ANALYSIS OF E-LEARNING ACCEPTANCE IN GENERATION Z STIKI INDONESIA DURING THE COVID-19 PANDEMIC

I Gusti Ayu Agung Mas Aristamy[1], Theresia Hendrawati[2]
[1]Prodi Teknik Informatika, Fakultas Teknologi dan Informatika Institut Bisnis dan Teknologi Indonesia
[2]Prodi Teknik Informatika, Fakultas Teknologi dan Informatika Institut Bisnis dan Teknologi Indonesia
[1,2]Jl. Tukad Pakerisan No. 97 Denpasar, Bali, Indonesia
E-Mail: agungmas.aristamy@instiki.ac.id[1], theresia.hendrawati@instiki.ac.id[2]

Abstract
E-Learning has been applied for a long time in Indonesia and other developed and developing countries. However, research by Salloum et.al., said that E-Learning systems in developing countries were partially or completely not adopted; utilization has not been completed and is considered less than a satisfactory level. This refers to the lack of understanding of the factors that influence adoption. One of the latest studies on distance learning during the COVID-19 pandemic said that there were several obstacles experienced by students, and teachers. This study aims to analyze the adoption of E-Learning technology in Generation Z at one of university in Bali during the COVID-19 pandemic. Results of this study indicate that there is a positive impact of computer self-efficacy and accessibility on the perception of the ease with which students use the E-Learning system. The factors of information quality and content quality positively affect the students' perceived ease of use and usefulness of the E-Learning system. It is this perception of the usefulness and ease of use of the E-Learning system that has an increasing impact on students' intentions and attitudes to use the E-Learning system in the future.

1. INTRODUCTION

Distance learning began to be implemented simultaneously in Indonesia on March 24, 2020, until now. This is due to the COVID-19 virus pandemic which has not shown a decrease in the number of positive patients. Teaching and learning activities are required to continue in accordance with Circular Letter Number 4 of 2020 and Number 302/E.E2/KR/2020 concerning the Implementation of Education in the Coronavirus Disease (Covid-19) Emergency [1][2]. The contents of the circular call for learning for students and students throughout Indonesia simultaneously to be carried out online, or distance learning using the Internet network. This condition causes most students, students and teaching staff to use E-Learning as a medium in carrying out the learning and teaching process.

E-Learning is a teaching and learning method that fully or partially signifies an educational model that is used based on the use of media and electronic devices as a tool to increase the availability of training, communication, interaction, and which helps in accepting new ways to understand and build learning [3]. E-Learning provides students and students with a virtual atmosphere where they can participate in various activities. There are many benefits to this system, including easy access to material content, team collaboration, and timely feedback [4].

Distance learning or online using E-Learning has been implemented for a long time in Indonesia. Research by Mokhamad Iklil et.al., said that the online lecture system at several State Universities incorporated in the pditt.learning.kemdikbud.go.id website, made a positive contribution to suppressing disparities in the quality of universities in Indonesia [5]. However, there are those who say that since online learning the rate of students dropping out of school due to not graduating in online classes has also increased to 75% [6]. This statement makes the statement [7] regarding the

performance of students who use E-Learning better than those who do not, be refuted

Research by Salloum et.al., also said that, the E-Learning system in developing countries was partially or completely not adopted; utilization has not been completed and is considered less than a satisfactory level [8]. This refers to the lack of understanding of the factors that influence adoption [9]. One of the latest studies on distance learning during the COVID-19 pandemic said that there were several obstacles experienced by students, and teachers. The obstacles are the lack of mastery of technology, the addition of internet quota costs, communication and socialization between students and teaching staff are becoming more reduced and the working hours are not limited [10]. The results of this study are certainly contrary to the results of previous studies which say that distance learning or E-Learning has been accepted by the educational community because it is effective and has a positive impact on the interests and attitudes of students and teaching staff.

STMIK STIKOM Indonesia or STIKI is one of the private universities in Bali where some of its courses use E-Learning as an online learning medium. The courses that use E-Learning as a learning medium include: Computer Architecture, Databases, Operating Systems and Cyber Forensics. E-Learning at STIKI has been actively used since 2019 until now. However, until now there has been no research that discusses how to accept or adopt E-Learning at STIKI by students, even though this is an important factor for the Academic side of the STIKI Campus to know to be able to evaluate the E-Learning system owned by the campus.

Based on this background, this study aims to analyze the acceptance or adoption of E-Learning technology in the STIKI Indonesia campus environment which focuses on Generation Z during the COVID-19 pandemic. This study chose to analyze Generation Z, because all forms of modern technology existed at the time Generation Z was born. Generation Z are individuals who were born in the 1990s, developed in the 2000s and have unique characteristics compared to other generations, such as self-awareness, perseverance, realism, innovation and independence [11]. This research is a follow-up study that had previously been carried out by Aristamy and Santi in an initial study entitled "Analysis of Online Learning Adoption Behavior Levels in Generation Z During the COVID-19 Pandemic" [12]. The gap between the initial research and this research is that the initial research is only limited to case studies of students who use online learning and are studying at public/private universities in Bali. Meanwhile, the research that will be conducted this time specifically discusses the acceptance of E-Learning among generation Z students who are studying at

STIKI Indonesia. The area of focus studied is also different, if the initial research focused on adoption behavior, this research focuses on technology acceptance. Of course, the conceptual model used is also different.

The purpose of selecting the title regarding the analysis of acceptance of E-Learning technology in generation Z during the COVID-19 pandemic is to find out the extent of acceptance of STIKI Indonesian students in using E-Learning as a learning medium during the COVID-19 pandemic. As is known, during the COVID-19 era, all learning is carried out online, so it is important to know the extent of student acceptance of E-Learning so that it can be a reference and evaluation material for Universities and the Government to find out whether the E-Learning system that has been implemented so far has been fully implemented. accepted or not. Another objective of this research is to contribute theoretically and practically. The theoretical contribution is in the form of new insights about Gen Z behavior at the STIKI Indonesia campus in terms of adopting E-Learning technology. Meanwhile, the practical contribution is in the form of research results which are expected to be used as supporting data and evaluation material for decision makers at the STIKI Indonesia campus.

II. LITERATURE
2.1. Technology of Acceptance Model (TAM) and Its Development

Technology of Acceptance Model (TAM) is a theory used to analyze and determine the factors that influence the acceptance of a technology. TAM is a derived theory adopted from several previous theories that already exist. The theory begins with the Theory of Diffusion of Innovations (DIT) developed by Rogers which began in 1960, then continued with Theory of Task-technology Fit (TTF) developed by Goodhue and Thompson, followed by Theory of Reasoned Action (TRA). which was developed by Fishbein and Ajzen, followed by Theory of Planned Behavior (TPB) developed by Ajzen, became the Technology Acceptance Model (TAM) which was developed by Davis et.al., in 1985, and in the end Venkatesh and Davis perfected TAM in 1996 [13].

In 1985, Fred Davis proposed the theory of TAM in his doctoral dissertation while studying at the MIT Sloan School of Management. Davis proposed that system use or system use is a response that can be explained or predicted by user motivation, which is directly influenced by external stimuli from actual system features and capabilities. By referring to the previous theory developed by Fishbein and Ajzen regarding TRA and several other theories, Davis refined his conceptual model and proposed a Technology Acceptance Model as illustrated in Figure 1 below [14].
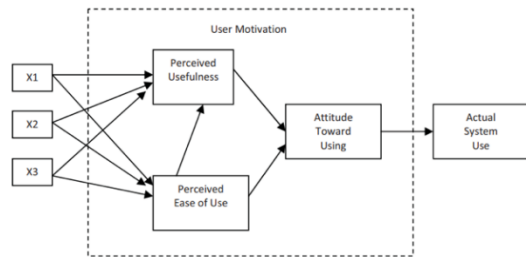
Figure 1. Davis's conceptual model of TAM [15]

Davis said that user motivation can be explained through three factors, namely Perceived Ease of Use, Perceived Usefulness, and Attitude Towards Using the system. Davis provides a hypothesis if the attitude of the user towards the system is the main determinant of whether the user will use or reject the system. The attitude of the user is influenced by two main beliefs, namely perceived usefulness and perceived ease of use, with perceived ease of use having a direct influence on perceived usefulness. In the end, these two beliefs are hypothesized to have a direct influence on the system design characteristics, which are shown by X1, X2, and X3 in Figure 1.

2.2. E-Learning

E-Learning is defined as a teaching and learning method that fully or partially signifies the educational model used, based on the use of media and electronic devices as tools to increase the availability of training, communication, and interaction, and which assists in accepting new ways of understanding and constructing learning [3]. E-Learning takes place using various forms of technology and media. An important element of E-Learning is the use of electronic media, and nowadays, E-Learning is described as learning that is used through different computing devices, such as computers, mobile phones, tablets, and virtual environments. In addition to the many advantages of E-Learning, E-Learning is also not free from weaknesses, opportunities, and threats related to the use of E-Learning. When viewed in terms of strength, E-Learning can build a community spirit among students, create independent students, build strong relationships between students and instructors, and improve problem solving skills. Regarding its weakness, E-Learning complicates the workload of students and instructors. E-Learning is less reliable than traditional learning in terms of peer feedback and collaborative activity assessment. With regard to opportunities, E-Learning enables students to produce high-quality work and assists in developing the alumni community. With regard to these threats, it is difficult to ensure the reliability of the learning services provided through the E-Learning system. It is also difficult to adopt publicly available resources through E-Learning systems [16].

III. RESEARCH METHODS

This part contains all stages from the beginning of data collection to the stage of analyzing the collected data.

3.1. Research Flow

Quantitative methods are used in this study. Primary data is needed to analyze individual adoption. The following is a research flow that begins with the observation stage, literature search, constructing constructs or conceptual models and hypotheses, data collection, data processing and the final results are obtained in the form of factors that influence the adoption of E-Learning in Generation Z STIKI Indonesia during the COVID-19 pandemic. 19. Figure 2 below is an illustration of the research flow.
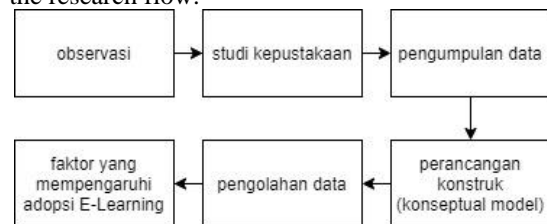

Figure 2. Research Flow

This study uses data collection methods through online questionnaires which will be distributed to STIKI Indonesia students who take courses in Computer Architecture, Databases, Operating Systems and Cyber Forensic learning activities in the Even semester of the 2020/2021 academic year. Purposive sampling is used as a respondent sampling technique with the following conditions: all respondents have experience using E-Learning during the COVID-19 pandemic, with an age range of 17-23 years and are registered as students at STIKI Indonesia. In total, 598 informants were collected who had filled out the research questionnaire.

3.2. Conceptual Model

The conceptual model used in this study refers to the conceptual model developed by [9]. The conceptual model used is the development of the TAM construct. The external factors developed include System Characteristics and Individual Factors. These factors consist of several variables, namely in System Characteristics there are System Quality, Content Quality, Information Quality and on Individual Factors there are Computer Self Efficacy, Subjective Norm, Perceived Enjoyment, Accessibility and Computer Playfulness. Figure 3 below is an illustration of the conceptual model used in this study.
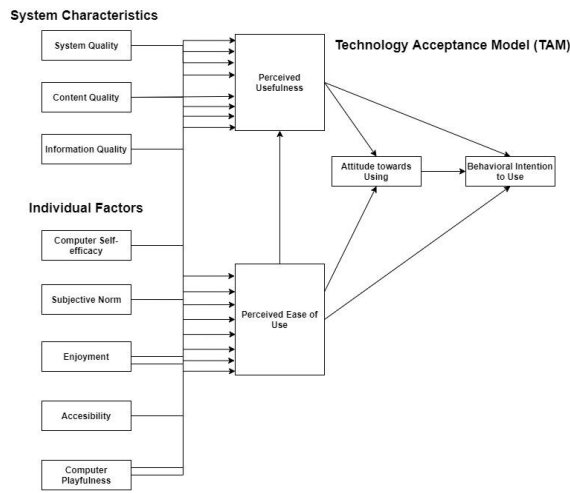
Figure 3. Conceptual Research Model

3.3. Data Analysis

Model testing and assessment of reliability and validity were carried out using Smart Partial Least Square (SmartPLS) and Structural Equation Modeling (SEM), which are tools that utilize a component-based estimation approach [17]. Structural model analysis uses three stages of analysis, namely outer model analysis, inner model analysis, and hypothesis. This study uses several question items on the construct variable to gain insight from Indonesian STIKI students who take Computer Architecture and Cyber Forensic courses through E-Learning during the COVID-19 pandemic. System Quality (SQ), Content Quality (CQ), Information Quality (IQ), Computer Self Efficacy (CSE), Subjective Norm (SN), Perceived Enjoyment (PE), Perceived Accessibility (PA), Perceived Playfulness (PP), Perceived Ease of Used (PEOU), Perceived Usefulness (PU), Attitude (ATT), and Behavioral Intention (BI) were measured using question items developed by [16]. All variables are measured using a Likert scale where response 1 indicates an opinion of Strongly Disagree, and response 5 indicates an opinion of Strongly Agree.

3.4. Respondent Characteristic

The characteristics of the respondents needed in this study were all Indonesian STIKI students who were taking Computer Architecture and Cyberforensic courses, and were conducting

learning using E-Learning during the COVID-19 pandemic. The results of filling out the questionnaire show that the age range of students who fill out this questionnaire is in the range of births from 1995 to 2001, which is in Generation Z. A total of 54% of students who filled out this questionnaire were born in 2001, which means they are 20 years old. year. As many as 25.3% were born in 2000, which means they are still 21 years old and 13% of students who filled out were born in 1999. The remaining 7.7% are in the age range of 22 to 26 years.

IV. RESULTS

4.1. Respondent Profiles

Respondent profiles were obtained by filling out questionnaires and processed by descriptive statistical processing. Descriptive statistical processing in this study has met the requirements to be tested, namely 598 respondents have been collected. Descriptive statistical processing of the respondent's profile contained in this questionnaire is the year of birth (age). The following are the results of processing descriptive statistics for each question:

1) Year of Birth (Age)

Figure 4 describes the percentage of the respondent's year of birth. There were 5.7% of respondents born in 1995, 5% of respondents born in 1996, 5% in 1997, 12.7% in 1998, 23.4% in 1999, 30.9 % in 2000, and as much as 17.2% in 2001. The results of these data state that most of the respondents who filled out the questionnaire in this study were aged 19 to 22 years.
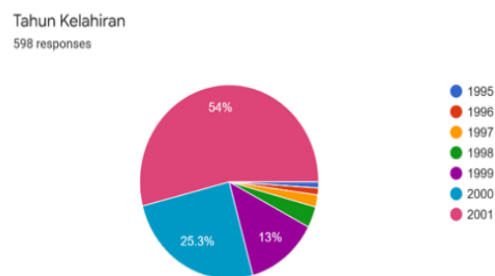

Figure 4. Percentage Chart of Respondents Year of Birth

2) Discriminant Validity Test Results

Discriminant validity analysis aims to provide a clear assessment of whether the proposed construct has a strong relationship with its indicators compared to other constructs. Based on the data from the discriminant test, it is known that the value for the accessibility variable (ACC) to accessbility is 0.819, attitude towards using (ATU) towards attitude towards using is 0.876, behavioral intention to use (BI) towards behavioral intention to use is 0.886, Computer playfulness (CP) to computer playfulness is 0.863, computer self efficacy (CSE) to computer self efficacy is 0.879, content quality (CQ) to content quality is 0.817, enjoyment (ENJ) is 0.887, information quality (IQ) is 0.869, perceived ease of use (PEOU) to perceived ease of use is 0.936, perceived usefulness (PU) to perceived usefulness is 0.882, subjective norm (SN) to subjective norm is 0.777, and System Quality (SQ) to system quality is 0.865. Table 1 shows the results of the discriminant validity test carried out by loading data between variables

and shows that all items have a high weight, namely (> 0.7). This indicates that the discriminant validity is strong.

Table 1. Discriminant Validity

	ACC	ATU	BI	CP	CSE	CQ	ENJ	IQ	PEOU	PU	SN	SQ
ACC	0,819											
ATU	0,583	0,876										
BI	0,654	0,610	0,886									
CP	0,707	0,666	0,614	0,863								
CSE	0,666	0,630	0,989	0,647	0,879							
CQ	0,672	0,745	0,641	0,736	0,665	0,817						
ENJ	0,684	0,696	0,643	0,872	0,673	0,750	0,887					
IQ	0,683	0,722	0,619	0,727	0,643	0,837	0,748	0,869				
PEOU	0,622	0,604	0,923	0,647	0,958	0,648	0,673	0,627	0,936			
PU	0,676	0,709	0,602	0,723	0,625	0,835	0,736	0,990	0,610	0,882		
SN	0,620	0,542	0,549	0,637	0,579	0,617	0,670	0,616	0,572	0,606	0,777	
SQ	0,593	0,989	0,616	0,682	0,637	0,753	0,716	0,732	0,612	0,718	0,552	0,865

3) Cronbach Alpha Test Results and Composite Reliability

Cronbach Alpha and composite reliability are used to measure internal consistency and measure reliability based on the interrelationships of the observed item variables. Table 2 shows the Cronbach Alpha scale and its description. Table 3 shows that the item variables used in the questionnaire are reliable, because based on the Cronbach Alpha scale, the result is that all variables are in the Very Reliable range, except for the Subjective Norm variable which is in the Reliable range. Meanwhile, Composite Reliability is considered reliable if the Composite reliability value is >=0.7. The test results and their descriptions are in Table 4.

Tabel 2. Cronbach Alpha Test Results

Cronbach Alpha's Scale	Description
0.81-1.00	Very reliable
0.61-0.80	Reliable
0.42-0.60	Reliable enough
0.21-0.41	Unreliable
0.00-0.20	Very Unreliable

Table 3. Composite Reliability Test Results

	Cronbach's Alpha	**Description**
Accesbility	0,877	Very Reliable
Attitude Towards Using	0,898	Very Reliable
Behavioral Intention to Use	0,909	Very Reliable
Computer Playfulness	0,913	Very Reliable
Computer Self-Efficacy	0,926	Very Reliable
Content Quality	0,876	Very Reliable
Enjoyment	0,932	Very Reliable
Information Quality	0,919	Very Reliable
Perceived Ease of Use	0,857	Very Reliable
Perceived Usefulnes	0,905	Very Reliable
Subjective Norm	0,683	Reliable
System Quality	0,916	Very Reliable

4) Hypothesis Test Results

After testing the measurement model (outer model) the next step is testing the structural model (inner model) which is to find out whether the hypothesis can be accepted or rejected. This study will use a significant value of 0.05 or 5%. The relationship between variables can be considered significant if the P value is smaller than the predetermined significant value (P < 0.05). Table 4 shows the results of testing the inner model.

Based on Table 4, not all variables have positive coefficients, there are several variables that have negative coefficients, namely ACC-PEOU, CSE-PU, ENJ-PU, SN-PU, SQ-PEOU, and SQ-PU. Meanwhile, other variables have positive coefficients. Figure 4 describes the results of the analysis of the PLS test.

Table 4. Hypothesis Test Results

|	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ($|O/STDEV|$)	P Values	Decision
Accesbility -> Perceived Ease of Use	-0,077	-0,077	0,023	3,292	0,001	Supported
Accesbility -> Perceived Usefulnes	0,004	0,004	0,013	0,288	0,773	Not Supported
Attitude Towards Using -> Behavioral Intention to Use	0,071	0,072	0,029	2,436	0,015	Supported
Computer Playfulness -> Perceived Ease of Use	0,045	0,045	0,028	1,603	0,109	Not Supported
Computer Playfulness -> Perceived Usefulnes	0,027	0,026	0,017	1,591	0,112	Not Supported
Computer Self-Efficacy -> Perceived Ease of Use	0,949	0,949	0,016	58,389	0,000	Supported
Computer Self-Efficacy -> Perceived Usefulnes	-0,030	-0,028	0,026	1,159	0,247	Not Supported
Content Quality -> Perceived Ease of Use	0,006	0,006	0,028	0,219	0,827	Not Supported
Content Quality -> Perceived Usefulnes	0,033	0,033	0,015	2,218	0,027	Supported
Enjoyment -> Perceived Ease of Use	0,049	0,050	0,031	1,590	0,112	Not Supported
Enjoyment -> Perceived Usefulnes	-0,023	-0,022	0,018	1,290	0,198	Not Supported
Information Quality -> Perceived Ease of Use	0,008	0,007	0,030	0,263	0,792	Not Supported
Information Quality -> Perceived Usefulnes	0,987	0,987	0,013	77,063	0,000	Supported
Perceived Ease of Use -> Behavioral Intention to Use	0,866	0,865	0,018	48,010	0,000	Supported
Perceived Ease of Use -> Perceived Usefulnes	0,006	0,004	0,025	0,247	0,805	Not Supported
Perceived Usefulnes -> Attitude Towards Using	0,709	0,711	0,030	23,943	0,000	Supported
Perceived Usefulnes -> Behavioral Intention to Use	0,023	0,023	0,030	0,760	0,447	Not Supported
Subjective Norm -> Perceived Ease of Use	0,017	0,018	0,022	0,793	0,428	Not Supported
Subjective Norm -> Perceived Usefulnes	-0,004	-0,003	0,010	0,401	0,689	Not Supported
System Quality_ -> Perceived Ease of Use	-0,034	-0,034	0,023	1,483	0,139	Not Supported
System Quality_ -> Perceived Usefulnes	-0,016	-0,015	0,010	1,557	0,120	Not Supported
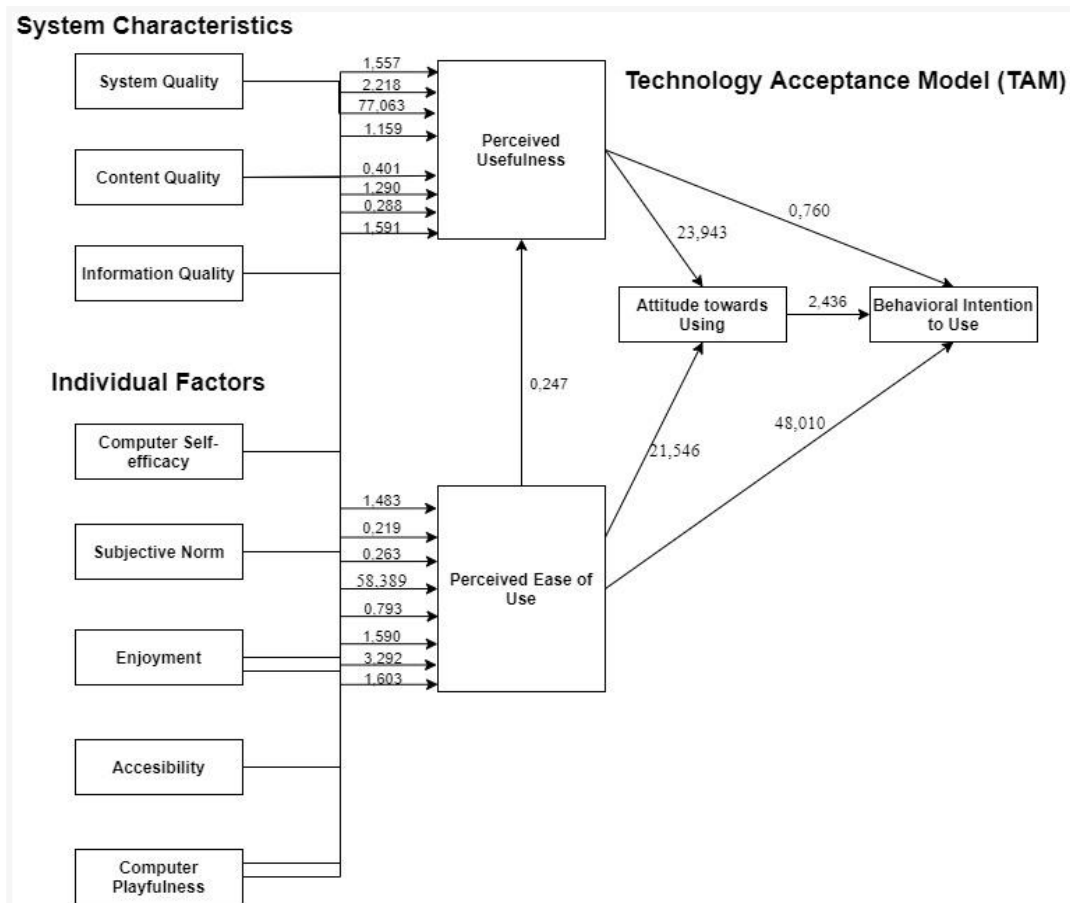
Figure 5. Hypothesis Test Results on PLS

The proposed conceptual model is mostly supported by empirical data. Path analysis provides support for several hypotheses in this study. The results of hypothesis testing are summarized in Table 4. To analyze the various association hypotheses in the developed model, path coefficient analysis has been carried out. The model is made to be processed through a bootstrap re-sampling routine to obtain significance [18]. In this study, a total of 598 samples were used. The results of hypothesis testing of the suggested research model are shown in Figure 5 and Table 4, Four endogenous variables were verified in the model (PU, PEOU, ATT and BI). Generally, 7 of the 21 hypotheses were supported. In this case the hypothesis H1b1, H1c1, H2a2, H5a2, H9, H10, and H12 are supported by empirical data, while H1a1, H1a2, H1b2, H1c2, H2a1, H3a1, H3a2, H4a1, H4a2, H5a1, H6a1, H6a2, H7 and H11 is rejected.

The results showed that PU had a significant effect on ATT (β= 0.709, p < 0.001); thus, supports hypothesis H9. PEOU was determined to be significant in influencing BI (β= 0.866, p < 0.001) and this supports hypothesis H10. Furthermore, PU was significantly affected by two exogenous factors: IQ (β= 0.987, p < 0.05) and CQ (β = 0.033, p < 0.05) which in turn supported hypotheses H1c1 and H1b1. PEOU was found to be significantly affected by two exogenous factors: ACC (β= -

0.077, p < 0.01) and CSE (β = 0.949, p < 0.01); thus, supports hypotheses H5a1, and H2a2. The results also show that ATT has a significant effect on BI (β= 0.071, p < 0.001) and this supports the H12 hypothesis. The relationship between PU and ACC (β=-0.077, p = 0.001), CP (=0.027, p = 0.112), CSE (β=-0.030, p = 0.247), ENJ (β=-0.023, p = 0.198), PEOU (β=0.006, p = 0.805), SN (β=-0.004, p = 0.689) and SQ (β=-0.016, p = 0.120), were found to be not statistically significant, and thus, hypotheses H5a2, H6a2, H2a1, H4a2, H7, H3a1, H1a1 are generally not supported. In addition, the results showed that CP, CQ, ENJ, IQ, SN, and SQ had a negative impact on PEOU (β=0.045; p=0.109), (β=0.006; p=0.827), (β=0.049; p= 0.112), (β=0.008; p=0.792), (β=0.017; p=0.428), (β=-0.034; p=0.139). Therefore, H6a1, H1b2, H4a1, H1c2, H3a2 and H1a2 are not supported.

This study aims to examine the results of the TAM expansion model developed by [9], through the results of an analytical study conducted by [19] with relevant studies collected based on inclusion and exclusion criteria. The result of the expansion model developed is the TAM model with the addition of exogenous factors that have an influence in terms of system characteristics and individual factors. The test results of the TAM model developed by Salloum in this study provide significant results regarding the factors that most

influence the adoption of E-Learning. The factors that influence the adoption of E-Learning in Generation Z at STIKI Indonesia in terms of system characteristics are information quality and content quality. Meanwhile, when viewed from the side of the individual factors are accessibility and self-efficacy of computers. The results of the study also stated that attitudes towards the use of E-Learning affect behavioral intentions to use.

Regarding system characteristics, the results show that information quality and content quality have a significant positive effect on the perceived usefulness of students. These results indicate that when the information that underlies the E-Learning system and its quality is rooted, students will feel the usefulness or benefits of E-Learning itself. Although the quality of information was found to affect the perceived usefulness of the E-Learning system, the quality of the system did not show any effect on the perceived usefulness. This result is not in accordance with the results reported in previous studies, where the quality of the system showed a significant effect on perceived benefits. Furthermore, the results show that the quality of the content has a positive effect on the perceived usefulness and perceived ease of use of the E-Learning system. This result is not in accordance with the results given in previous studies [20]. The difference in the results shown between the relationship observed in this study and previous studies, is caused by the possibility that refers to the characteristics of the individual and the E-Learning system being tested. Based on this, it is necessary to consider this gap, namely by improving the quality of the STIKI Indonesia E-Learning system to achieve a higher adoption rate.

In terms of individual characteristics, the results show that computer self-efficacy and accessibility have a positive impact on perceptions of ease of use of the E-Learning system. These results indicate that when students have adequate computer skills and show a positive tendency to use the E-Learning system without any difficulties, the need for an E-Learning system for them will definitely increase. Although previous studies have established a positive relationship between computer self-efficacy [21] and perceived usefulness, many different results were found in this study. These differences may refer to individual preferences and cultural differences between developed and developing countries. The results show that subjective norms, enjoyment, and computer games have no effect on perceived usefulness and perceived ease of use. This result is not in accordance with the results observed in previous studies [22]. The results of previous studies postulate that the E-Learning system is socially accepted by students, but this does not provide a guarantee that the E-Learning system will be easy to use and useful for them.

With respect to the TAM construction, the results show that perceived ease of use has no effect on perceived usefulness, but has a positive effect on behavioural intention to use the E-Learning system. This result is not in accordance with the original theoretical foundation of TAM [15]. This discrepancy in results is because according to the results of the questionnaire that has been filled out by STIKI students, when students use E-Learning, students do not feel that the E-Learning system is user-friendly and easy to use. However, on the other hand, their behavioural intentions show positive results, which supports the original TAM hypothesis. When students believe that the E-Learning system is useful for them, their behavioural intentions will be better. In addition, it is clear from the results that student attitudes have a significant positive influence on behavioural intentions, where the latter provides a strong positive relationship with actual E-Learning use. This result stems from the fact that when students show positive attitudes towards the use of the E-Learning system, their behavioural intentions will increase, and accordingly, their actual use will be better.

Overall, considering the contextual sensitivity and various factors that influence the core construction of TAM [23], it can be seen that some factors were not supported when tested at STIKI Indonesia, a campus in Bali, Indonesia, because previous studies were tested at a campus located in the United Arab Emirates. of the Emirates (UAE). This requires further research to examine other individual factors that may influence E-Learning acceptance in certain countries, such as Indonesia. In addition, recognizing these factors will help in increasing the ability of researchers and increasing the acceptance rate of E-Learning in the context of testing in Bali, Indonesia taking into account the factors studied in this study.

V. CONCLUSION
5.1. Conclusion

The purpose of this study is to analyze the acceptance or adoption of the E-Learning system in the STIKI Indonesia campus environment which focuses on Generation Z during the COVID-19 pandemic. This study chose to analyze Generation Z, because all forms of modern technology existed at the time Generation Z was born. Generation Z are individuals who were born in the 1990s, developed in the 2000s and have unique characteristics compared to other generations, such as self-awareness, perseverance, realism, innovation and independence [11].

The model tested in this study is a new model that has been previously developed through the expansion of TAM with external factors by [9]. According to the research findings, there is a positive impact of computer self-efficacy, and

accessibility on students' perceptions of the ease with which they use the E-Learning system. The factors of information quality and content quality positively affect the students' perceived ease of use and usefulness of the E-Learning system. Perceptions of the usefulness and ease of use of the E-Learning system have an increasing impact on students' intentions and attitudes to use the E-Learning system in the future. In addition, perceived ease of use and perceived usefulness were found to be the most powerful predictors of usage intention. Therefore, it is the responsibility of the system development team to be able to build an easy-to-use and useful E-Learning system for Indonesian STIKI students. The current pandemic condition makes it easier for students to feel academic stress, boredom and boredom [24].

Learning content in the E-Learning system is not enough to just use writing or text, because this can trigger academic stress felt by students in learning activities, and result in low student interest in using the E-Learning system. Learning content will be better if you add visualization through images or animation and audio simulation videos to attract students' interest to learn it. The E-Learning system designer and developer team must design systems and interfaces that suit student learning needs in such a way that they are easy to use, and can increase students' intention to accept and adopt the E-Learning system. The fast and consistent response of the E-Learning system also affects students' interest in using it. When the E-Learning system can respond immediately, students will be more helpful in the learning process.

5.2. Suggestion

Although the results of this study are quite interesting and play an important role in describing student acceptance of the E-Learning system, it also has some limitations. First, this study is solely directed at the opinions of Indonesian STIKI students, and if the opinions of teaching lecturers are taken into account, it is possible to obtain a comparison between the analysis of lecturers and students. Second, the research model is cross-sectional and determines user perceptions and intentions for a single point in time. Therefore, it is suggested that more research be conducted using longitudinal surveys as it is possible that individuals' perceptions and preferences will change as they gain more experience over time. Third, this research focuses on one of the private universities in the field of computers in Bali, namely STIKI Indonesia and therefore, the results can only be generalized to private universities that have a special concentration in the field of computers. Fourth, the sample obtained is limited to only Indonesian STIKI students and it is important to consider the larger population, which has different types of colleges and psychological attitudes. Fifth, this study uses a convenience sampling technique, in which generalization of the results should be treated with caution. Future research should consider other sampling techniques in order to more generalize the results to the entire population.

References

[1]   Kementrian Pendidikan dan Kebudayaan, "Mendikbud Terbitkan SE tentang Pelaksanaan Pendidikan dalam Masa Darurat Covid-19," *kemendikbud.go.id*, 2020. https://www.kemdikbud.go.id/main/blog/2020/03/mendikbud-terbitkan-se-tentang-pelaksanaan-pendidikan-dalam-masa-darurat-covid19 (accessed May 03, 2020).

[2]   Kementrian Pendidikan dan Kebudayaan, "Masa Belajar Penyelenggaraan Program Pendidikan," *kemendikbud.go.id*, 2020. https://lldikti5.ristekdikti.go.id/home/detail post/surat-edaran-direktur-jenderal-pendidikan-tinggi-kemdikbud-tentang-masa-belajar-penyelenggaraan-program-pendidikan (accessed May 03, 2020).

[3]   K. Selvarajah, T. Krishnan, and H. Hussin, "E-learning Readiness, Entrepreneurship Training, Bumiputera Entrepreneurs; E-learning Readiness, Entrepreneurship Training, Bumiputera Entrepreneurs," *Management*, vol. 7, no. 1, pp. 35–39, 2017, doi: 10.5923/j.mm.20170701.04.

[4]   W. M. Al-Rahmi *et al.*, "Use of E-Learning by University Students in Malaysian Higher Educational Institutions: A Case in Universiti Teknologi Malaysia," *IEEE Access*, vol. 6, pp. 14268–14276, 2018, doi: 10.1109/ACCESS.2018.2802325.

[5]   M. I. Mustofa, M. Chodzirin, L. Sayekti, and R. Fauzan, "Formulasi Model Perkuliahan Daring Sebagai Upaya Menekan Disparitas Kualitas Perguruan Tinggi," *Walisongo Journal of Information Technology*, vol. 1, no. 2, p. 151, 2019, doi: 10.21580/wjit.2019.1.2.4067.

[6]   C. Wang *et al.*, "Need satisfaction and need dissatisfaction: A comparative study of online and face-to-face learning contexts," *Comput Human Behav*, vol. 95, no. January, pp. 114–125, 2019, doi: 10.1016/j.chb.2019.01.034.

[7]   O. Oludare Jethro, A. Moradeke Grace, and A. Kolawole Thomas, "E-Learning and Its Effects on Teaching and Learning in a Global Age," *International Journal of Academic Research in Business and Social Sciences*, vol. 2, no. 1, pp. 2222–6990, 2012.

[8]   A. Tarhini, K. Hone, X. Liu, and T. Tarhini, "Examining the moderating effect of

individual-level cultural values on users' acceptance of E-learning in developing countries: a structural equation modeling of an extended technology acceptance model," *Interactive Learning Environments*, vol. 25, no. 3, pp. 306–328, 2017, doi: 10.1080/10494820.2015.1122635.

[9]   S. A. Salloum, M. Al-Emran, K. Shaalan, and A. Tarhini, "Factors affecting the E-learning acceptance: A case study from UAE," *Educ Inf Technol (Dordr)*, vol. 24, no. 1, pp. 509–530, 2019, doi: 10.1007/s10639-018-9786-3.

[10]   P. B. S. Agus Purwanto, Masduki Asbari, Rudy Pramono, "Studi Eksploratif Dampak Pandemi COVID-19 Terhadap Proses Pembelajaran Online di Sekolah Dasar," *Journal of Education, Psycology, and Counseling*, vol. 2, no. 1, 2020.

[11]   M. Merriman, "The next big disruptor: Gen Z," *Ernest & Young*, pp. 1–7, 2015.

[12]   I. Gusti Ayu Agung Mas Aristamy and S. Ika Murpratiwi, "Analisis Tingkat Online learning Adoption Behavior pada Generasi Z Selama Pandemi COVID-19," *JUSTIN (Jurnal Sistem dan Teknologi Informasi)*, vol. 10, no. 1, 2022, doi: 10.26418/justin.v10i1.43076.

[13]   P. Lai, "the Literature Review of Technology Adoption Models and Theories for the Novelty Technology," 2017. doi: 10.4301/s1807-17752017000100002.

[14]   M. Chuttur, "Overview of the Technology Acceptance Model: Origins , Developments and Future Directions," *Sprouts: Working Papers on Information Systems*, vol. 9, no. 37, pp. 1–23, 2009, doi: 10.1021/jf001443p.

[15]   F. D. Davis, "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology," *MIS Quarterly*, vol. 13, no. 3, pp. 319–340, 1989, doi: 10.2307/2490008.

[16]   S. A. Salloum, A. Qasim Mohammad Alhamad, M. Al-Emran, A. Abdel Monem, and K. Shaalan, "Exploring students' acceptance of e-learning through the development of a comprehensive technology acceptance model," *IEEE Access*, vol. 7, pp. 128445–128462, 2019, doi: 10.1109/ACCESS.2019.2939467.

[17]   Y. Hwang, "User experience and personal innovativeness: An empirical study on the Enterprise Resource Planning systems," *Computers in Human Behavior*, vol. 34, pp. 227–234, 2014, doi: 10.1016/j.chb.2014.02.002.

[18]   B. Efron and R. J. Tibshirani, *An Introduction to the Bootstrap*. Springer Science+Business Media Dordrecht, 1994. doi: 10.1201/9780429246593.

[19]   F. Abdullah and R. Ward, "Developing a General Extended Technology Acceptance Model for E-Learning (GETAMEL) by analysing commonly used external factors," *Computers in Human Behavior*, vol. 56, pp. 238–256, 2016, doi: 10.1016/j.chb.2015.11.036.

[20]   M. A. Almaiah, M. A. Jalil, and M. Man, "Extending the TAM to examine the effects of quality features on mobile learning acceptance," *Journal of Computers in Education*, vol. 3, no. 4, pp. 453–485, 2016, doi: 10.1007/s40692-016-0074-1.

[21]   F. Kanwal and M. Rehman, "Factors Affecting E-Learning Adoption in Developing Countries-Empirical Evidence from Pakistan's Higher Education Sector," *IEEE Access*, vol. 5, pp. 10968–10978, 2017, doi: 10.1109/ACCESS.2017.2714379.

[22]   T. Teo, M. Zhou, A. C. W. Fan, and F. Huang, "Factors that influence university students' intention to use Moodle: a study in Macau," *Educational Technology Research and Development*, vol. 67, no. 3, pp. 749–766, 2019, doi: 10.1007/s11423-019-09650-x.

[23]   M. Al-Emran, V. Mezhuyev, and A. Kamaludin, "Technology Acceptance Model in M-learning context: A systematic review," *Computers and Education*, vol. 125, pp. 389–412, 2018, doi: 10.1016/j.compedu.2018.06.008.

[24]   F. Andiarna, "Effects of Online Learning on Student Academic Stress During the Covid-19 Pandemic," *Jurnal Psikologi*, vol. 16, no. 2, pp. 139–150, 2020.