their expectations (Hastowahadi; Setyaningrum & Pangesti, 2020), such as graduating on time. A study by Widiasih et al. (2020) reviewed the experiences of international students while studying in Indonesia. The analysis results found, among others, three main points, namely differences in education systems, socio-culture, and learning challenges due to language problems.

Ferdiansyah et al. (2020) explored some Thai students' learning experiences at three universities in Indonesia during the covid-19 pandemic. This interview study revealed that the university policy to implement online learning entirely was new to most international students. Furthermore, another study related to learning the Indonesian language for foreign speakers (BIPA Program) was recently conducted exploring international students' emotional geography and experiences while studying the Indonesian language online. The research findings show that program studies carried out online affected the emotional geography of international students (Susanto et al., 2020). All these studies indicate that the current online learning situation affects the learning engagement of international students as most of them are not experienced in fully online learning. Thus, it is crucial to find out what factors affect the learning engagement of international students in a destination country, especially in Indonesia.

Student Engagement and Learning

Researchers agree that engagement is a variable with multiple dimensions. However, there is no unanimous agreement on the number of its sub-constructs (Christenson et al., 2012; Fredricks & McColskey, 2012). Student engagement is a psychological state, quantitative and qualitative, about behavioral, affective, and cognitive reactions to the educational process (Christenson et al., 2012; Gibbs & Poskitt, 2010; Gunuc & Kuzu, 2015). Some study describes engagement as a social-psychological phenomenon, particularly the attention given, interest indicated, as well as effort and investment exerted by a learner (Marks, 2000). Some scholars argue that engagement is a multidimensional variable with three dimensions: behavioral, cognitive, and affective (Fredricks et al., 2004; Jimerson et al., 2003). These three dimensions have a dynamic interaction within a learner (E. A. Skinner, Kindermann, & Furrer, 2009).

Emotional engagement pertains to the apprehension of learning norms, interest, a sense of belonging to the institution, and reactions to instructors, campus friends, and classmates (Gibbs & Poskitt, 2010). Some researchers consider this engagement dimension very significant for fostering students' sense of attachment to their educational institutions and influences students' willingness to participate in learning (Fredricks, 2011; Fredricks et al., 2016; Jimerson et al., 2003). That is even more potential to be explored in the context of international students. Meanwhile, cognitive engagement refers to students' mental process in learning and strategies used for academic work, such as liking learning challenges, self-regulated, being willing and persistent to learn (Gibbs & Poskitt, 2010; E. A. Skinner, Kindermann, James P. Connell, et al., 2009).

Lastly, the third dimension, behavioral engagement, leads to actual involvement and participation in non-academic and academic activities like obedience to institutional principles and regulations, attending classes, and performing academic tasks (Jimerson, Campos, and Greif, 2003; Fredricks and McColskey, 2012). This component is said to have three sub-dimensions: active participation, rules compliance, and involvement in the learning process like asking or answering questions and engaging in discussions (Fredricks et al., 2004). Thus, affective, behavioral, and cognitive dimensions of engagement provide characteristics of students' feelings, actions, and thinking during learning (Wang & Eccles, 2013; Wang & Holcombe, 2010) both in the traditional and online context.

Nonetheless, student engagement is not an independent variable, making it appealing for researchers to determine what possible factors influence it empirically. Furthermore, students' engagement in an online learning context needs proper attention and analysis due to some learning limitations compared to conventional learning, especially concerning social interactions. It is also more essential to analyze international students during and after the current pandemic in the online context.

Conceptual Model and Hypotheses

It is vital to explore the factors that directly or indirectly influence learner engagement and understand their causal-effect relationships in an online learning context, especially concerning international students. Following is a brief explanation of some factors which affect student engagement.

Institutional Support, Instructor Interactivity, and Student Interactions

Social interactions affect individual involvement in various social contexts (Bandura, 2001), including learning. Students who get support both morally and materially from the surrounding environment are more interested in actively engaging in activities that support their academics. Previous research revealed a direct association between social support and interactions (with instructors or friends) and student engagement in the learning process (Garcia-Reid, 2007; Ruzek et al., 2016). Students who feel that they get social support from their instructors tend to show behavior per instructors' expectations, tend to be involved from an affective, behavioral, or cognitive perspective (Patrick et al., 2007). Other findings indicate a close relationship between learner engagement and institutional environmental support (Amoozegar et al., 2017; J. W. Lee, 2010), including emotional support from academic staff, teachers, and friends on campus (Wang & Eccles, 2013).

Studies show that three forms of interactivity are essential in the online learning context: instructor-student, student-student, and student-material interactions (Anderson, 2003; Croxton, 2014; Kyei-Blankson et al., 2016; M. G. Moore, 1989). It is argued that a significant online learning experience can be attained if at least one kind of interaction is at the optimum level (Anderson, 2003, 2004). Several empirical studies support the potential of these interactions, especially in online learning (Ali & Ahmad, 2011; Johnson et al., 2000; Kuo, 2014; Kuo et al., 2014; Sher, 2009). It is crucial to understand how these interactions affect international students' engagement in online education.

> H1: Instructor interactivity (II) significantly influences student-student interactions (SSI).
>
> H2: Instructor interactivity significantly and directly influences student engagement (SE).
>
> H3: Instructor interactivity significantly influences student-material interaction (SMI).
>
> H9: Student-student interactions have a significant influence on student engagement.
>
> H13: University support (US) has direct effects on student engagement.

Personal Innovativeness in IT

Individual innovativeness in information technology (IT) is a tendency of a person willing to try and experiment with an introduced IT (Agarwal & Prasad, 1998) regardless of other peoples' experiences and perceptions (Al-Busaidi & Al-Shihi, 2012; Ngafeeson & Sun, 2015). Moreover, innovative students tend to perceive a new learning system as helpful, hence curious to explore it (Al-Busaidi & Al-Shihi, 2012; Bervell et al., 2020; Ngafeeson & Sun, 2015). Literature indicates that innovativeness is related to how a person perceives the usefulness of an innovation (van Raaij & Schepers, 2008). In the context of this study, the variable of personal innovativeness is linked to the creativity and curiosity to engage with online learning materials uploaded by an instructor in the online learning platforms.

The level of innovativeness of students determines how they interact with online systems and materials made available by an instructor (Zimmerman, 2012). It hence influences learner engagement with online content (Owusu-Agyeman & Larbi-Siaw, 2018). Furthermore, student innovativeness helps to see the online learning platforms and contents as valuable and straightforward to interact with (Bervell et al., 2020), making them try out learning technologies implemented by an instructor for curiosity (Rogers, 2003).

> H4: Personal innovativeness (PIIT) influences student-material interaction.
>
> H5: Personal innovativeness has a direct influence on student engagement.

Learner Motivation

Motivation determines the level of activity and general direction of human behavior. It influences an individual, arouses and directs the behavior displayed by an individual (Deci & Ryan, 1985). Learners with high motivation are more involved in academic activities than students with low achievement motivation (Akpan & Umobong, 2013). On the other hand, learners with low motivation mostly do not show maximum effort in the learning process. That means achievement motivation has an essential role in learners engaging in academic activities. The level of motivation contributes well to the degree of involvement in learning activities (Appleton et al., 2008; Soric et al., 2017).

Previous literature indicates a robust association between learner engagement and motivation (Ben-Eliyahu et al., 2018; King & Datu, 2017; Patall et al., 2016). Furthermore, motivation is the most influential factor for individuals to engage in different activities (Alivernini & Lucidi, 2008; Nguyen & Van Nguyen, 2019; Stoen Utvær & Haugan, 2016). Therefore, intrinsic and extrinsic motivations are fundamental and much needed in students to engage in the learning process, including online. Thus, the following can be hypothesized:

H6:   Motivation (M) will have a positive direct effect on student engagement.

H7:   Motivation positively influences self-regulated learning (SRL).

Student-Material Interaction

Interaction between learner and material is critical in online education (M. G. Moore, 1989); without this, online learning is almost impossible to carry out (Coffin Murray et al., 2012; Murray et al., 2013). Material interaction pertains to an individual engagement with online learning contents such as text handouts, videos, and other online tasks prepared by an instructor (Bervell et al., 2020; Sher, 2009). Learner interaction with online materials provides an opportunity to gain extra knowledge and comprehension and facilitate the interactions between lecturer and learner or between classmates, leading to better student engagement (McLaughlin et al., 2005). In addition, it is argued that interactive online materials and tasks based on problem-solving stimulate interactions between students (Jung et al., 2002).

H8:   Student-material interaction influences student-student interactions.

H10:   Student-material interaction has significant effects on student engagement.

Self-Regulated Learning

Self-regulation is an individual's ability to manage and control the concerned relevant actions, set personal goals, self-evaluate success when achieving those goals, and self-rewarding after obtaining those specified goals (Friedman & Schustack, 2016). Increased student self-regulation can increase learning engagement and, hence, students' general success (Fredricks et al., 2004). Students who are cognitively engaged have a high level of achievement (Wang & Peck, 2013). The cognitive engagement dimension is closely related to the qualitative extent of mental processes and students' learning techniques in academic works, such as being self-regulated, persistent and willing to learn, and liking learning challenges (Gibbs & Poskitt, 2010). Several studies (Cho et al., 2017; Cho & Kim, 2013; Kuo et al., 2014; Ozkan & Koseler, 2009; Safsouf et al., 2020; Shih et al., 2019) indicate the crucial role of self-regulated learning ability in the context of online education.

H11:   Self-regulated learning has a significant effect on student-material interaction.

H12:   Self-regulated learning has direct effects on student engagement.

Figure 1 depicts the proposed conceptual model of online learning engagement (MOLE), in which each relationship between variables indicated by arrows represents the research hypothesis.
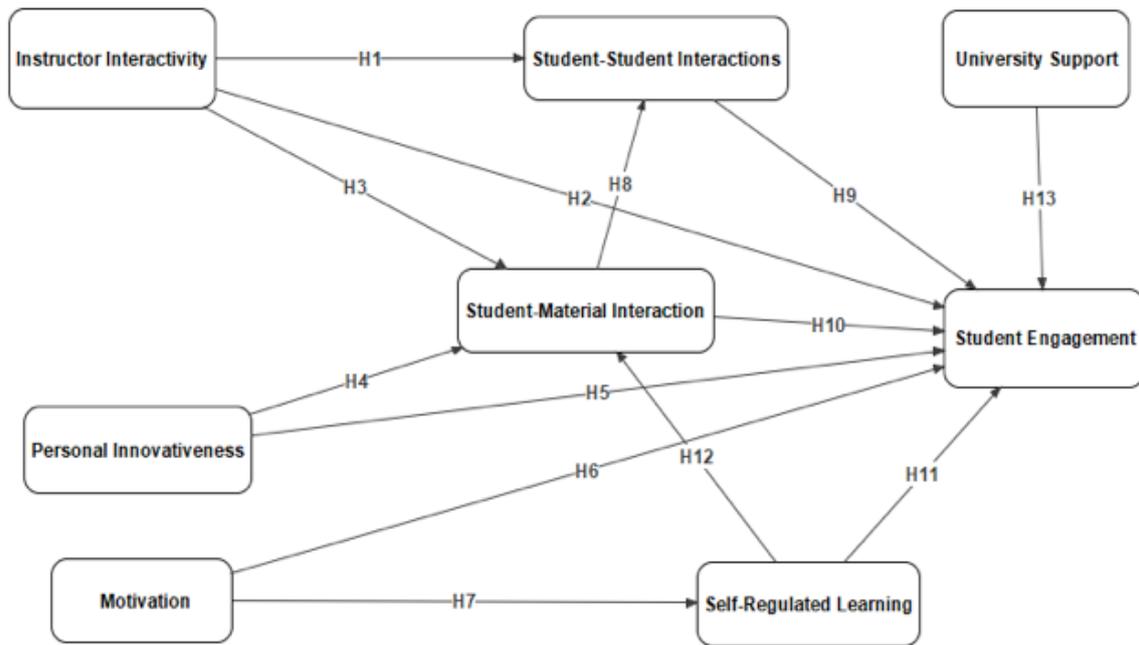
Figure 1. Conceptual Model of Online Student Engagement

METHODOLOGY

Participants and Context

This study involved International students studying in Indonesia during and after the Covid-19 breakout. Hence, respondents were from different universities in Indonesia invited to participate through WhatsApp groups and private chats. One hundred and two (102) students filled the online Google Form questionnaire voluntarily and anonymously. Seventy-two (72) out of them were males, and the rest (30) were females. The majority (73) were aged 21-30, 25 respondents were aged 31 and above, while only four were aged 20 and below.

Moreover, many respondents were from African countries (61), followed by Asian countries (30), two Europeans, and one Latino American, while eight respondents kept their country of origin anonymous. Moreover, most (74) respondents were pursuing a Master's degree, 13 took an Indonesian language course (BIPA) program, ten undertook bachelor's degrees, and five pursued Ph.D.

Instrumentation and Scale

This study is based on a quantitative survey, and the instrument to measure all variables used was formulated based on previous empirical studies. For the items of Instructor Interactivity (6-items), Student-Material Interaction (4-items), and Student-Student Interactions (4-items) variables, were adapted from (Ali & Ahmad, 2011; Kuo, 2014; Sher, 2009), with a slight modification of words to fit the study's context. Moreover, motivation (6-items; intrinsic and extrinsic motivation, three items for each) variable was adapted from (Alivernini & Lucidi, 2008; Stoen Utvær & Haugan, 2016). The University Support (4-items) variable was taken from (Amoozegar et al., 2017). Self-Regulation (4-items) adapted from (Kuo et al., 2014; Safsouf et al., 2020; Shih et al., 2019), and Personal Innovativeness (4-items) from (Agarwal & Prasad, 1998). Moreover, Student Engagement (6-items; containing all three dimensions with 2-items each) were adapted from (Appleton et al., 2006; E. Skinner et al., 2008). All items were measured in a 5-point Likert scale (from 1= Strongly Disagree to 5= Strongly Agree).

Data Collection and Analysis Methods

After the instrument was compiled, the questionnaire statements (comprising two main parts: demographic information and research statements) were put in the Google Form. Then, the link was shared in social media groups and inboxes (especially in WhatsApp) of international students in Indonesia. Meanwhile, the data collection technique was non-probabilistic based on the snowballing method since access to participants was very difficult considering the pandemic protocols and students are scattered in different universities.

The pilot study of data analysis was conducted with 30 samples for checking preliminary reliability analysis of the questionnaire items before an entire collection of data and final analysis was done. As a result, the reliability (based on Cronbach's Alpha) was found to be 0.942, which is higher than a minimum required coefficient of 0.7 (Cronbach, 1951; Hair Jr et al., 2017). Finally, the analysis of collected data was carried out using IBM-SPSS V.25.0 software for demographic data analysis. In addition, Smart-PLS V.3.3.3 (Ringle et al., 2015) was used for partial least square-structural equation modeling (PLS-SEM) analysis.

ANALYSIS AND RESULTS

Measurement Model Analysis

The first thing analyzed in PLS-SEM analysis is the outer (measurement) model for checking the reliability, validity, and internal consistency of indicators and respective constructs. Hence, the following measures were essential to be reviewed, namely, composite reliability (CR), Cronbach's Alpha (α), and convergent validity based on indicators (factor) loadings (IL) and average variance extracted (AVE) values. The discriminant validity of every construct is checked based on the Fornell-Larcker criterion (FLC) and Heterotrait-Monotrait Ratio (HTMT) criteria. Acceptable values for CR and α, minimum loading value should be 0.7, while IL should be at least 0.708 (Hair et al., 2019). Furthermore, the minimum acceptable value of AVE is 0.5, while the value of HTMT should be less than 0.9 or less than 0.85 (in a strict sense) (Hair Jr et al., 2017; Henseler et al., 2017).

As for the FLC, the value of the AVE square root of the construct itself must be higher than the correlations between the same construct and other constructs (Hair et al., 2019). Table 1 depicts the results of the IL, CR, α, and AVE. The internal consistency test (measurement model) has been justified as reliable and valid since all the criteria have been fulfilled, as shown in Table 1.

Table 1. Reliability and Validity Test Results

Factor	Item	IL	α	CR	AVE
Instructor Interactivity (II)	II1	0.754	0.818	0.88	0.647
	II4	0.845			
	II5	0.777			
	II6	0.838			
Motivation (M)	M1	0.847	0.734	0.849	0.653
	M2	0.806			
	M3	0.77			
Personal Innovativeness (PIIT)	PIIT1	0.733	0.768	0.851	0.588
	PIIT2	0.734			
	PIIT3	0.789			
	PIIT4	0.809			
Student Engagement (SE)	SE2	0.73	0.825	0.878	0.59
	SE3	0.764			
	SE4	0.776			
	SE5	0.85			
	SE6	0.714			

Student-Material Interaction (SMI)	SMI1	0.783	0.805	0.873	0.632
	SMI2	0.738			
	SMI3	0.822			
	SMI4	0.833			
Self-Regulated Learning (SRL)	SRL1	0.796	0.84	0.893	0.677
	SRL2	0.765			
	SRL3	0.887			
	SRL4	0.839			
Student-Student Interaction (SSI)	SSI1	0.851	0.779	0.873	0.697
	SSI2	0.897			
	SSI3	0.749			
University Support (US)	US1	0.888	0.874	0.922	0.798
	US2	0.903			
	US3	0.889			

The values of indicator loadings (except the items II2, II3, M4, M5, M6, SE1, SSI4, and US4 didn't load above the threshold and are not included in Table 1) are all above the threshold coefficient of 0.708 (Hair et al., 2019). At the same time, the loading values of Cronbach's Alpha and CR are all above 0.7, which is the least acceptable value (Hair et al., 2019). Moreover, the AVE coefficients are above 0.5, indicating that the convergent validity test was passed (Hair et al., 2019).

The discriminant validity test results in this study satisfy the required criteria of the Fornell-Larcker and Heterotrait-Monotrait Ratio. Discriminant validity is essential to check if all factors are distinct regarding what they measure (Henseler et al., 2017). Table 2 shows the results of FLC and HTMT (values in the brackets, in italics).

The results in Table 2 indicate that all criteria of FLC and HTMT are met. As for FLC, the values of the AVE square root of each construct are higher (values in bold) than the rest of the cross-correlation values with other constructs (values not bolded), indicating that the FLC is fulfilled (Fornell & Larcker, 1981; Hair et al., 2019). Moreover, the HTMT criterion is also established as all values (in brackets and italic) are less than the maximum cut-off of 0.9 coefficient as the highest value of HTMT in the table is 0.855, which is less than the acceptable value of 0.9 (Henseler et al., 2015, 2016, 2017).

Table 2. Fornell-Larcker Criterion and Heterotrait-Monotrait Ratio Results

Construct	II	M	PIIT	SRL	SE	SMI	SSI	US
Instructor -Interactivity (II)	**0.805** *(0)*							
Motivation (M)	0.491 *(0.637)*	**0.808** *(0)*						
Personal - Innovativeness (PIIT)	0.418 *(0.503)*	0.470 *(0.618)*	**0.767** *(0)*					
Self-Regulated -Learning (SRL)	0.490 *(0.598)*	0.678 *(0.855)*	0.454 *(0.550)*	**0.823** *(0)*				
Student Engagement- (SE)	0.608 *(0.737)*	0.632 *(0.803)*	0.541 *(0.675)*	0.540 *(0.647)*	**0.768** *(0)*			
Student-Material- Interaction (SMI)	0.679 *(0.833)*	0.585 *(0.767)*	0.369 *(0.457)*	0.540 *(0.657)*	0.607 *(0.738)*	**0.795** *(0)*		
Student-Student- Interaction (SSI)	0.543 *(0.676)*	0.455 *(0.605)*	0.416 *(0.526)*	0.467 *(0.571)*	0.512 *(0.637)*	0.578 *(0.727)*	**0.835** *(0)*	
University Support- (US)	0.552 *(0.655)*	0.359 *(0.451)*	0.355 *(0.437)*	0.442 *(0.513)*	0.608 *(0.710)*	0.528 *(0.627)*	0.595 *(0.726)*	**0.894** *(0)*

Structural Model Analysis

The next step is to assess the inner (structural) model based on the criteria of predictive relevancy (Q^2) coefficient determined by blindfolding technique in PLS, determination factor (R square, R^2), and path coefficients significance (Hair et al., 2019). The Q^2 coefficient measures whether all independent constructs are relevant in predicting a particular dependent construct within a model. Moreover, the R^2 coefficient indicates how powerful the predicting variables can explain the variance of a specific dependent variable in a structural model. For example, when the values of Q^2 are 0.02, 0.15, or 0.35, then are respectively considered weak, moderate, and strong, meanwhile, and R^2 values of 0.70, 0.50, and 0.25 indicate respectively high, medium, and low (Hair Jr et al., 2017). The assessment results of Q^2 and R^2 coefficients are depicted in Table 3.

Table 3. Predictive Relevancy and Determination Coefficients Results

Construct	SSO	SSE	Q^2 (=1-SSE/SSO)	R Square (R^2)
Instructor Interactivity	408.000	408.000		
Motivation	306.000	306.000		
Personal Innovativeness	408.000	408.000		
Self-Regulated Learning	408.000	284.395	0.303	0.460
Student Engagement	510.000	339.256	0.335	0.628
Student-Material Interaction	408.000	283.096	0.306	0.518
Student-Student Interaction	306.000	229.603	0.250	0.376
University Support	306.000	306.000		

From Table 3, the values of R2 were between 0.376 (for Student-Student Interaction dependent variable) and 0.628 (for Student Engagement endogenous variable). That means that all the predicting variables in the model could explain the variance of 62.8% to the student engagement variable in online learning. The 0.628 value of the determination-coefficient is considered almost high as it is near 0.7 value (Hair Jr et al., 2017). Moreover, values of Q2 are between 0.25 and 0.335, meaning that the prediction power of the hypothesized model is highly relevant (Hair Jr et al., 2017). Finally, for path coefficients significance analysis, a PLS bootstrapping method was applied with 5000 samples based on the significant level of 0.05, two-tailed. Figure 2 and Table 4 depict the results of path coefficients and significance level attained.
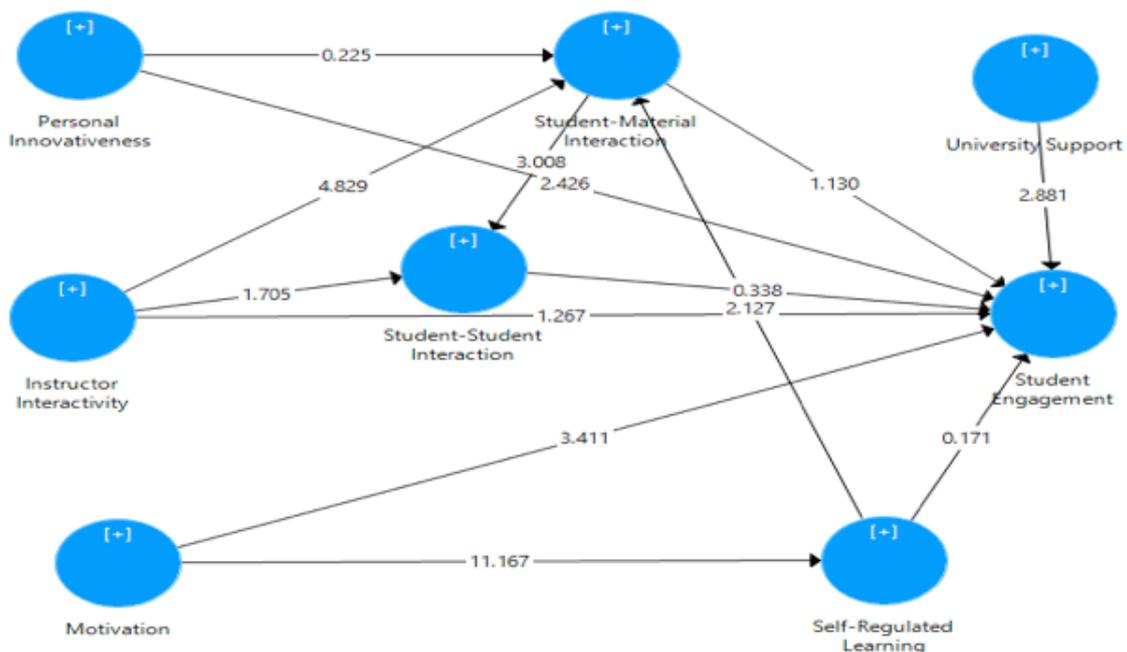

Figure 2. Path Analysis Bootstrapping Results

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Table 4. Path Coefficients (T-Statistics) and Significance Results

Path	Original-Sample (O)	Standard Deviation (STDEV)	T Statistics (|O/ STDEV|)	P-Values
II -> SE	0.149	0.117	1.267	0.205
II -> SMI	0.540	0.112	**4.829**	**0.000**
II -> SSI	0.279	0.164	1.705	0.088
M -> SRL	0.678	0.061	**11.167**	**0.000**
M -> SE	0.316	0.093	**3.411**	**0.001**
PIIT -> SE	0.203	0.084	**2.426**	**0.015**
PIIT -> SMI	0.022	0.098	0.225	0.822
SRL -> SE	-0.021	0.124	0.171	0.864
SRL -> SMI	0.265	0.125	**2.127**	**0.034**
SMI -> SE	0.116	0.102	1.130	0.259
SMI -> SSI	0.388	0.129	**3.008**	**0.003**
SSI -> SE	-0.039	0.115	0.338	0.735
US -> SE	0.311	0.108	**2.881**	**0.004**

Based on the results portrayed in Figure 2 and Table 4, it can be seen that only seven paths have significant coefficients (Bolded values) with a significance level of less than 0.05 (predefined during bootstrapping). These paths are, II -> SMI (T = 4.829, $P <0.01$), M -> SRL (T = 11.167, $P< 0.01$), M -> SE (T = 3.411, $P< 0.01$), PIIT -> SE (T = 2.426, $P< 0.05$), SRL -> SMI (T = 2.127, $P< 0.05$), SMI -> SSI (T = 3.008, $P< 0.01$), US -> SE (T = 2.881, $P< 0.01$). The rest of the six paths were deemed not significant as their coefficient values are above 0.05 level. In other words, seven hypotheses (H3, H5, H6, H7, H8, H11, and H13) were supported, while six hypotheses (H1, H2, H4, H9, H10, and H12) were rejected.

DISCUSSION OF FINDINGS

Based on the hypothesized relationships, the study findings indicate that the potential factors that directly determined international students' online learning engagement were university (institutional) support, student motivation, and personal innovativeness in IT. The finding of significant effect of motivation on student engagement is in line with previous studies (Ben-Eliyahu et al., 2018; Fredricks et al., 2016; Gibbs & Poskitt, 2010; Jacobi, 2018; King & Datu, 2017; Nguyen & Van Nguyen, 2019; Soric et al., 2017; Stoen Utvær & Haugan, 2016; Zepke & Leach, 2010). That means participants of this study view themselves as motivated both intrinsically and extrinsically to engage in online learning. At the same time, the positive effect of university support on learner engagement corresponds with some past studies (Amoozegar et al., 2017; Zepke et al., 2012; Zepke & Leach, 2010), which argued that institutional support, both emotional and materially, is vital to boost student engagement.

Furthermore, the variable personal innovativeness in this study shows a meaningful effect on student engagement but not on student-material interaction. It is an appealing finding as some previous studies (Bervell et al., 2020; Owusu-Agyeman & Larbi-Siaw, 2018) found the significant influence of personal innovativeness on content interaction contrary to this study which indicates no significant effect. However, this study found the direct and essential impact of personal innovativeness on learner engagement of international students. Future studies should verify this finding with more samples and different contexts.

The implication of university support influence on student engagement is based on the social-psychological point of view. This viewpoint contributes to interpreting the experience of international students in dealing with new situations as international students experience an additional complex challenge due to new policies from local governments that affect the learning system and social life routines. For example, the study by Rahman & Lin (2020) reported the psychological well-being of new Indonesian students studying in Taiwan from the social, educational, and cultural dimensions. The main findings show that preparation and social support from the surroundings are needed to reduce the possibility of psychological problems such as stress and disengagement faced by international students studying in a foreign country.

Meanwhile, the motivational effect on student engagement implies that it might be caused by the fact that most participants were from African counties and few from other Asian developing countries where educational facilities and resources are inadequate compared to Indonesian universities. Therefore, the educational facilities, life status, and family background might motivate international students to engage in online learning. This argument is supported by the qualitative findings of the study by S. Lee (2017) conducted in the United States, which found the vital role of self-determination of international students in their academic activities.

Previous literature (Gibbs & Poskitt, 2010; Groves et al., 2015; Kuo, 2014; Zepke et al., 2010) shows the potential influence of three kinds of learning interactions: instructor-learner, learner-contents, and learner-learner on learning engagement and satisfaction. Conversely, the current study indicates no such significant effects. However, the present findings only indicate the considerable influence of instructor interactivity on student-material interaction, which positively affected student-student interactions. More research needs to be done to explore the effects of the three interactions on the learning engagement of international students in Indonesia and other Asian countries. Most previous studies that showed positive effects of such interactions on student engagement were conducted in different cultural contexts. The cross-cultural differences in academic experiences, including academic interactions, are reported by the recent study of Chen & Zhu (2020).

The study provides a hint about the role of the self-regulation factor on interaction with learning materials in which there is a significant influence. However, it indicates no significant direct effect of self-regulation on student engagement; meanwhile, student motivation influences self-regulation learning. More studies are needed to verify this since previous literature suggests the close association between self-regulation and engagement (Fredricks et al., 2004; Shea & Bidjerano, 2010), contrary to the current study's findings.

Finally, increasing student engagement in educational institutions is one of the efforts that educators and stakeholders should make to reduce problems to students in general and international students specifically. Issues such as low academic achievement, increased learning boredom, and increased dropout cases from colleges are caused by students' disengagement in educational activities (Fredricks et al., 2016). Although some students are well engaged in the teaching and learning activities, some are not engaged by being apathetic, casual chatting, not being excited, not focusing, or even sleeping during learning activities (Appleton et al., 2008). Thus, learner engagement in an online classroom is critical because students who feel unmotivated, bored, and uninvolved make them detached from the learning process's academic and non-academic aspects (Appleton et al., 2008; Fredricks, 2011).

CONCLUSION, LIMITATIONS, AND SUGGESTIONS

This study explored factors that can influence international students in Indonesian universities to engage well in online learning during the new normal after the pandemic. Eight variables were modeled together based on the structural equation modeling technique to determine their causal-effect relationships and test formulated hypotheses. The study results indicate that three variables, namely motivation, personal innovativeness in IT, and University (institutional) support were the best predictors of international students' engagement in online learning. While instructor interactivity, student-student interactions, self-regulated learning, and student-material interaction had no significant effects on international students' engagement. Moreover, the study results culminate the model, which explains the 62.8% variance of online learning engagement, suggesting that modeling student motivation, personal innovativeness, and institutional support variables can provide a good explanation of online learning and promote engagement for international students.

This study has some limitations that need to be considered for future replication of findings. First, the sampling technique was based on the non-probabilistic method in which not all international students had an equal chance of participation. Additionally, the sample used was small compared to the total population (more than a thousand) of international students studying in Indonesia amid the pandemic. Hence, the generalizability should be with caution. Nonetheless, the data sample established the reliability and validity of the proposed SEM model. Furthermore, the study's primary aim was to verify the proposed hypotheses in which more than half of the proposed hypotheses were satisfied. That means the model can be replicated in future studies with different contexts.

Moreover, the study didn't hypothesize the relationships between university support and motivation variables and instructor interactivity and motivation. Future studies can consider those essential relationships and additional variables such as self-efficacy and family support to explore their effects on online learning engagement. Lastly, more longitudinal research on online learning in international students in Indonesia is needed to verify the reliability of the current findings, whose study is based on a cross-sectional approach.

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