Full research paper

TECHNOSTRESS AND CONTINUANCE INTENTION OF ONLINE LEARNING IN HIGHER EDUCATION: EVIDENCE FROM INDONESIA

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ABSTRACT

As a developing country, Indonesia faces many obstacles in implementing online learning due to the lack of infrastructure and technical skills. The mandated online learning policy during the spread of the covid-19 virus became a turning point and made massive use. However, the online learning policy raised unforeseen issues such as stress, especially among students. This study focuses on the continuance intention of online learning among college students in Indonesia. The person-environment fit theory serves as a theoretical anchor, with technostress being examined as a predictor. This research uses an online questionnaire to reach 466 college students as research participants. We used partial least square structural equation modeling (PLS-SEM) to examine the research model. The result shows that three types of technostress (techno-overload, techno-invasion, and techno-uncertainty) are confirmed to have a significant negative effect on the continuance intention of online learning. Meanwhile, the other two (techno-complexity and techno-insecurity) do not affect online learning continuance intention. The current study contributes to the literature regarding the technostress and continuance intention of online learning topics, especially in developing countries such as Indonesia. Furthermore, the research provides valuable insight for policymakers and university administrators, enabling them to formulate effective policies for mandated online learning.

KEYWORDS

College student, continuance intention, online learning, technostress

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Highlights

- *The continuance intention of online learning in developing countries has become questioned due to raised stress among students.*
- *Technostress consists of five types (techno-overload, techno-invasion, techno-complexity, techno-insecurity, techno-uncertainty).*
- *Technostress plays a role in reducing the continuance intention of online learning among college students.*
- *Due to the many advantages of online learning, the stakeholders (e.g., government and university) should consider taking the right policies to reduce the negative effect of online learning implementation.*

INTRODUCTION

Online learning is becoming popular among developed countries. Many universities have invested a lot of money to implement technology in learning activities, such as developing a learning management system (LMS) (Ashrafi et al., 2022; Chow and Shi, 2014). However, online learning implementation faces many obstacles in developing countries, such as the lack of infrastructure and technical skills of academicians (Anggraeni and Sole, 2018; Chaeruman, 2018; Kaunang and Usagawa, 2017; Kuntoro and Al-Hawamdeh, 2003; Lestariyanti, 2020; Pratama and Arief, 2019; Rafsanjani et al., 2022). In addition, adopting online learning in developing countries is becoming voluntary and limited due to a lack of resources and government support (Acharya and Lee, 2018; Boateng et al., 2016; Tagoe, 2012).

Although there are many challenges of online learning adoption in a developing country, the spread of the covid-19 is becoming a turning point in the learning activities format. Since the spread of the covid-19 has become a pandemic worldwide, all educational institutions in Indonesia have been forced to

adjust learning activities to distance learning or online learning using a learning management system (LMS).

The online learning policy has been taken against the spread of the covid-19 virus. However, the obstacles and issues arising from the online learning policy lead to the question of whether online learning activities can continue to be carried out after the covid-19 pandemic is handled. The surveys in Indonesia show that 66% and 87% of students felt unhappy with the online learning policy and wanted face-to-face schools, respectively (Karana, 2020; Kemenpppa, 2020; Unicef, 2020). Another survey shows that most students look forward to returning to school (Handarini and Wulandari, 2020). In addition, regarding the online education context, the continuance usage behaviour has become the main attention of scholars (Panisoara et al., 2020). Although online learning is starting to become popular, the continuance intention of online learning in developing countries such as Indonesia is still in question.

The adoption of technology in learning activities has several benefits. For instance, the technology enables learning activities conducted without the attendance of students and instructors in the school (Al-Samarraie et al., 2018), offers flexibility (Al Rawashdeh et al., 2021; Thepwongsa et al., 2021), enhances collaboration (Alsabawy et al., 2016), and reduces student cost (Al Rawashdeh et al., 2021). However, the shifting of learning activities using online learning also has a negative impact, such as developed stress for teachers and students (Chou and Chou, 2021; Fawaz and Samaha, 2021; Mheidly et al., 2020; Sokal et al., 2020; Truzoli et al., 2021). The stress that arises from the inability to cope with the use of technology is called technostress.

According to the person-environment fit theory (PE fit theory), stress is raised from a poor fit between individual abilities and environmental demands (Chou and Chou, 2021; Pasca, 2014; Qi, 2019). As the close relationship between online learning and technology, technological characteristics should be considered in weighing the poor fit (Califf and Brooks, 2020; Chou and Chou, 2021; Qi, 2019). The current study explores the predictors of the continuance intention toward online learning and utilizes the PE fit theory as a theoretical anchor. Furthermore, previous studies also claimed that continuance usage is more important than LMS acceptance (Ashrafi et al., 2022; Lee, 2010).

The current study provides four main contributions. First, most studies regarding technostress and continuance intention of online learning have been conducted in developed countries such as Taiwan (Chou and Chou, 2021), the US (Califf and Brooks, 2020), South Korea (Joo et al., 2016), China (Li and Wang, 2021), Hong Kong (Qi, 2019), Turkey (Özgür, 2020) technological pedagogical content knowledge (TPACK, Italy (Truzoli et al., 2021) and Spain (Penado Abilleira et al., 2021). However, the topics have less attention from scholars in developing countries. Therefore, the current study will extend the knowledge about the topics among developing countries. Second, most of the previous studies discussed the topics from the teachers' perspective (Chou and Chou, 2021; Jena, 2015; Sokal et al., 2020; Truzoli et al., 2021; Wang and Li, 2019), and the current study captures the topics from the students' perspective. Third, limited study regarding continuance intention considers emotional factors as determinants (Kim et al., 2007; Panisoara et al., 2020). Thus, this study extends the understanding of the topic from different perspectives. Fourth, this study provides a scientific understanding for policymakers in the developing country to consider the right policy regarding online learning during the covid-19 pandemic.

THEORETICAL FRAMEWORK AND HYPOTHESES

Scholars have highlighted continuance intention for many years. The term continuance intention also refers to a behaviour set, including continuance and routinization following the first acceptance (Rahman et al., 2017). Furthermore, continuance intention is becoming a subject of theoretical development (Rahman et al., 2017), such as information system continuance (Amoroso and Chen, 2017; Han et al., 2018) and post-adoption usage (Jia et al., 2017; Ong and Lin, 2016). Therefore, continuance intention to use educational technology refers to post-adoption behaviour and intention to continue using technology in teaching and learning activities (Limayem and Cheung, 2011; Wang et al., 2019).

Many factors predict continuance intention to use educational technology. Most of the scholars explored the continuance intention of technology using the technology acceptance model (TAM) (Han et al., 2018; Wang et al., 2019), expectation-confirmation model (ECM) (Ashrafi et al., 2022; Chow and Shi, 2014; Lee, 2010), and information system continuance/success model (Cheng, 2014; Franque et al., 2021; Jia et al., 2017) as a theoretical anchor. However, since mandated online learning due to the covid-19 pandemic, stress has become an unforeseen issue in developing countries. The stress rises due to the inability to adapt to the new technology (Chou and Chou, 2021; Fawaz and Samaha, 2021; Mheidly et al., 2020; Sokal et al., 2020; Truzoli et al., 2021). This situation is known as technostress. Therefore, exploring the predictors of continuance intention to use online learning that fits the situation is necessary. In addition, there is limited study regarding the continuance intention of online learning that considers emotional factors as determinants (Kim et al., 2007; Panisoara et al., 2020).

The current study uses the person-environment fit theory (PE fit theory) as a theoretical anchor. We postulate that PE fit theory fits with the current situation. The mandated online learning led to teacher and student stress due to the inability to deal with the new learning format (online learning), especially in developing countries, whereby online learning was less popular before the Covid-19 pandemic. During online learning during the covid-19 pandemic, teachers and students have been forced to adjust their habits from face-to-face to fully online learning. Teachers and students also have to adapt to the changes in the syllabus, interactions between teacher-student and student-student, and increased course workload. As revealed by the previous studies, the lack of adapting to distance learning raised anxiety, a stress symptom.

According to PE fit theory, stress is raised from a poor fit between individual abilities and environmental demands (Chou and Chou, 2021; Pasca, 2014; Qi, 2019). In addition, it is necessary to consider technological characteristics in weighing the poor fit (Califf and Brooks, 2020; Chou and

Chou, 2021; Qi, 2019). The technostress includes five types: techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty (Califf and Brooks, 2020; Tarafdar et al., 2007; Upadhyaya and Vrinda, 2021).

The current study used the terminology of the five technostress based on previous studies (Califf and Brooks, 2020; Tarafdar et al., 2007; Upadhyaya and Vrinda, 2021). Techno-overload is when technology forces users to work faster and longer than usual. Techno-invasion describes as a situation whereby technology forces users to work beyond office hours and blurs their work-related and personal lives. Techno-complexity refers to the situation where the technology makes users feel inadequate skills. Techno-insecurity is a stressful situation where the technology makes users feel threatened about getting fired due to the new technology replacement or to other people with better skills and knowledge. Techno-uncertainty refers to the rapid changes and upgrades of technology that create uncertainty for users. The users have to keep learning about new technology constantly.

Other studies show that the continuance intention of online instruction is closely related to the technostress (Chou and Chou, 2021; Panisoara et al., 2020). As explained previously, there are many obstacles to implementing online learning, especially in developing countries, such as a lack of infrastructure, technical skills, resources (hardware), and government support. These obstacles developed anxiety and tension among teachers and students, leading to stress (Joo et al., 2016; Rafsanjani et al., 2023). During the covid-19 pandemic, all the teaching and learning activities were switched to online learning. On the one hand, this situation has forced all teachers and students to adapt and learn to keep up with the new technology. On the other hand, they must learn the subject or the material simultaneously. This situation is prone to increased teacher and student stress levels (Panisoara et al., 2020).

The scholars have also revealed that technostress has negative effects on personal life (e.g., depression, social or relationship problems), as well as professional life (e.g., poor job performance, reduced job satisfaction, and organizational commitment) (Panisoara et al., 2020; Salo et al., 2019). The negative effects of technostress due to mandated online learning will lead to poor performance and satisfaction. Accordingly, we hypothesized that technostress could be a factor that prevents the academicians, such as students, from continuing to use online learning, especially when all the educational institutions return to normal activities.

H1. Techno-overload negatively affects the continuance intention of online learning

H2. Techno-invasion negatively affects the continuance intention of online learning

H3. Techno-complexity negatively affects the continuance intention of online learning

H4. Techno-insecurity negatively affects the continuance intention of online learning

H5. Techno-uncertainty negatively affects the continuance intention of online learning

Current study

The current study explores the predictor of continuance intention of online learning in a developing country like Indonesia. Online learning faces many challenges in Indonesia due to the lack of infrastructure and the technical skills of academicians. The challenges of online learning implementation promote unforeseen issues such as stress, especially among students. Therefore, we use the technostress as a starting point to explore the predictors. According to the literature review, technostress consists of five types (techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty).

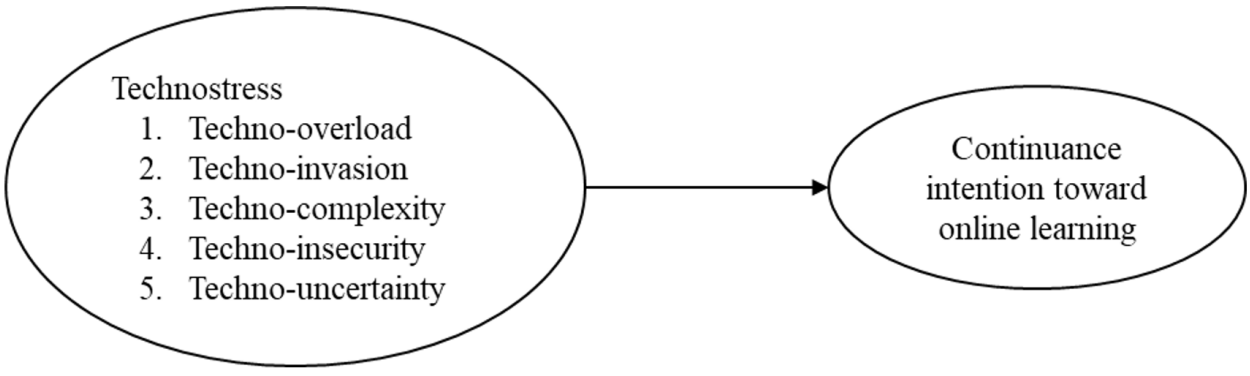

Figure 1: Conceptual model

METHOD

Participants

This study used an online questionnaire to reach the participants. The questionnaire was distributed by email directly to the college students and by networks of educators (lecturer and student association). We explained clearly the research objectives, the significance of the study, and the variables to be investigated on the online questionnaire homepage. The survey was conducted from April until June 2022, while all the universities in Indonesia still conducted an online learning policy. To be eligible for the study, the participants must be college students and take online learning for at least one semester due to the covid-19 pandemic. Four hundred eighty-seven students enrolled in the survey, and 466 were considered valid. The respondents' characteristics of this study are presented in Table 1.

Characteristics		size	%
Gender	Female	338	72.53%
	Male	128	27.47%
Academic Standing	1st-year student	164	35.19%
	2nd-year student	153	32.83%
	3rd-year student	118	25.32%
	4th-year student	31	6.65%
Discipline	Economics, business, management & accounting	157	33.69%
	Law	48	10.30%
	Engineering	56	12.02%
	Arts & Humanities	43	9.23%
	Education	89	19.10%
	Others	73	15.67%

Table 1: Respondents' characteristics (*N* = 466)

Instrument

This study measured the variables using the items from previous studies. We also adjusted and reworded the items to fit the higher education context. We measured the technostress variable through five types: techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty. We adopted the items developed by Tarafdar et al. (2007), Tarafdar et al. (2010), and Li and Wang (2021). For the continuance intention of the online learning variable, we adopted the items developed by Bhattacherjee (2001), Ashrafi et al. (2022), and Franque et al. (2021).

Data analysis

This study used structural equation modelling (SEM) with partial least squares as an estimation technique in SmartPLS software to analyze the research data. We performed three steps to examine the research model (model specification, outer model evaluation, and inner model evaluation) (Hair et al., 2014). First, we specify the research model based on the literature (figure 1). Second, we evaluate the outer model through confirmatory factor analysis (CFA), including the validity and reliability of the measurement model. Third, we evaluate the inner model through the coefficient of determination (R^2), cross-validated redundancy (Q^2), path coefficients, and the effect size (f^2).

Before conducting data analysis using multiple steps of PLS, we perform data cleaning first. Out of the 487 research participants, 480 met the eligibility requirements; the participants must be college students and take online learning for at least one semester due to the covid-19 pandemic. Among the remaining 480 participants, we identified missing values in the dataset. We dropped the research participant(s) with missing values. As a result, 466 data that met the requirements for further analysis remained.

RESULTS

Outer model evaluation

The first procedure of data analysis is outer model evaluation. We evaluate the outer model through convergent validity (loading factor and AVE), discriminant validity, and composite reliability. The result (table 2) informs that the convergent validity of all constructs is established. It indicates that all items' loading factor is higher than 0.70, and the AVE of all constructs is higher than 0.5 (Hair et al., 2017). The composite reliability of all constructs was upper than 0.70. In addition, we also performed cross-loading through Fornell and Larcker method (1981) to ensure the discriminant validity. The result (table 3) illustrates that the discriminant validity of this study was established.

Inner model evaluation

After the outer model was established, we performed the inner model evaluation through coefficient determination (R^2), cross-validated redundancy (Q^2), path coefficients, and the effect size (f^2). The result (table 4) remarks that the R^2 value is 0.766, indicating that the four technostress types have a substantial predictive power (Hair et al., 2017; Hair et al., 2014). This result also indicates that 76.6 percent of continuance intention toward the online learning variant can be explained by the four types of technostress (techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty). The Q^2 calculation remarks that four types of technostress have a value of 0.643, which indicates the exogenous constructs (four types of technostress) have a large predictive relevance on endogenous constructs (continuance intention of online learning) (Hair et al., 2017). Furthermore, the result of the f^2 calculation shows that techno-overload, techno-invasion, and techno-uncertainty have a medium to large effect on the continuance intention of online learning. Meanwhile, techno-complexity and techno-insecurity have a small effect (Cohen, 1988; Hair et al., 2014).

Constructs	Item	Loading factor	AVE	Composite reliability
Techno-overload	Ov1	0.829	0.687	0.916
	Ov2	0.744		
	Ov3	0.926		
	Ov4	0.876		
	Ov5	0.754		
Techno-invasion	Inv1	0.811	0.635	0.839
	Inv2	0.768		
	Inv3	0.811		
Techno-complexity	Com1	0.815	0.784	0.916
	Com2	0.919		
	Com3	0.918		
Techno-insecurity	Ins1	0.887	0.770	0.930
	Ins2	0.874		
	Ins3	0.853		
	Ins4	0.895		
Techno-uncertainty	Unc1	0.788	0.635	0.839
	Unc2	0.763		
	Unc3	0.838		
Continuance intention	CI1	0.924	0.844	0.942
	CI2	0,938		
	CI3	0,893		

Table 2: Loading factor, AVE, and composite reliability

	TO	TInv	TC	TIns	TU	CI
TO	0.829					
TInv	0.695	0.897				
TC	0.705	0.714	0.885			
TIns	0.724	0.639	0.745	0.877		
TU	0.569	0.638	0.520	0.528	0.897	
CI	0.718	0.790	0.608	0.653	0.762	0.919

Note: TO = Techno-overload; TInv = Techno-invasion; TC = Techno-complexity; Tins = Techno-insecurity; TU = Techno-uncertainty; CI = Continuance intention.

Table 3: Discriminant validity

Relationship	R^2	Q^2	f^2
Techno-overload → Continuance intention	0.766	0.643	0.274
Techno-invasion → Continuance intention			0.262
Techno-complexity → Continuance intention			0.031
Techno-insecurity → Continuance intention			0.026
Techno-uncertainty → Continuance intention			0.583

Table 4: Inner model evaluation

Last, table 5 shows the hypotheses testing. The result shows that this study rejects the null hypotheses of H1, H2, and H5. This means techno-overload, techno-invasion, and techno-uncertainty significantly affect the continuance intention of online learning. On the other hand, this study fails to reject the null hypotheses of H3 and H4 on a 10% significance level, which means techno-complexity and techno-insecurity have no significant effect on the continuance intention of online learning.

Hyphotesis	Relationship	*β*-value	S.E.	*p*-value	Remark
H1	Techno-overload → Continuance intention	-0.361	0.059	0.006	Null hypothesis rejected
H2	Techno-invasion → Continuance intention	-0.325	0.056	0.037	Null hypothesis rejected
H3	Techno-complexity → Continuance intention	-0.076	0.098	0.495	Fail to reject null hypothesis
H4	Techno-insecurity → Continuance intention	-0.041	0.109	0.369	Fail to reject null hypothesis
H5	Techno-uncertainty → Continuance intention	-0.607	0.045	< 0.001	Null hypothesis rejected

Table 5: Path coefficients and hypotheses testing

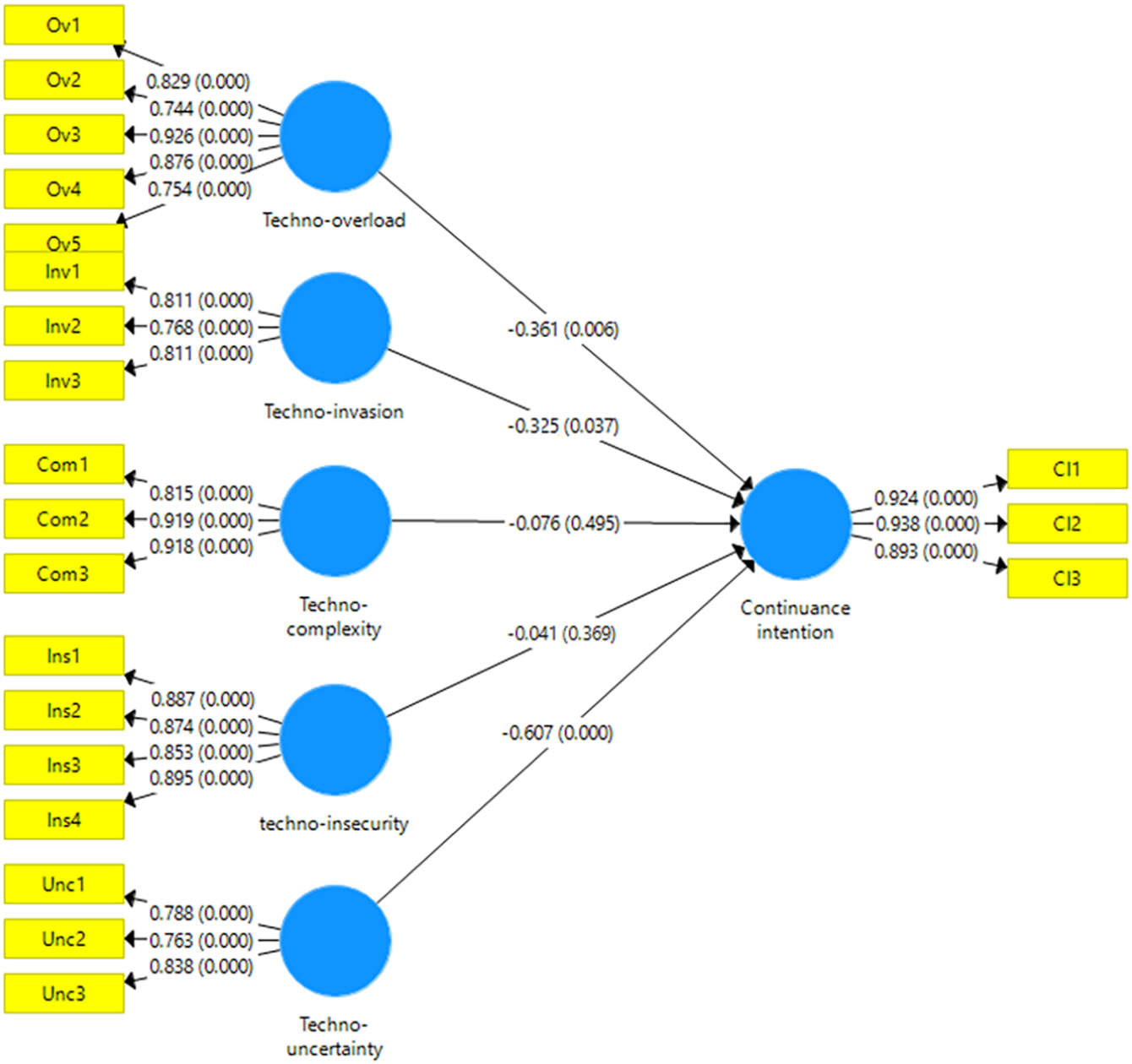

Figure 2: The structural model with standardized path coefficient

DISCUSSION

The research finding shows that only three of five technostress (techno-overload, techno invasion, and techno-uncertainty) have significant negative effects on the continuance intention of online learning. Meanwhile, the other two technostress (techno-complexity and techno-insecurity) have no effect on the continuance of online learning. Despite some hypotheses are rejected, our research model has large predictive power. This is evidenced by the R^2 calculation that remarks 0.766, that's means 76.6 percent of the online learning continuance intention can be explained by the exogenous constructs (technostress). As predicted, the higher students' technostress, the lower the continuance intention of online learning. This study strengthened the previous studies that revealed that technostress and continuance intention of online learning has a negative relationship (Chou and Chou, 2021; Joo et al., 2016; Panisoara et al., 2020). Furthermore, the current finding is also in line with the PE fit theory as a theoretical anchor of the study. PE fit theory refers to the personal ability to deal with environmental demands (Chou and Chou, 2021; Pasca, 2014; Qi, 2019). A good fit leads to positive outcomes and well-being, while a poor fit will raise stress and ill-being.

The current finding shows that the mandated online learning during the covid-19 pandemic has raised students' stress. Most students reported a lack of ability to deal with online learning. Students need to deal with new and unfamiliar technology in online learning, such as learning management systems (LMS) and video conferences. The students reported some obstacles, such as hardware and internet connection problems, experiencing learning difficulties in adapting to the new syllabus, class interaction, and finding a conducive space. Some students also reported feeling the course workload has increased during online learning, and they have to learn more independently than face-to-face learning. In addition, the students have to deal with a tight schedule regarding the time of task completion and submission. These situations could trigger stress (technostress) and reduce the continuance intention of online learning.

In more detail, the first hypothesis remarks on the relationship between techno-overload and the continuance intention of online learning. Techno-overload refers to when the technology forces the users to work faster and longer than usual. The situation fits with the students' experience. They feel the course workload has increased during online learning compared to offline learning. Furthermore, the students also have to face a tight task completion and submission schedule. Hence, using technology during online learning has led students to overload activities. The students must work faster and longer to deal with online learning activities. This finding is in line with the previous studies. The use of technology contributes to longer working days. (Califf and Brooks, 2020; Ragu-Nathan et al., 2008).

The second hypothesis examines the relationship between techno-invasion and the continuance intention of online learning. The research participants reported spending much time independently doing assignments or understanding a particular topic during online learning. Sometimes, to chase deadlines, the students have to sacrifice their weekends. This situation fits with techno-invasion, whereby the technology leads the users to work beyond office hours and blurs their work-related and personal lives. Hence, this finding strengthens the previous finding that technology was interfering with the work-life balance (Califf and Brooks, 2020; Johari et al., 2018).

Regarding the third unconfirmed hypothesis, the link between techno-complexity and continuance intention of online learning. This finding was contrary to the previous findings that the complexity of technology makes the user feel inadequate skills and increases the technostress (Califf and Brooks, 2020; Tarafdar et al., 2007; Upadhyaya and Vrinda, 2021). The following reasons could explain this finding. Some students reported that they have no problem with the complexity of technology during online learning. The students reported they must learn harder to utilize and maximize the new technology at the beginning of online learning. Still, they quickly adapted after the third and fourth weeks. In addition, the complexity of online learning technology makes them interesting and challenging. Hence, we can assume that the students have adequate skills to learn and adapt to the technology during mandated online learning.

A similar situation occurred with the fourth hypothesis. This study failed to confirm the relationship between techno-insecurity and the continuance intention of online learning. This finding contradicts the previous study that revealed that users felt threatened and feared being replaced by someone with better technical skills and knowledge (Califf and Brooks, 2020; Tarafdar et al., 2007; Upadhyaya and Vrinda, 2021). The logical explanation was reported by the students as research participants. The students reported cooperating on utilizing the online learning technology during online learning. Students with better skills and knowledge will teach and explain how to use the technology, such as learning management systems (LMS) features. Therefore, we assume the students do not feel threatened by other students with better technological skills.

Last, techno-uncertainty. The students sometimes reported being confused by the rapid changes and upgrades of online learning technology. For instance, at the beginning of mandated online learning, around March 2020, the features of LMS were quite simple. However, many features were added to LMS a couple of months later. This situation forced the students to keep learning about the new features constantly. Therefore, we assume the students are concerned about quick changes in online learning technology. This finding was in line with the previous result that rapid technological changes create user uncertainty and stress (Tarafdar et al., 2007; Upadhyaya and Vrinda, 2021).

CONCLUSION AND IMPLICATION

Technostress has been a significant negative predictor of continuance intention toward online learning. However, only three of five technostress types fit the current finding (techno-overload, techno-invasion, and techno-uncertainty). The students experienced a congruous situation with three technostress types that play as a trigger for technostress. Meanwhile, the other types of technostress (techno-complexity and techno-insecurity) were unfit for the situation reported by students. The students have no problem with the complexity of

online learning technology. In addition, the students also said that they felt no worry about the difference in ability regarding utilizing the online learning technology.

The current finding has theoretical and practical contributions. First, we extend the knowledge of continuance intention toward online learning from another perspective, PE fit theory, rather than the popular model such as the technology acceptance model (TAM), expectation confirmation model (ECM), and information success model. In addition, this study also enriches the understanding of continuance intention that considers emotional factors as determinants, the technostress.

Second, this study also fills a gap about the continuance intention and technostress topic, whereby the previous studies were mostly conducted in developed countries. Compared to the developed countries where online learning is more popular, the current study revealed that the problem that arises from mandated online learning in developing countries is the lack of adaptation regarding the use of technology. Students unfamiliar with online learning technology need time to understand the technology. The situation forced the students to spend much time mastering online learning technology. Then, the students feel the online learning activities increase the course's workload, interfering with their personal lives and forcing them to keep learning continuously due to the quick changes in online learning technology. As a result, the situation triggers technostress and reduces the continuance intention toward online learning.

Third, this study extends the knowledge about technostress and continuance intention from the student's perspective. The previous study revealed that techno-insecurity becomes a problem from the teacher's perspective. The teachers feel threatened and fear being replaced by someone with better skills and knowledge related to technology (Califf and Brooks, 2020). But, from the student's perspective, the peers with better technological knowledge could be tutors rather than competitors. In addition, from the teacher's perspective, techno-uncertainty is not a trigger of technostress because they acclimated to the uncertain working environment (Califf and Brooks, 2020). On the contrary, the rapid changes in online learning technology (techno-uncertainty) for the students are becoming a concern that leads to technostress.

Last, the current finding provides a basic understanding for policymakers in developing countries to consider another policy following the mandated online learning to reduce the negative effect. The current study found that mandated online learning raised unforeseen issues, such as the technostress. Technostress will reduce the continuance intention toward online learning. As highlighted by scholars, online learning has many advantages (Cojocariu et al., 2014; Dhawan, 2020; Singh and Thurman, 2019). Therefore, we recommend that policymakers such as government and university administrators take the policy to reduce the negative effect of mandated online learning. The government should provide adequate infrastructure to run online learning well. The university should adjust the syllabus to reduce the course workload; hence, the students have adequate time to complete the academic work and not interfere with their personal lives. In addition, the universities could provide a supporting team, such as IT experts, to help the students face problems during online learning. Furthermore, universities may conduct a survey to identify high-risk students and give free counselling to reduce the technostress.

In conclusion, the current study has revealed that technostress reduces the continuance intention of online learning among college students, especially in developing countries such as Indonesia. This finding should concern the government and university administrators because online learning has many advantages. We should increase the continuance intention of online learning among Indonesian college students to take advantage of online learning. The closure of educational institutions due to the covid-19 pandemic should become the turning point to increasing online learning and making it popular and familiar, especially in developing countries.

LIMITATION

The current study has several limitations. First, we are using unbalanced gender participants. The current study was dominated by females (72.53%) than males (27.47%) as research participants. As highlighted by scholars, gender is closely related to life and job satisfaction (Joshanloo and Jovanović, 2020; Jovanović, 2017; Okpara et al., 2005). As we know, the construct of satisfaction was closely related to emotional factors such as stress. Second, the previous studies also highlighted that mental illness symptoms (e.g., anxiety, stress, and depression) increased after college entry (Andrews and Wilding, 2004), and the peak appeared between 18 and 25 ages (Brown, 2016). Unfortunately, the current study did not control the two variables (gender and age). Therefore, we are concerned that gender and age could interfere with the current result.

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