Adoption of Information Technology and Acceptance of Learning Management Systems During Pandemic Covid-19 in Indonesia

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Abstract

The COVID-19 pandemic that emerged in 2019, in wuhan, Hubei province, China has spread almost all over the world, including Indonesia. From the virus, the government has issued public policies, which include social distancing, social isolation, and independent impacts. Various sectors must implement the policy. Several companies in Indonesia must implement work from home for all their employees, including educational institutions in Indonesia, starting from the Playgroup level, PAUD, Kindergarten, Elementary, Junior High, State Senior High School or private high school. Vocational High Schools and Colleges also implement an online learning process from home. Information Technology provides solutions for the education system in Indonesia in these difficult times, so that the learning process can continue. In previous studies, an exploration of the Unified Theory of Acceptance and Use of Technology (UTAUT) model has been carried out with social isolation variables, and the moderating variable of corona fear towards Behavioral Intentions of Learning Management System and Behavior of Use of Learning Management Systems among high school students or Vocational and state university students. Researchers try to apply this model in developing countries such as Indonesia. Bootstrap method with 100 subsamples to determine the significance value for each path coefficient. The responses received by the researchers were 101 respondents. Data analysis using Smart Partial Least Square (PLS) and Structural Equation Modeling (SEM). The findings show a positive relationship between Performance Expectations (PE), Effort Expectations (EE), Social Influence (SI), and Social Isolation on LMS Behavioral Intentions and, also between LMS Behavioral Intentions and Behavior. In addition, the results of the moderating analysis show that the fear of Corona only moderates the relationship between Performance Expectations and Social Influences with LMS Behavioral Intentions. The findings imply the need to increase the behavioral intentions of LMS users among college students or university students.

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Introduction

COVID-19 emerged in 2019, in Wuhan, Hubei Province, China. This epidemic spread very quickly throughout China and even the whole world. According to a report by the World Health Organization (2020), more than 130 countries and territories have confirmed the presence of the Corona virus as an emerging case in mid-March 2020. As a highly contagious disease has a relatively high mortality rate, this has caused increasing fear among the public (Ahorsu, et al., 2020), because fears about COVID-19 are based on contact with individuals who may be infected with the disease (Lin, 2020).

In response to the COVID-19 crisis, governments around the world are issuing public policies that include social distancing, isolation and quarantine (Anderson, et al., 2020), This of course has social and economic consequences and applies worldwide. While millions of people around the world are staying in their homes to prevent the spread of the Corona virus, their livelihoods have been hindered, and, in the case of students, their access to educational establishments has been blocked. However, when countries are isolated, advances in Information Technology shed light on the possibility of alternative learning. The quite dramatic change caused by the evolution of Information Technology in all aspects of life, especially considering its involvement, is very important to discuss higher education during the COVID-19 pandemic. Technology always helps improve the simplest tasks, such as the advancement of traditional learning processes.

A Technology that lies under the e-learning umbrella has allowed him to continue the learning process during the lockdown (Zwain, 2019). This technology is referred to as a Learning Management System (LMS). LMS is a web-based technology developed to improve the learning process through proper planning, implementation, and evaluation in educational institutions (Alias & Zainuddin, 2005). The use of LMS in the learning process helps facilitate e-learning because it provides educational materials without time or place constraints (Ain, Kaur, & Waheed, 2015), allows students and teachers to interact via the internet and facilitates the sharing of information related to courses and resources (Al-Busaidi & Al-Shihi, 2010; Lonn, et al., 2011). This indicates that the use of this technology during the COVID-19 pandemic is a necessity of the era to keep the learning process running. Some examples of LMS used in institutional education include Moodle, WebCT, Blackboard, and Desire2Learn (Iqbal, 2011; Waheed, et al., 2016). Hassanzadeh et al. (2012) revealed in his study that with the advent of information technology, the definition of higher education has changed. Therefore, the area of technology acceptance is seen by scholars as a mature area in the role of information systems in science (Venkatesh, et al., 2003). According to Teo (2011) technology acceptance is a person's willingness to adopt the use of technology to facilitate task execution based on the support it is designed to provide. Recently, the acceptance of e-learning systems and technologies is being investigated by researchers in different educational environments around the world, using different models based on different criteria (Decman, 2015; Raza, et al., 2020). Considering the context of the higher education sector, it is important to investigate the factors that lead to the acceptance of e-learning technology among students, as investing in an e-learning system requires a large investment in resources and infrastructure (Ma & Yuen, 2011).

Existing literature reveals that LMS acceptance among university students varies from country to country (Zwain, 2019), such as Arab universities in the Middle East region registered e-learning acceptance rates are still low (Matar et al., 2011). Meanwhile, the acceptance rate of e-learning systems is high registered in western countries (Decman, 2015).

This paper investigates the factors that influence LMS admissions from the perspective of students and/or students during the COVID-19 pandemic in Indonesia. To this end, UTAUT theory is considered a well-developed, updated, and relevant theory of technological acceptance by researchers, as it has been incorporated from existing recognized technology acceptance theories (Decman, 2015). The

reason for the development of the UTAUT model is to explore the unity of the information technology view (Venkatesh, et al., 2003). The model was later validated by Venkatesh et al. (2003) in a longitudinal study study, in which it was found that models accounted for 70 percent of variances in BI for using the technology and 50 percent about actual use. Therefore, this theory was chosen among other theories because it is more comprehensive, allowing for a higher explanatory power than the early theory used to learn the acceptance of technology.

Over the years, researchers have explored models through combining several factors to understand reception technologies relevant to the situational factors of the regions studied. Lin and Anol (2008) added online social support to understand its effect on the use of network information technology in Taiwan. Furthermore, Raza et al. (2019) studied the factors affecting the acceptance of mobile banking (M-banking) at the Islamic Bank of Pakistan using a modified integrated acceptance theory and technology usage model (UTAUT). In addition, Chao, (2019) aims to empirically test the factors that influence student and/or student BI against mobile learning through the addition of different factors such as perceived comfort, trust satisfaction, risk, and mobile self-efficacy. Taiwo and Downe (2013) and Dwivedi, et al. (2011) revealed, in their latest meta-analysis of the results of the UTAUT Study, that the construction is positively and significantly related to the existing literature but emphasized the lack of moderator investigation in some studies. Therefore, the expansion of this model through the incorporation of Social Factors and Corona Fears will help understand the user's behavior of technology acceptance intentions in light of the recent pandemic and its sub-use of sequential behavior.

The acceptance of e-learning systems using the UTAUT Model is adequate because it is the acceptance of the latest and most advanced technology. The theory of admission is widely recognized by scholars (Decman, 2015). The findings of the expanded model will prove useful for understanding LMS admissions among students, in this way, educational institutions will focus on Effective system implementation and investing in e-learning technology for good purposes. This research paper follows the introduction with a literature review, an ornate explanation of the theoretical background and hypothesis development that is to be tested. Later, the paper emphasizes the research methodologies used to measure variable impact, and the sampling and data collection methods used. Then, data analysis techniques and findings will be discussed. Finally, the paper concludes with the implications of the findings and the future direction of the study that follows the limitations of the study.

Theoretical Framework

Theoretical Background

This paper develops an integrated model through the expansion of the Unified Theory of Acceptance and Use of Technology (UTAUT) by adding the independent variable Social Isolation caused by the recent COVID-19 pandemic, and a moderating variable, Corona Fear, for the construction of a pre-existing model. Which includes Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI) and Facilitating Conditions (FC). The original UTAUT was introduced by Venkatesh et al. (2003). He reviewed eight existing theories to develop a unified model. These theories include Theory of Reasoned Action (TRA), Innovation Diffusion Theory (IDT), Social Cognitive Theory (SCT), Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), Model of PC Utilization (MPCU), motivational. Model (MM), and Combined TAM and TPB (C-TAM-TPB).

The integrated model allows academics to view and demonstrate the full picture of predictors of technology acceptance (Al-Imarah, Zwain, & Al-Hakim, 2013). Venkatesh et al. (2003) revealed that the integrated model predicts a 69 percent variance in the use of Behavioral Intention, which is higher than the previous model which only predicted 17 to 53 percent. Therefore, this model is a useful tool to investigate student acceptance of LMS during the COVID-19 pandemic. Raza et al. (2020) have applied the UTAUT model and extended it to assess the role of Social Isolation on LMS Behavioral Intentions and the moderating effect of pandemic-induced Corona Fear. Further research needs to be done to develop the UTAUT model by adding moderating and mediating variables in other developed and developing countries during the pandemic, to analyze what factors influence LMS acceptance and use of e-learning systems, to provide better learning materials. to students, or students in pursuit of

education. Thus, the authors use the model developed by Raza et al. (2020) to analyze what factors influence Information Technology Adoption and LMS Acceptance during the CVID-19 Pandemic in Indonesia.

Hypothesis Development

Performance Expectancy (PE) the level of an individual's perception of the usefulness of technology to perform different tasks is called Performance Expectancy (PE) (**Venkatesh, et al., 2003**; **Ain, et al., 2015**), and in the case of LMS acceptance evaluation among students, it is considered as a student's belief about the effectiveness of the system for learning (**Decman, 2015**). Therefore, based on the literature review, the following hypothesis was proposed by previous researchers (**Raza et al., 2020**):

H1: PE has a positive effect on BI LMS

Effort Expectancy (EE). Yoo et al. (2012), revealed that the most influential factor of the UTAUT model is Effort Expectancy (EE) which is considered an intrinsic element, because it is the amount of effort that individuals perceive to invest in using a technology, which is generally low due to the user-friendly nature of information technology (Decman, 2015). Therefore, based on the literature review, the following hypothesis was proposed by previous researchers (Raza et al., 2020):

H2: EE has a positive effect on BI LMS

Social Influence (SI). Social influence (SI) is a reflection of peer, instructor, and peer perceptions of technology on individual behavioral intentions in social environments (Venkatesh et al., 2003). When evaluating LMS acceptance, SI is the degree to which a student's social circle influences their LMS BI. Along with advances in information technology and the emergence of social networking sites, the focus of this factor has shifted from physical to virtual (Decman, 2015). Therefore, based on the literature review, the following hypothesis was proposed by previous researchers (Raza et al., 2020):

H3: SI has a positive effect on BI LMS

Facilitating Conditions (FC). Venkatesh et al. (2003) refers to Facilitating Conditions (FC) as the availability of adequate support and resources for the proper use of technology. In the context of the E-learning environment, FC focuses on the accessibility of technical and organizational infrastructure for the adoption and use of LMS. This includes training, technical support, and required infrastructure (Decman, 2015). Therefore, based on the literature review, the following hypotheses were proposed by previous researchers (Raza et al., 2020).

H4: FC has a positive effect on BI LMS

Social Isolation (SI). De Jong Gierveld, et al. (2016) define social isolation as an individual's absence or low number of meaningful ties with others, thus making them socially isolated. The COVID-19 pandemic has forced countries to practice social distancing, and drastically reduce social gatherings, through the implementation of social distancing as it is necessary to combat the spread of the Corona Virus. Due to the closure of classrooms, public markets and public places and the cancellation of activities and gatherings, social distancing reduces social contact between people in groups, leading to isolation around the world (Wilder-Smith & Freedman, 2020), Previous researchers (Raza et al., 2020) predict that socially isolated students will be positively stimulated to take online classes through the Learning Management System. Therefore, based on this assumption, the previous researcher (Raza et al., 2020) proposed this hypothesis and based on the literature review, the author also used the following hypothesis:

H5: Social isolation has a positive effect on BI LMS

Behavioral Intention (BI) from LMS. A person's intention to adopt the use of certain technologies to perform various tasks is called Behavioral Intention (BI) (Ain, Kaur, & Waheed, 2015). Ngai et al. (2007) define BI as the level of commitment that a person shows to engage in certain behaviors, which in the context of this paper is the level of commitment of students to accept the use of LMS to meet the objectives of his educational course. Therefore, based on the literature review, the following hypotheses were proposed by previous researchers (Raza et al., 2020).

H6: BI LMS has a positive effect on LMS Use Behavior

Medium Effects of Corona Fear. Mertens et al. (2020) defines fear as an adaptive emotion that mobilizes energy in individuals to deal with potential threats. Pakpour & Griffiths (2020) reveal that unforeseen and extraordinary situations such as a disease outbreak can cause fear among people, and therefore become one of the psychological aspects of the COVID-19 pandemic. This shows the need to know the effect on students, especially regarding the acceptance and use of LMS implemented by educational institutions, to continue the learning process. So, based on the literature review, the following hypotheses were proposed by previous researchers (Raza et al., 2020):

H7: Corona Fear Moderates Relationship between PE and BI LMS
H8: Corona Fear moderates the relationship between EE and BI LMS
H9: Corona Fear Moderates SI's Relationship with BI LMS
H10: Corona Fear moderates the relationship between FC and BI LMS
H11: Corona Fear moderates the relationship between Social Isolation and BI LMS

Research Methods

Data Collection and Instrumentation

The samples used in this study were students enrolled in private universities in Gresik and several state universities in Surabaya and Madura, East Java, as well as private universities in Bireuen Regency, Aceh and also high school students in the city of Gresik. For the development of the scale of data collection, items are adapted from existing literature. Items for measuring variables were adapted from Venkatesh et al. (2003) and Zwain (2019). The scale for measuring construction is based on a five-point Likert scale design and consists of a total of 34 items. Responses to the analysis were collected from students and/or students of High School or Vocational High School by spreading questionnaires online. Nonetheless, the exact size of the samples to be taken depends largely on the type of research being worked on. According to Raza and Hanif (2013), Comrey and Lee (2013), and Raza et al. (2020), 50 samples are considered bad, 300 are good, 500 are excellent and 1000 are being considered excellent samples with respect to factor analysis. However, we only managed to gather a total of 101 responses. The question instrument was then translated into Indonesian for the purpose of this study. The instrument grid is presented in Table 1.

Research Methodology

Since the original UTAUT model by Venkatesh et al. (2003) offer relevant factors to determine students' behavioral intentions towards LMS and their use behavior, then Raza et al. (2020) expand the UTAUT model by adding moderating variables. Therefore, to meet the objectives of this study, the UTAUT model which has been modified by (Raza, et al., 2020), is used as shown in Figure 1. Meanwhile, the following (Figure 2) is a structural model formed from the formulation of the problem.

Table 1. Questionnaire

| Items	Sub-items	Question
Performance Expectancy (X1)	X1.1	I find LMS useful for studies.
	X1.2	LMS allows me to accomplish class activities more quickly.
	X1.3	LMS increases learning productivity.
Effort Expectancy (X2)	X2.1	I live and work.
	X2.2	Learning how to use LMS is easy for me.
	X2.3	I find the system to be flexible to interact with.
Social Influence (X3)	X3.1	My peers who influence my behavior think that I should use LMS.
	X3.2	My friends who are important to me think that I should use LMS.
	X3.3	Instructors whose opinions that I value prefer that I should use LMS.
	X3.4	I use the system because of the proportion of classmates who use the system.
Facilitating Condition (X4)	X4.1	I have resources to use LMS
	X4.2	I have the knowledge to use LMS
	X4.3	A specific person (or group) is available to assist when difficulties arise with LMS
	X4.4	Using the system fits into my study styles.
Social Isolation (X5)	X5.1	I felt alone and friendless.
	X5.2	I felt isolated from other people.
	X5.3	I have someone to share my feelings with
	X5.4	I found it easy to get in touch with others when I needed others to felt they had to help me.
	X5.5	When with other people, I feel separate from them.
Corona Fear (M)	M1	I do not want to leave the house because of the risk of getting infected by COVID 19 pandemic
	M2	I am concerned that I may get sick from COVID-19 pandemic during the next 6 month.
	M3	I am feeling anxious about COVID-19 pandemic.
	M4	I am concerned that someone in my immediate family may get sick from COVID-19 pandemic during the next 6 months.
	M5	I am scared about getting infected by COVID-19 pandemic.
	M6	I see the possibility that Covid-19 pandemic will break out in the area where.
Behavioral Intention (Y)	Y1	I intend to continue using LMS.
	Y2	For my studies, I would use LMS.
	Y3	I will continue to use LMS on a regular basis.
	Y4	Because of the possibilities that LMS offers, I plan to approach my next course more effectively.
Use Behavior of LMS (Z)	Z1	I use LMS frequently during my academic period.
	Z2	I use many functions of LMS (e.g., discussion forum, chat session, messaging, download course contents, upload assignments, etc.
	Z3	I depend on LMS.
	Z4	Use of LMS by our university is a good idea.
	Z5	LMS makes learning more interesting for the students.
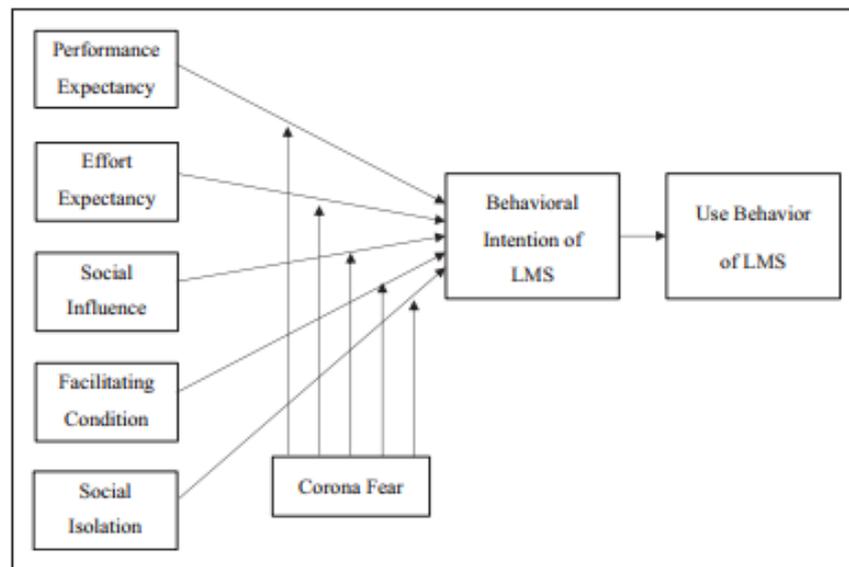
Figure 1. Conceptual Model (source: Raza, et al., 2020)
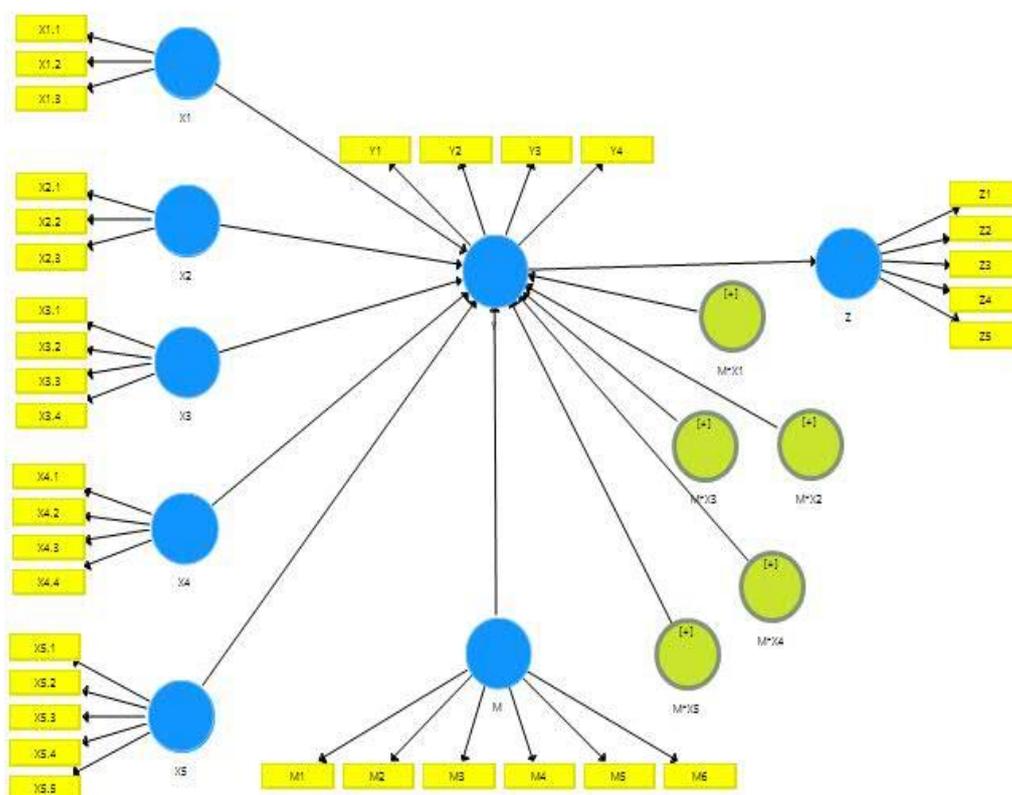
Figure 2. Model Construct with Smart PLS

Since the original UTAUT model by Venkatesh et al. (2003) offer relevant factors to determine students' behavioral intentions towards LMS and its use behavior, these factors were used to fulfill the objectives of this study. However, the model needs to be extended to explore LMS acceptance among college-enrolled students, during the COVID-19 pandemic. For this reason, social isolation was added as an independent variable, while Corona fear was included as a moderating variable (Raza, et al., 2020). Figure 3 below is the research stage.
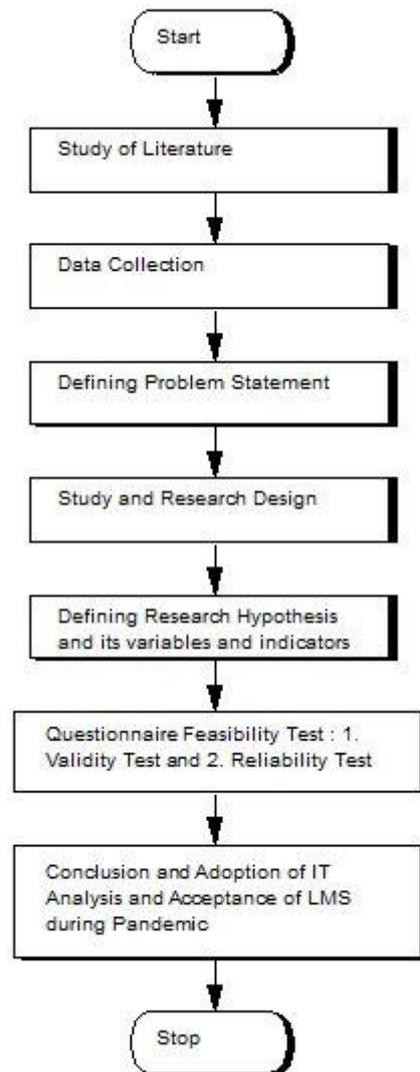
**Figure 3. Research Stages**

This section describes the research results and data analysis that has been collected through the distribution of questionnaires that the author conducted during May 2020 to March 2021. The author will analyze the data that has been collected in accordance with the main problems described at the beginning of the chapter. The results of data processing are information that will later show whether the formulated hypothesis can be accepted or not.

Results and Discussion

This section outlines the results of research and analysis of data that has been collected through the dissemination of questionnaires conducted during May 2020 to March 2021. In this study, modeling of the smallest partial square structural equation (PLS-SEM Technique) was applied to the data, using Smart PLS version 3.2.3 (Ringle, Wende, & Becker, 2015). The author will analyze the data that has been collected in accordance with the main problems described at the beginning of the chapter. The results of data processing are information that will later indicate whether the formulated hypothesis can be accepted or not.

Analysis of Respondent Characteristics

Respondent's Gender

The results of the analysis of the characteristics of respondents by gender can be shown in Figure 4. Based on Figure 4, it can be seen that the respondents are divided into two categories, namely men and women. From the data obtained from 101 respondents, the composition of respondents based on gender is 65 respondents are female and the remaining 36 are male as shown in Figure 4. The results shown in Figure 4 are the largest number of respondents are 65 women.

Figure 4. Respondent Data by Gender

Respondent's Age

The results of the analysis of the characteristics of respondents based on age can be shown in Figure 5. Based on Figure 5, it can be seen that respondents are divided into six categories, namely age less than and equal to 19 years, 20 years to 24 years, 25 years to 29 years, 30 years to 34 years, 35 years to 39 years and ages more than and the same with 40 years. From the data obtained from 101 respondents, the composition of respondents based on age was 31 people aged less than and equal to 19 years, 61 people aged 20-34 years, 3 people aged 25-29 years, 1 person aged 30-34 years, while the age of 35 - 39 years old only got 3 people and age more than and equal to 40 years got 2 people. The results shown in Figure 5 are dominated by the number of respondents aged 20-24 years who are young.
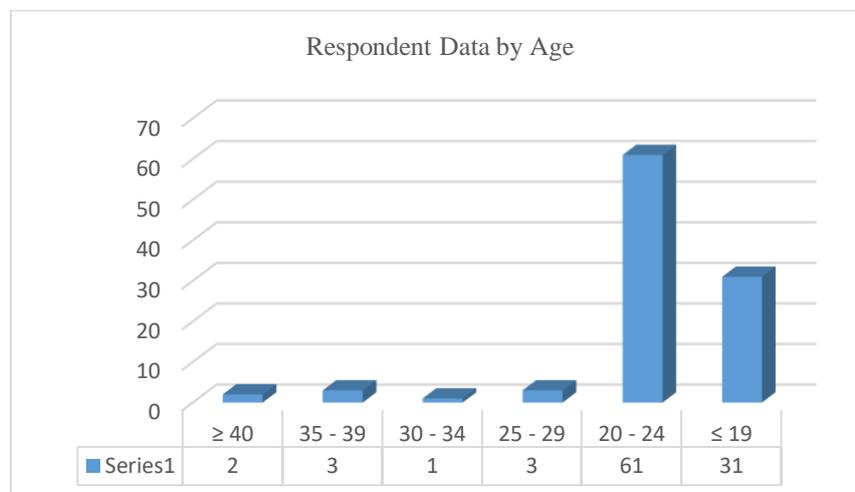

Figure 5. Respondent Data by Age

Respondent's Education

The results of the analysis of the characteristics of respondents based on education can be shown in [Figure 6](#).
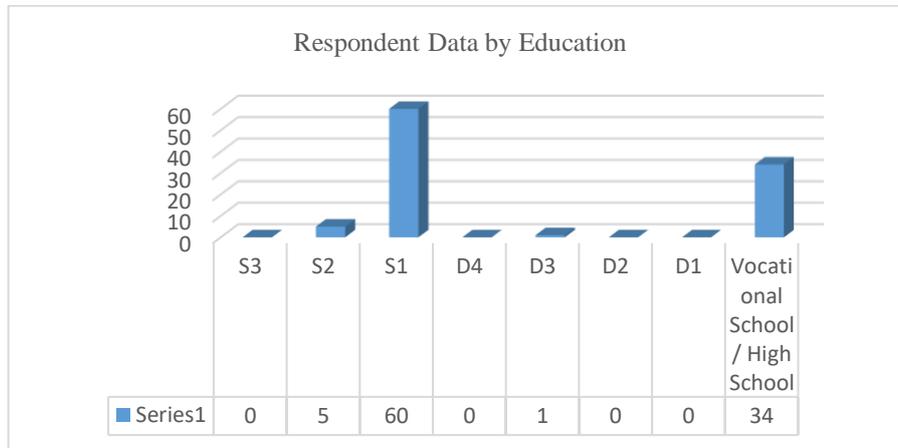
Figure 6. Respondent Data by Education

Based on [Figure 6](#), it can be seen that the respondents are divided into eight categories of education, namely SMA/SMK, D1, D2, D3, D4, S1, S2, and S3. From the data obtained from 101 respondents, the composition of respondents based on education is 34 SMA/SMK, 0 D1, 0 D2, 1 D3, 0 D4, 60 S1, 6 S2, and 0 S3. The results shown in Figure 4.3 the number of respondents is dominated by S1 with a total of 60 people.

Structural Model Testing

In this study, hypothesis testing uses the Partial Least Square (PLS) analysis version 3 for windows, and by calculating the algorithm (missing value: -0.1, data metric: mean 0 and variance 1, Weighting scheme: Path, Max number of iterations: 300 , accuracy of stopping criteria: 0.0000001). Based on [Figure 7](#), the schema of the PLS program model tested gets the following values:
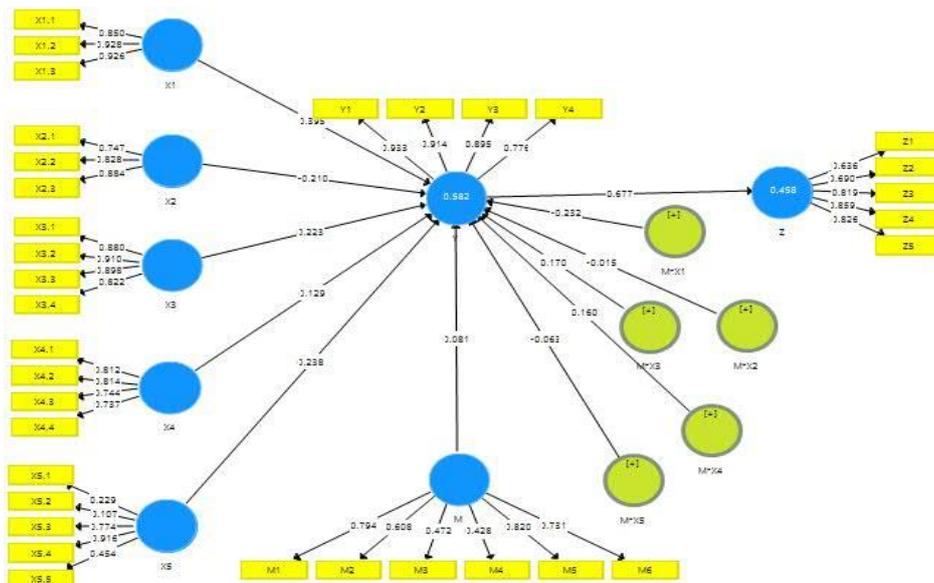
Figure 7. Output Calculation Algorithm

The output that explains the relationship between the latent variable and its indicators is as follows:

Table 2. Outer Model (Weights of Loading)

|	M	X1	X2	X3	X4	X5	Y	Z
M1	0.794							
M2	0.608							
M3	0.472							
M4	0.428							
M5	0.820							
M6	0.731							
X1.1		0.850						
X1.2		0.928						
X1.3		0.926						
X2.1			0.747					
X2.2			0.828					
X2.3			0.884					
X3.1				0.880				
X3.2				0.910				
X3.3				0.898				
X3.4				0.822				
X4.1					0.812			
X4.2					0.814			
X4.3					0.744			
X4.4					0.737			
X5.1						0.229		
X5.2						0.107		
X5.3						0.774		
X5.4						0.916		
X5.5						0.454		
Y1							0.933	
Y2							0.914	
Y3							0.895	
Y4							0.776	
Z1								0.636
Z2								0.690
Z3								0.819
Z4								0.859
Z5								0.826

Based on Table 2,
   a. M1 (don't want to leave the house for fear of the risk of contracting the COVID-19 pandemic) has a relationship of 0.794 to M (Corona Fear).
   b. M2 (worried about getting sick due to the COVID-19 pandemic over the next 6 months) has a relationship of 0.608 to M (Corona Fear).
   c. M3 (feeling anxious about the COVID-19 pandemic) has a relationship of 0.472 to M (Corona Fear).
   d. M4 (worried that someone in the immediate family may get sick due to the COVID-19 pandemic over the next 6 months) has an association of 0.428 with M (Corona Fear).
   e. M5 (fear of contracting the COVID-19 pandemic) has a relationship of 0.820 to M (Corona Fear).
   f. M6 (looking at the possibility that the Covid-19 outbreak will spread in other areas) has a relationship of 0.731 to M (Corona Fear).
   g. X1.1 (finding LMS useful for the study) has a relationship of 0.850 to X1 (Performance Expectancy).

h. X1.2 (LMS allows me to complete class activities faster) has a relationship of 0.928 to X1 (Performance Expectancy).

i. X1.3 (LMS increases learning productivity) has a relationship of 0.926 to X1 (Performance Expectancy).

j. X2.1 (I live and work) has a relationship of 0.747 to X2 (Effort Expectancy).

k. X2.2 (LMS increases learning productivity) has a relationship of 0.822 to X2 (Effort Expectancy).

l. X2.3 (finding a flexible system to interact) has a relationship of 0.884 to X2 (Effort Expectancy).

m. X3.1 (friends influence the behavior of thinking that they must use LMS) has a relationship of 0.880 to X3 (Social Influence).

n. X3.2 (friends must use LMS) has a relationship of 0.910 to X3 (Social Influence).

o. X3.3 (instructors whose opinion is more respected suggest using LMS) has a relationship of 0.898 to X3 (Social Influence).

p. X3.4 (using the system because the proportion of classmates who use the system) has a relationship of 0.828 to X3 (Social Influence).

q. X4.1 (having resources to use LMS) has a relationship of 0.812 to X4 (Facilitating Condition).

r. X4.2 (have knowledge to use LMS) has a relationship of 0.814 to X4 (Facilitating Condition).

s. X4.3 (a certain person or group is available to help when difficulties arise with LMS) has a relationship of 0.744 to X4 (Facilitating Condition).

t. X4.4 (using a system according to learning style) has a relationship of 0.733 to X4 (Facilitating Condition).

u. X5.1 (feeling alone and having no friends) has a relationship of 0.229 to X5 (Social Isolation).

v. X5.2 (feeling isolated from others) has a relationship of 0.107 to X5 (Social Isolation).

w. X5.3 (having someone to share feelings with) has a relationship of 0.774 to X5 (Social Isolation).

x. X5.4 (feels easy to relate to other people when needing others to help) has a relationship of 0.916 to X5 (Social Isolation).

y. X5.5 (when with other people, feeling alone) has a relationship of 0.454 to X5 (Social Isolation).

z. Y1 (intends to continue using LMS) has a relationship of 0.933 to Y (Behavioral Intention of LMS).

aa. Y2 (for study purposes, will use LMS) has a relationship of 0.914 to Y (Behavioral Intention of LMS).

bb. Y3 (using LMS regularly) has a relationship of 0.895 to Y (Behavioral Intention of LMS).

cc. Y4 (because of the possibilities offered by LMS, I plan to follow my next study more effectively) has a relationship of 0.776 to Y (Behavioral Intention of LMS).

dd. Z1 (often using LMS during the academic period) has a relationship of 0.636 to Z (Use Behavior of LMS).

ee. Z2 (using multiple LMS functions (eg, discussion forums, chat sessions, messaging, downloading course content, uploading assignments, etc.) has a relationship of 0.690 to Z (Use Behavior of LMS).

ff. Z3 (depending on LMS) has a relationship of 0.819 to Z (Use Behavior of LMS).

gg. Z4 (the use of LMS by our university is a good idea) has a relationship of 0.859 to Z (Use Behavior of LMS).

hh. Z5 (LMS makes learning more interesting for students) has a relationship of 0.826 to Z (Use Behavior of LMS).

Convergent validity of the measurement model with the indicator reflective mode is assessed based on the correlation between the item score/component score and the construct score. The reflective measure is said to be high if the correlation is more than 0.70. However, for research in the early stages of developing a measurement scale, a loading value of 0.5 to 0.60 is considered sufficient.

Based on Table 2, it is known that there are 5 indicators in each latent variable that has a loading value of < 0.7 and there is no between loading values of 0.5 to 0.6 including the Corona Fear (M) variable, namely the M3 and M4 indicators, on the Social Isolation variable (X5), namely indicators X5.1, X5.2,

and X5.5. To correct the invalid variables to meet the predetermined criteria, the invalid indicators must be removed from the model or not included in the next test with the aim of increasing the measurement score (outer loading) of each item and the composite reliability score.

Output that describes the relationship between latent variables:

Table 3. Latent Variable Correlation

	M	X1	X2	X3	X4	X5	Y	Z
M	1.000	0.402	0.456	0.423	0.415	0.244	0.300	0.367
X1	0.402	1.000	0.592	0.739	0.806	0.454	0.676	0.800
X2	0.456	0.592	1.000	0.541	0.761	0.443	0.369	0.621
X3	0.423	0.739	0.541	1.000	0.647	0.501	0.619	0.716
X4	0.415	0.806	0.761	0.647	1.000	0.503	0.587	0.769
X5	0.244	0.454	0.443	0.501	0.503	1.000	0.535	0.660
Y	0.300	0.676	0.369	0.619	0.587	0.535	1.000	0.677
Z	0.367	0.800	0.621	0.716	0.769	0.660	0.677	1.000

Based on Table 3,
   a. Corona Fear (M) has a relationship of 0.402 with Performance Expectancy (X1)
   b. Corona Fear (M) has a relationship of 0.456 with the development of Effort Expectancy (X2)
   c. Corona Fear (M) has a relationship of 0.423 with Social Influence (X3)
   d. Corona Fear (M) has a relationship of 0.415 with Facilitating Condition (X4)
   e. Corona Fear (M) has a relationship of 0.244 with Social Isolation (X5)
   f. Corona Fear (M) has a relationship of 0.300 with Behavioral Intention of LMS (Y)
   g. Performance Expectancy (X1) has a relationship of 0.676 with Behavioral Intention of LMS (Y)
   h. Effort Expectancy (X2) has a relationship of 0.369 with Behavioral Intention of LMS (Y)
   i. Social Influence (X3) has a relationship of 0.619 with Behavioral Intention of LMS (Y)
   j. Facilitating Condition (X4) has a relationship of 0.587 with Behavioral Intention of LMS (Y)
   k. Social Isolation (X5) has a relationship of 0.535 with Behavioral Intention of LMS (Y)
   l. Behavioral Intention of LMS (Y) has a relationship of 0.677 with Use Behavior of LMS (Z)

Based on this interpretation, it can be analyzed that Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Condition, Social Isolation are very capable of influencing Behavioral Intention of LMS and Use Behavior of LMS or in other words influencing intention and use of LMS because the relationship level is almost 100%, while feeling isolated due to the pandemic COVID-19 does not have too much influence on students or students in the relationship between Behavioral Intention of LMS and Use Behavior of LMS.

Based on this interpretation, it can be analyzed that all latent variables in this study have a relationship of more than 50%, so it can be concluded that all latent variables in this study have a fairly large relationship. And the relationship is in accordance with the analysis model in the study that has been described in this study. Output that explains the effect of latent variables:

Table 4. Path Coefficients

	M	X1	X2	X3	X4	X5	Y	Z
M							0.027	
X1							0.401	
X2							-0.236	
X3							0.194	
X4							0.173	
X5							0.266	
Y								0.677
Z								

Based on Table 4,

    a.   Corona Fear (M) has an effect on Behavioral Intention of LMS (Y) of 0.027
    b.   Performance Expectancy (X1) has an effect on Behavioral Intention of LMS (Y) of 0.401
    c.   Effort Expectancy (X2) has an effect on Behavioral Intention of LMS (Y) of -0.236
    d.   Social Influence (X3) has an effect on Behavioral Intention of LMS (Y) of 0.194
    e.   Facilitating Condition (X4) has an effect on Behavioral Intention of LMS (Y) of 0.173
    f.   Social Isolation (X5) has an effect on Behavioral Intention of LMS (Y) of 0.266
    g.   Behavioral Intention of LMS (Y) has an influence on Use Behavior of LMS (Z) of 0.677

Table 5. AVE

	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
M	0.798	0.807	0.814	0.436
X1	0.885	0.892	0.929	0.814
X2	0.759	0.782	0.861	0.675
X3	0.902	0.918	0.931	0.771
X4	0.781	0.781	0.859	0.605
X5	0.644	0.789	0.651	0.341
Y	0.903	0.903	0.933	0.778
Z	0.830	0.856	0.879	0.594

Based on Table 5, composite reliability measures the real value of the reliability of a construct and is better at estimating the internal consistency of a construct (Salisbury et al., 2002; Abdillah & Jogiyanto, 2009). Cronbach's alpha measures the lower limit of the reliability value of a construct. The rule of thumb is that the value of alpha or composite reliability must be greater than 0.7, although a value of 0.6 is still acceptable. In Table 6, the variables are Corona Fear (M), Performance Expectancy (X1), Effort Expectancy (X2), Social Influence (X3), Facilitating Condition (X4), Behavioral Intention of LMS (Y), and Use Behavior of LMS (Z).) alpha value between 0.70 - 0.90 then high reliability, but for the variable Social Isolation (X5) alpha value 0.50 - 0.70 then moderate reliability. Pay attention to the Composite Reliability (CR) value in Table 6, the variables Corona Fear (M), Performance Expectancy (X1), Effort Expectancy (X2), Social Influence (X3), Facilitating Condition (X4), Behavioral Intention of LMS (Y), and Use Behavior of LMS (Z) with a CR value of more than 0.7, so the construct is said to be reliable, but for the Social Isolation (X5) variable, the CR value is less than 0.70. To evaluate discriminant validity, it can be seen by the average variance extracted (AVE) method for each construct or latent variable. The model has better discriminant validity if the square root of the AVE for each construct is greater than the correlation between the two constructs in the model. In this study, the AVE value, and the square root of AVE for each construct are presented in Table 6. In Table 6 it is known that the AVE value of each construct is still below 0.50. Therefore, there is still a convergent validity problem in the model being tested so that the constructs in this research model need to be modified.

Tabel 6. R Square

	R Square	R Square Adjusted
Y	0.556	0.528
Z	0.458	0.453

Based on Table 6, goodness of fit model was measured using R-square dependent latent variable with the same interpretation as regression. Q-Square predictive relevance for structural models, measuring how well the observed values are generated by the model and also the estimated parameters. The Q-square value > 0 indicates the model has predictive relevance, otherwise if the Q-square value 0 indicates the model lacks predictive relevance.

Conclusion

The purpose of this research is to explore the factors that influence the acceptance of e-learning systems in universities, schools, and their use during the current COVID-19 pandemic. The study aims to measure whether Social Isolation affects the BI of LMS by students or students. In addition, the extended model also investigates the effect of Corona Fear on the relationship of PE, EE, SI, FC, and Social Isolation with BI LMS, to analyze how students respond to technology during the unfortunate emergence of Coronavirus, a highly contagious disease. serious illness.

The findings show that social isolation, PE, SI, EE and FC are important factors that influence students or students in Indonesia to pursue the use of LMS. These results indicate that students or students are willing to use LMS to successfully complete their lectures due to their perception of the benefits provided by the e-learning system, during isolation. The results on Corona fear moderation revealed that increasing fear among college students or students about Coronavirus will moderate the PE and SI relationship in BI LMS, indicating that students or students will expect increased performance by using LMS and will be socially influenced by their friends and family to do so. In addition, students or students are not satisfied with the online learning process because of poor internet connectivity.

The work presented in this paper has limitations. The sample size used in this study was only one hundred and one respondents, so that future research can increase the sample size and thus the results are more generalizable. The authors suggest the need to investigate the extended UTAUT model in other developed and developing countries during the pandemic, to analyze what factors influence LMS acceptance and use of e-learning systems, to better provide course materials and assistance to students in pursuing education. In addition, moderating and mediating variables can also be added to further expand the model and evaluate mechanisms relevant to the current situation.

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