Zoom in Online Learning : GETAMEL Implementation of Student Acceptance

Muhammad Rahmat Hidayat[1], Muhammad Raja Siregar[2]

[1] Universitas Teuku Umar, Universitas Labuhanbatu

[2] Universitas Teuku Umar, Universitas Labuhanbatu

Corresponding Author: ✉ m.rahmat@utu.ac.id

| ABSTRACT |
|---|
| This study aims to see student acceptance during online lectures using the Zoom application and see how the Zoom application technology is acceptable in the learning process. The problems that arise are not far from how the digital interaction process is attempted to replace offline interactions where conventional learning usually takes place. The acceptance of information technology with an audio-visual-based learning process that was suddenly forced during the Covid-19 pandemic basically raised concerns over the classroom interaction process that previously dominated the lecture process. The research method implements the GETAMEL model to see how far the admission process occurs to students. All research respondents are cross-semester students who are under the study program in the economics faculty. 90 respondents answered the research questionnaire which was distributed online through the google form application. The results showed that the constructs in GETAMEL basically had an effect on student acceptance behaviour on the technology applied except for the experience variable. Furthermore, subjective norm and enjoyment variables play an important role in the process of student acceptance in using a relatively new technology. |

Kata Kunci | *Technology acceptance, behaviour, GETAMEL*

INTRODUCTION

Since the Covid-19 pandemic spread to Indonesia, the government has mandated the implementation of online-based education. Since it was implemented, there have been various criticisms over the running of online learning in Indonesia (Arosyd & Usman, 2019; Hikmat et al., 2020; Pawicara & Conilie, 2020). Among the most frequently voiced criticisms are fatigue in the face of online education (Pawicara & Conilie, 2020), students were having difficulty comprehending the presented material, and teachers unable to monitoring (Taradisa, Nidia., Jarmita, Nida., 2020), lack of availability of technological devices (Handarini & Wulandari, 2020; Hikmat et al., 2020; Iqbal, 2020) as well as mastery of the applications used (Handarini & Wulandari, 2020; Hikmat et al., 2020; Iqbal, 2020).

Criticism of the classic TAM as a model has been realized primarily in its application to the fields of social, education, and management (Ajibade, 2019;

Liu et al., 2018). Since it was first introduced by Davis (Davis et al., 1989) and enhanced by Venkatesh (Venkatesh & Davis, 2000), TAM is becoming popular as a point of view for seeing how technology users interact with newly implemented information systems (Hornbæk & Hertzum, 2017; Y. Lee et al., 2003; Lim, 2018; Scherer et al., 2019). TAM describes the psychological overview of the user based on three main variables, namely; Perceived Usefulness, Perceived of Use, and Attitude Toward Use (Davis et al., 1989; Y. Lee et al., 2003; Lim, 2018; Scherer et al., 2019; Taherdoost, 2018). TAM directly lowered two main models, namely Igbaria's Model (IM) and Extension of Technology Acceptance Model (ETAM) (Taherdoost, 2018). TAM itself is addition and revision to the Theory of Reasoned Action (TRA) model that has been developed by Fishbein (Alkhwaldi & Kamala, 2017; Davis et al., 1989).
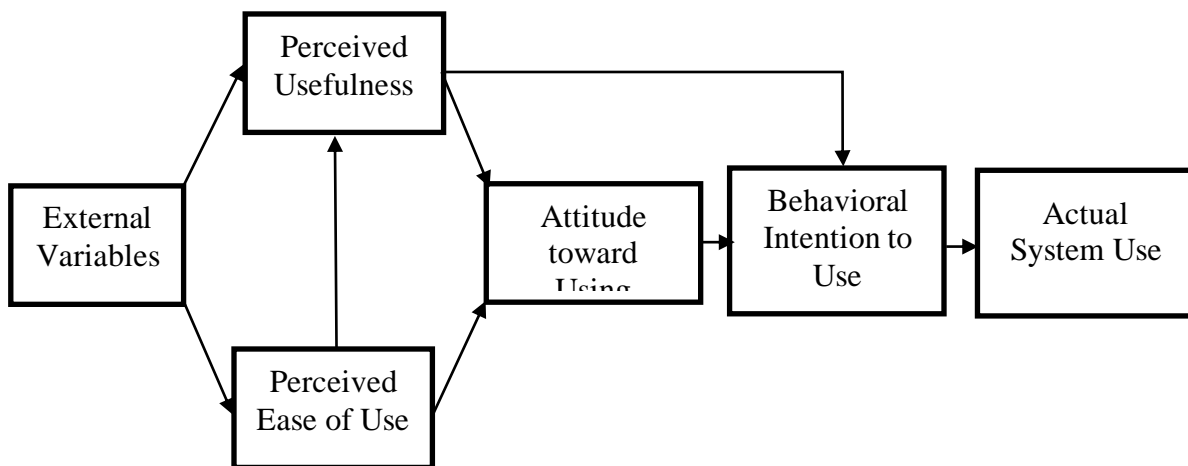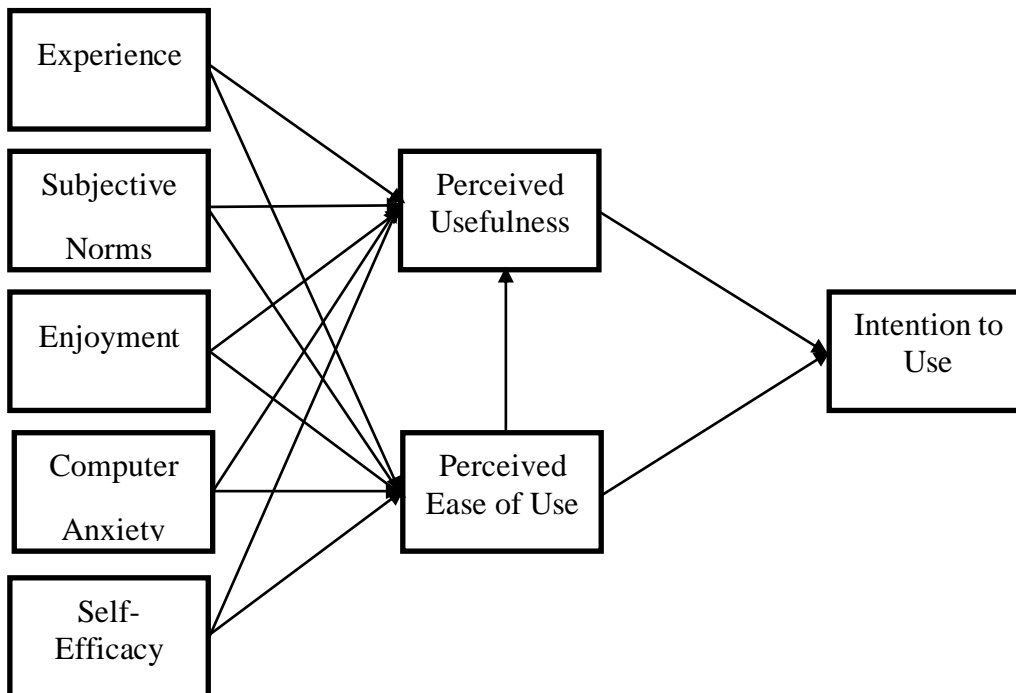

Picture 1.
Technology Acceptance Model (Davis et al., 1989)

Criticism of TAM can be a discourse regarding indications of hedonism in the TAM model where hedonistic characteristics (Jordan, 1998; Pizzi & Scarpi, 2020; Wittek et al., 2019; J. Wu & Lu, 2013; Zainal et al., 2015), it can exist for the system being studied but intrinsic motivators are not considered, nor do hedonistic characteristics exist but intrinsic motivators remain included (Ayyagari, 2006; Szajna, 1996; J. H. Wu & Wang, 2005). A striking and puzzling finding is how Perceived Risk positively affects Behavioral Intention to Use (J. H. Wu & Wang, 2005). Technology and hedonism are related and intertwined and shape the feelings and emotions of its users (Jordan, 1998; Pizzi & Scarpi, 2020; Sun & Zhang, 2021). Information Systems are considered successful based on user experience (Wittek et al., 2019).

GETAMEL was developed by Abdullah and Ward as a test tool for the use of e-portfolios in learners (Abdullah et al., 2016; Ching-Ter et al., 2017).

According to Abdullah and Ward, five external variables often affect Perceived Usefulness and Perceived of Use, namely Subjective Norm, Experience, Perceived Enjoyment, Computer Anxiety, and Self Efficacy (Abdullah et al., 2016; Ching-Ter et al., 2017). Compared to Igbaria's Model and Extension of Technology Acceptance Model (ETAM), GETAMEL includes the use of the software by negating technical skills and microcomputer knowledge in it (M. Igbaria, 1990; Magid Igbaria et al., 1996; Zhang, 2010). The variable determinant is DSS (Decision Support System) (Guimaraes et al., 1992), have the ability to merge with computer technology and risk anxiety over the impact of technology (Zhang, 2010). It can be said that the variables presented by Igbaria's Model and Extension of Technology Acceptance Model (ETAM) are no longer relevant to use in today's technology that is much more user-friendly and GUI-based.
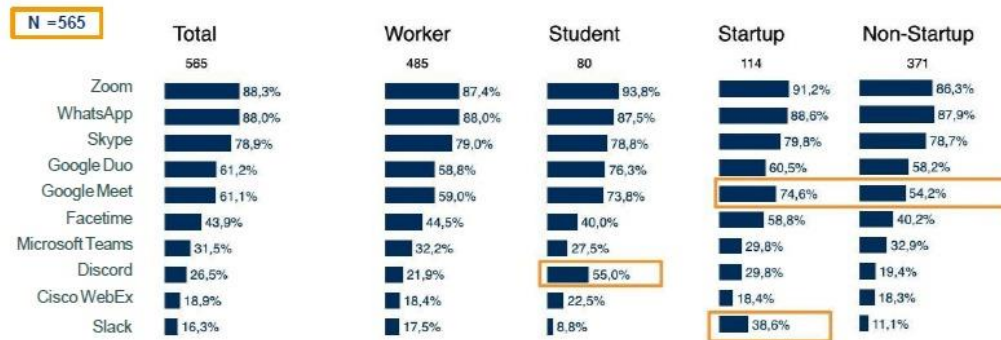

Picture 2.
General Extended Technology Acceptance Model for E-Learning
(Abdullah et al., 2016)

GETAMEL is a form of refinement of the use of TAM as a theoretical paradigm in estimating the behavior of acceptance of technology implementation in education (Abdullah et al., 2016). TAM is tested to demonstrate acceptance behavior towards applying the technology itself

(Abdullah et al., 2016; Al-Gahtani, 2016), especially in the application of e-Class. (Hidayanto et al., 2014) and the application of e-learning (Y. H. Lee et al., 2013; Purnomo & Lee, 2013). Attitude factor that was initially a mediator that stood between Perceived Ease of Use (PEOU), Perceived Usefulness (PU) dan Behaviour Intention (BI) in TAM (Davis et al., 1989) eliminated in the following model (Bhatiasevi, 2011; Giovanis et al., 2012) Because it is considered too weak. PEOU is further declared to have a positive correlation with PU (Kurniabudi et al., 2015). Although reliable, the TAM model has its main disadvantages of not reflecting the variety of environments facing user tasks and their obstacles (Olushola & Abiola, 2017).

The use of a Learning Management System (LMS) is considered suitable for improving learning outcomes (Hikmatiar et al., 2020; Yulfianti & Dewi, 2021). In addition to using LMS, video conference software is needed to appreciate the need for face-to-face online learning (Assidiqi & Sumarni, 2020; Kurniasari et al., 2020; Putra, 2020). Audio-visual media is provided as a supplement to learning through LMS (Kurniasari et al., 2020) and increases learners' enthusiasm to be more interactive (Purnaningsih, 2017; Purwono et al., 2018). There have been at least a dozen software providers of competing video conference facilities since the pandemic spread. Zoom Meeting is the most popular choice to use in a wide variety of needs today.

Brand Awareness: From the top 10 online video conferencing platforms, Google Meet and Slack is more well known amongst startup workers, while Discord is more well known amongst students

N =565	Total	Worker	Student	Startup	Non-Startup
	585	485	80	114	371
Zoom	88,3%	87,4%	93,8%	91,2%	86,3%
WhatsApp	88,0%	88,0%	87,5%	88,6%	87,9%
Skype	78,9%	79,0%	78,8%	79,8%	78,7%
Google Duo	61,2%	58,8%	76,3%	60,5%	58,2%
Google Meet	61,1%	59,0%	73,8%	74,6%	54,2%
Facetime	43,9%	44,5%	40,0%	58,8%	40,2%
Microsoft Teams	31,5%	32,2%	27,5%	29,8%	32,9%
Discord	26,5%	21,9%	55,0%	29,8%	19,4%
Cisco WebEx	18,9%	18,4%	22,5%	18,4%	18,3%
Slack	16,3%	17,5%	8,8%	38,6%	11,1%

Zoom and WhatsApp is the most well known overall. WhatsApp also has video call feature although the participants are not as many as other platforms.

p::pulix

As reported by Populix in June 2020, Zoom is still "the king" of video conference service provider that is in demand by both workers, students, startups, and non-startups. In the world of education, Zoom software is an inevitability to be used as a medium of learning during social distancing that supports the distance learning process (Assidiqi & Sumarni, 2020; Kholifah et al., 2020; Monica & Fitriawati, 2020; Putra, 2020; Rosyid et al., 2020).

General Extended Technology Acceptance Model for E-Learning (GETAMEL) It is an advance model of Technology Acceptance Modelling (TAM), which was first used to see the individual's acceptance of the application of technology to e-Learning (Ching-Ter et al., 2017; Kimathi & Zhang, 2019). Technology Acceptance Modelling (TAM) was introduced in 1986 as a research device for information systems (King & He, 2006; Y. Lee et al., 2003; Nugroho et al., 2017). In the field of education, TAM has been implemented to see the involvement of information systems (Ibrahim et al., 2018; Yeou, 2016), although it is considered still have disadvantages (Ching-Ter et al., 2017; Estriegana et al., 2019; Hussein, 2017; Kimathi & Zhang, 2019).

RESEARCH METHODS
Collected Data
The data collected comes from questionnaires that have been distributed with 91 respondent data collected through Google Form. 1 incomplete questionnaire was filled in which 6 more questionnaires were filled out by alumni and not currently studying who respondents are not needed in this study. All 90 respondents are between the ages of 18 and 26 years old and are still considered representatives of generation Z, who are highly accustomed to using information technology. 37 respondents were male, while the remaining 53 respondents were female. All respondents were first- to fourth-year students. 17 respondents were majoring in Development Economics, 67 in Management, and 6 in Accounting.
Descriptive Statistics
The demographics of respondents collected are displayed in Table 1 where the majority of respondents are female, as many as 53 respondents and male respondents as many as 37 respondents. The average age of respondents was 20.52, with a standard deviation of 1.69. The majority of respondents were 18-23 years old as many as 84 respondents, while the remaining 24-26 years as many as 6 people. The majority of respondents were in the first academic year as many as 46 respondents, the second year as many as 27 respondents, the third year as many as 14 respondents, and the rest of the fourth year as many as 3 respondents. A total of 28 respondents used the Zoom application in the learning process within 1 semester while the remaining 62 respondents used it within 2 semesters. The majority came from Management as many as 67 respondents, Development Economics as many as 17 respondents and Accounting as many as 6 people.

Tabel.1
Demographics of research respondents

Variable	Frequency	Percentile
Sex		
Male	37	41,11
Female	53	58,89
Age		
18 – 23	84	93,33
24 – 26	6	6,67
Academic Year		
1	46	51,11
2	27	30,00
3	14	15,56
4	3	3,33
Duration of using Zoom		
1 semester	28	31,11
2 semesters	62	68,89
Majoring		
Management	67	18,89
Development Economics	17	74,44
Accounting	6	6,67

RESEARCH RESULT AND DISCUSSION

After processing the research data with a Smart-PLS application and a SEM model, the model is validated using a bootstrap approach. The first stage involves evaluating the developed model's reliability and validity, as illustrated in Table 2 below, where the Cronbach's Alpha and average variance extracted values are specified as follows:

Table. 2
Reliability and Factor Loadings

	Cronbach's Alpha	Average Variance Extracted (AVE)
CA	0,8379	0,6424
ENJ	0,9535	0,8719
Intention to Use	0,8355	0,5099
PEOU	0,9198	0,6573
PU	0,9526	0,7696
SE	0,9127	0,7794

SN	0,8915	0,8061
XP	0,7316	0,4864

All variables in the research model have a value greater than 0.7, which is a requirement for the research model's validity. While the AVE value indicates that the study's results are within the range of 0.4864 to 0.8719, where one variable has a value less than 0.5. Following that, to ensure converged validity across constructs, the research model will retain only items with statistically significant factor loading and values greater than 0.50. To assess discriminant validity, which requires low and significant correlations between different aspects, Table 3 presents the square root of the AVE of each latent construction (diagonal number) and the estimation of its correlations (off-diagonal).

Table. 3
Discriminant validity (Fornell-Larcker Criterion)

	CA	ENJ	Intention to Use	PEOU	PU	SE	SN	XP
CA	0,8015							
ENJ	-0,3607	0,9338						
Intention to Use	-0,1590	0,8194	0,7140					
PEOU	-0,4025	0,9058	0,8511	0,8108				
PU	-0,2643	0,7682	0,8685	0,8730	0,8773			
SE	-0,2680	0,8261	0,6854	0,7408	0,5547	0,8828		
SN	-0,1389	0,7702	0,8036	0,7930	0,7193	0,6748	0,8978	
XP	-0,3824	1,0291	0,8492	0,9323	0,8024	0,7814	0,8283	0,6974

After assessing the model's reliability and validity, we derive a relationship from it. Due to the distribution-free assumptions in PLS-SEM, there is no well-fitting standard; model quality is determined by the coefficient of determination (R-squared, with values ranging from 0 to 1 representing predictive accuracy) and path coefficients.

DISCUSSION

According to the findings of the preceding research, we observe students' behavior when they use the Zoom application for online learning, where the experience variable (experience) becomes the primary factor that does not appear to affect their acceptance during the process of using this application. This fact refutes the assertion that experience becomes crucial in the process of receiving technology (Azam et al., 2010; Chan & Storey, 1996; Magid Igbaria et al., 1995; Romm et al., 1996; Szajna, 1996) and strengthen the understanding of the weakness of this variable affects the process of receiving technology.

Subjective Norms and Enjoyment are proven to affect the acceptance process of students further, so they will continue to use this application on a regular basis. Subjective Norms are determined by the perceived social pressure of others in order for individuals to behave in a certain way and become the basis of their motivation to adhere to the person's views (Ham et al., 2015; Peek et al., 2014; Porter & Ganong, 2002). In Planned Behaviour theory, it is explained that an individual's intentions are strongly influenced by personal factors such as attitudes and perceived behavioral control (Ajzen, 2005; Courtney et al., 2008; Peek et al., 2014). Enjoyment affects the process of an individual's acceptance of technology and continues using it (Chao, 2019; Park & Park, 2020). Self-Efficacy, Enjoyment, and Subjective Norms are precisely proven to significantly influence the behavior of acceptance of technology (Winarno et al., 2021).

Computer anxiety plays a not-so-prominent role in both Perceived Ease of Use dan Perceived Usefulness (Dönmez-Turan & Kir, 2019). Although said to be caused by age level, Computer Anxiety does not affect either older or younger users (Dyck & Smither, 1994). Even in some research, Computer Anxiety does not play an important role in the behavior of the use of technological devices (Amiruddin et al., 2021), and tends to be in reverse (Tsai et al., 2020).

CONCLUSION

The results of the study corroborate the conclusion that Perceived Ease of Use affects Perceived of Usefulness (Bashir & Madhavaiah, 2014; Holden & Rada, 2011; M. C. Lee, 2009; Tyas & Darma, 2017), also corroborate the Perceived Ease of Use conclusions affect the behavior of individual acceptance (Bashir & Madhavaiah, 2014; Holden & Rada, 2011; Lai & Li, 2005; Wang et al., 2003). Perceived of Usefulness based on the results of this study confirms the conclusion that it influences Intention to Use (Bashir & Madhavaiah, 2014; Chau & Ngai, 2010; Jahangir & Begum, 2008; Suh & Han, 2002) and is different from conclusions that reject its influence (Tyas & Darma, 2017).

REFERENCE

Abdullah, F., Ward, R., & Ahmed, E. (2016). Investigating the influence of the most commonly used external variables of TAM on students' Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) of e-portfolios. *Computers in Human Behavior*, *63*, 75–90. https://doi.org/10.1016/j.chb.2016.05.014

Ajibade, P. (2019). Technology acceptance model limitations and criticisms: Exploring the practical applications and use in technology-related studies, mixed-method, and qualitative researches. *Library Philosophy and Practice*, *2019*.

Ajzen, I. (2005). *Attitudes, Personality and Behaviour* (2nd ed.). Open University Press.

Al-Gahtani, S. S. (2016). Empirical investigation of e-learning acceptance and assimilation: A structural equation model. *Applied Computing and Informatics*, *12*(1), 27–50. https://doi.org/10.1016/j.aci.2014.09.001

Alkhwaldi, A., & Kamala, M. (2017). Why Do Users Accept Innovative Technologies? A Critical Review of Models and Theories of Technology Acceptance in The Information System Literature. *Journal of Multidisciplinary Engineering Science and Technology (JMEST)*, *4*(8), 2458–9403. www.jmest.org

Amiruddin, Pontoh, G. T., & Sriningsih, E. (2021). Determinants of Attitudes of Computer Users: an Approach to the Technology Acceptance Model and Social Cognitive Theory. *Webology*, *18*, 92–111. https://doi.org/10.14704/WEB/V18SI03/WEB18022

Arosyd, I. M. R., & Usman, R. (2019). *Analisis Kelemahan dan Kekuatan dalam Pembelajaran Daring di Fakultas Sastra Universitas Negeri Malang*. *1*(1), 1–11.

Assidiqi, M. H., & Sumarni, W. (2020). Pemanfaatan Platform Digital di Masa Pandemi Covid-19. *Prosiding Seminar Nasional ...*, 298–303. https://proceeding.unnes.ac.id/index.php/snpasca/article/download/601/519

Ayyagari, R. (2006). Examination of Hedonism in TAM Research. *Information Systems*, 197–204.

Azam, M. S., Quaddus, M., & Rahim, M. (2010). How experience affects technology acceptance: A quest for ICT development strategies in Bangladesh. *Proceedings of 2010 13th International Conference on Computer and Information Technology, ICCIT 2010*, *April 2014*, 289–294. https://doi.org/10.1109/ICCITECHN.2010.5723871

Bashir, I., & Madhavaiah, C. (2014). Revisiting Technology Acceptance Model (TAM) at the Individual Internet Banking Adoption Level. *Metamorphosis:*

A Journal of Management Research, *13*(1), 42–56. https://doi.org/10.1177/0972622520140107

Bhatiasevi, V. (2011). Acceptance of e-learning for users in higher education: An extension of the technology acceptance model. In *Social Sciences* (Vol. 6, Issue 6, pp. 513–520). https://doi.org/10.3923/sscience.2011.513.520

Chan, Y. E., & Storey, V. C. (1996). The use of spreadsheets in organizations: Determinants and consequences. *Information and Management*, *31*(3), 119–134. https://doi.org/10.1016/S0378-7206(96)00008-0

Chao, C. M. (2019). Factors determining the behavioral intention to use mobile learning: An application and extension of the UTAUT model. *Frontiers in Psychology*, *10*(JULY), 1–14. https://doi.org/10.3389/fpsyg.2019.01652

Chau, V. S., & Ngai, L. W. L. C. (2010). The youth market for internet banking services: Perceptions, attitude and behaviour. *Journal of Services Marketing*, *24*(1), 42–60. https://doi.org/10.1108/08876041011017880

Ching-Ter, C., Hajiyev, J., & Su, C. R. (2017). Examining the students' behavioral intention to use e-learning in Azerbaijan? The General Extended Technology Acceptance Model for E-learning approach. *Computers and Education*, *111*, 128–143. https://doi.org/10.1016/j.compedu.2017.04.010

Courtney, K. L., Demiris, G., Rantz, M., & Skubic, M. (2008). Needing smart home technologies: The perspectives of older adults in continuing care retirement communities. *Informatics in Primary Care*, *16*(3), 195–201. https://doi.org/10.14236/jhi.v16i3.694

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, *35*(8), 982–1003. https://doi.org/10.1287/mnsc.35.8.982

Dönmez-Turan, A., & Kir, M. (2019). User anxiety as an external variable of technology acceptance model: A meta-analytic study. *Procedia Computer Science*, *158*, 715–724. https://doi.org/10.1016/j.procs.2019.09.107

Dyck, J. L., & Smither, J. A.-A. (1994). Age Differences in Computer Anxiety: The Role of Computer Experience, Gender and Education. *Journal of Educational Computing Research*, *10*(3), 239–248. https://doi.org/10.2190/e79u-vcrc-el4e-hryv

Estriegana, R., Medina-Merodio, J. A., & Barchino, R. (2019). Student acceptance of virtual laboratory and practical work: An extension of the technology acceptance model. *Computers and Education*, *135*(February), 1–14. https://doi.org/10.1016/j.compedu.2019.02.010

Giovanis, A. N., Binioris, S., & Polychronopoulos, G. (2012). An extension of

TAM model with IDT and security/privacy risk in the adoption of internet banking services in Greece. *EuroMed Journal of Business*, *7*(1), 24–53. https://doi.org/10.1108/14502191211225365

Guimaraes, T., Igbaria, M., & Lu, M. -t. (1992). The Determinants of DSS Success: An Integrated Model. *Decision Sciences*, *23*(2), 409–430. https://doi.org/10.1111/j.1540-5915.1992.tb00397.x

Ham, M., Jeger, M., & Ivković, A. F. (2015). The role of subjective norms in forming the intention to purchase green food. *Economic Research-Ekonomska Istrazivanja* , *28*(1), 738–748. https://doi.org/10.1080/1331677X.2015.1083875

Handarini, O. I., & Wulandari, S. S. (2020). Pembelajaran Daring Sebagai Upaya Study From Home (SFH) Selama Pandemi Covid 19. *Jurnal Pendidikan Administrasi Perkantoran*, *8*(3), 496–503. https://doi.org/10.1093/fampra/cmy005

Hidayanto, A. N., Febriawan, D., Sucahyo, Y. G., & Purwandari, B. (2014). Factors Influencing The Use of E-Class. *Journal of Industrial and Intelligent Information*, *2*(2), 121–125. https://doi.org/10.12720/jiii.2.2.121-125

Hikmat, Hermawan, E., Aldim, & Irwandi. (2020). The Efectivity of Online Learning During Covid-19 Pandemic : An Online Survey. *Digital Library, UIN SUnan Gung Djati, Bandung*, 1–7. http://digilib.uinsgd.ac.id/30625/

Hikmatiar, H., Sulisworo, D., & Wahyuni, M. E. (2020). Pemanfaatan Learning Manegement System Berbasis Google Classroom Dalam Pembelajaran. *Jurnal Pendidikan Fisika*, *8*(1). https://doi.org/10.26618/jpf.v8i1.3019

Holden, H., & Rada, R. (2011). Understanding the influence of perceived usability and technology self-efficacy on teachers' technology acceptance. *Journal of Research on Technology in Education*, *43*(4), 343–367. https://doi.org/10.1080/15391523.2011.10782576

Hornbæk, K., & Hertzum, M. (2017). Technology acceptance and user experience: A review of the experiential component in HCI. *ACM Transactions on Computer-Human Interaction*, *24*(5). https://doi.org/10.1145/3127358

Hussein, Z. (2017). Leading to Intention: The Role of Attitude in Relation to Technology Acceptance Model in E-Learning. *Procedia Computer Science*, *105*(December 2016), 159–164. https://doi.org/10.1016/j.procs.2017.01.196

Ibrahim, R., Leng, N. S., Yusoff, R. C. M., Samy, G. N., Masrom, S., & Rizman, Z. I. (2018). E-learning acceptance based on technology acceptance model (TAM). *Journal of Fundamental and Applied Sciences*, *9*(4S), 871. https://doi.org/10.4314/jfas.v9i4s.50

Igbaria, M. (1990). End-user computing effectiveness: A structural equation

model. *Omega*, *18*(6), 637–652. https://doi.org/10.1016/0305-0483(90)90055-E

Igbaria, Magid, Guimaraes, T., & Davis, G. B. (1995). Testing the Determinants of Microcomputer Usage via a Structural Equation Model. *Journal of Management Information Systems*, *11*(4), 87–114. https://doi.org/10.1080/07421222.1995.11518061

Igbaria, Magid, Parasuraman, S., & Baroudi, J. J. (1996). A Motivational Model of Microcomputer Usage. *Journal of Management Information Systems*, *13*(1), 127–143. https://doi.org/10.1080/07421222.1996.11518115

Iqbal, M. (2020). Penguasaan Aplikasi Pembelajaran Daring Guru Aceh di Masa Pandemi. *Journal of STEM Education*, *12*(5), 23–38. file:///Users/ruthsc/Downloads/out (1).pdf

Jahangir, N., & Begum, N. (2008). The role of perceived usefulness, perceived ease of use, security and privacy, and customer attitude to engender customer adaptation in the context of electronic banking. *African Journal of Business Management*, *2*(2), 032–040.

Jordan, P. W. (1998). Human factors for pleasure in product use. *Applied Ergonomics*, *29*(1), 25–33. https://doi.org/10.1016/S0003-6870(97)00022-7

Kholifah, N., Christy, A., Gadi, Z., Emy, S., Suprihatin, Y., & Zuhnikhayati, E. (2020). *Penggunaan Zoom Cloud Meeting Sebagai Alternatif*.

Kimathi, F. A., & Zhang, Y. (2019). Exploring the General Extended Technology Acceptance Model for e-Learning Approach on Student's Usage Intention on e-Learning System in University of Dar es Salaam. *Creative Education*, *10*(01), 208–223. https://doi.org/10.4236/ce.2019.101017

King, W. R., & He, J. (2006). A meta-analysis of the technology acceptance model. *Information and Management*, *43*(6), 740–755. https://doi.org/10.1016/j.im.2006.05.003

Kurniabudi, Sharipuddin, & Assegaff, S. (2015). A Literature Review: Acceptance Models for e-learning Implementation in Higher Institution. *Proceedings of the 2014 International Conference on Advances in Education Technology*, *11*(October). https://doi.org/10.2991/icaet-14.2014.20

Kurniasari, A., Pribowo, F. S. P., & Putra, D. A. (2020). Analisis Efektivitas Pelaksanaan Belajar Dari Rumah (Bdr) Selama Pandemi Covid-19. *Jurnal Review Pendidikan Dasar: Jurnal Kajian Pendidikan Dan Hasil Penelitian*, *6*(3), 1–8.

Lai, V. S., & Li, H. (2005). Technology acceptance model for internet banking: An invariance analysis. *Information and Management*, *42*(2), 373–386. https://doi.org/10.1016/j.im.2004.01.007

Lee, M. C. (2009). Factors influencing the adoption of internet banking: An

integration of TAM and TPB with perceived risk and perceived benefit. *Electronic Commerce Research and Applications*, *8*(3), 130–141. https://doi.org/10.1016/j.elerap.2008.11.006

Lee, Y. H., Hsieh, Y. C., & Chen, Y. H. (2013). An investigation of employees' use of e-learning systems: Applying the technology acceptance model. *Behaviour and Information Technology*, *32*(2), 173–189. https://doi.org/10.1080/0144929X.2011.577190

Lee, Y., Kozar, K. A., & Larsen, K. R. T. (2003). The Technology Acceptance Model: Past, Present, and Future. *Communications of the Association for Information Systems*, *12*(December). https://doi.org/10.17705/1cais.01250

Lim, W. M. (2018). Research Note Dialectic Antidotes to Critics of the Technology Acceptance Model 1. *Australasian Journal of Information Systems Lim*, *22*, 1–10.

Liu, D., Lu, W., & Niu, Y. (2018). Extended Technology-Acceptance Model to Make Smart Construction Systems Successful. *Journal of Construction Engineering and Management*, *144*(6), 04018035. https://doi.org/10.1061/(asce)co.1943-7862.0001487

Monica, J., & Fitriawati, D. (2020). Efektivitas Penggunaan Aplikasi Zoom Sebagai Media Pembelajaran Online Pada Mahasiswa Saat Pandemi Covid-19. *Jurnal Communio : Jurnal Jurusan Ilmu Komunikasi*, *9*(2), 1630–1640. https://doi.org/10.35508/jikom.v9i2.2416

Nugroho, A. H., Bakar, A., & Ali, A. (2017). Analysis of Technology Acceptance Model: Case Study of Traveloka Arthatama. *Journal of Business Management and Accounting*, *1*(1), 27–34.

Olushola, T., & Abiola, J. O. (2017). The Efficacy of Technology Acceptance Model: A Review of Applicable Theoretical Models in Information Technology Researches. *Quest Journals Journal of Research in Business and Management*, *4*(11), 2347–3002.

Park, E. S., & Park, M. S. (2020). Factors of the technology acceptance model for construction IT. *Applied Sciences (Switzerland)*, *10*(22), 1–15. https://doi.org/10.3390/app10228299

Pawicara, R., & Conilie, M. (2020). Analisis Pembelajaran Daring Terhadap Kejenuhan Belajar Mahasiswa Tadris Biologi Iain Jember di Tengah Pandemi Covid-19. *ALVEOLI: Jurnal Pendidikan Biologi*, *1*(1), 29–38.

Peek, S. T. M., Wouters, E. J. M., van Hoof, J., Luijkx, K. G., Boeije, H. R., & Vrijhoef, H. J. M. (2014). Factors influencing acceptance of technology for aging in place: A systematic review. *International Journal of Medical Informatics*, *83*(4), 235–248. https://doi.org/10.1016/j.ijmedinf.2014.01.004

Pizzi, G., & Scarpi, D. (2020). Privacy threats with retail technologies: A

consumer perspective. *Journal of Retailing and Consumer Services*, *56*(May), 102160. https://doi.org/10.1016/j.jretconser.2020.102160

Porter, E. J., & Ganong, L. H. (2002). Considering the use of a personal emergency response system: An experience of frail, older women. *Care Management Journals*, *3*(4), 192–198. https://doi.org/10.1891/cmaj.3.4.192.57452

Purnaningsih, P. (2017). Strategi Pemanfaatan Media Audio Visual Untuk Peningkatan. *Jurnal Informatika Universitas Pamulang*, *2*(1), 34–41. https://www.researchgate.net/publication/336117416_Strategi_Pemanfa atan_Media_Audio_Visual_untuk_Peningkatan_Hasil_Belajar_Bahasa_Ing gris/link/5d8f5a0b299bf10cff15989b/download

Purnomo, S. H., & Lee, Y. H. (2013). E-learning adoption in the banking workplace in Indonesia: An empirical study. *Information Development*, *29*(2), 138–153. https://doi.org/10.1177/0266666912448258

Purwono, J., Yutmini, S., & Anitah, S. (2018). Penggunaan Media Audio-Visual pada Mata Pelajaran Ilmu Pengetahuan Alam di Sekolah Menengah Pertama Negeri 1 Pacitan. *Jurnal Teknologi Pendidikan Dan Pembelajaran*, *2*(2), 127–144.

Putra, N. P. (2020). Solusi Pembelajaran Jarak Jauh Menggunakan Aplikasi Zoom Dan Whatsapp Group Di Era New Normal Pada Warga Belajar Paket C Di Pusat Kegiatan Belajar Masyarakat (Pkbm) Bina Insani. *Jipsindo*, *7*(2), 162–176. https://doi.org/10.21831/jipsindo.v7i2.34939

Romm, C. T., Pliskin, N., & Rifkin, W. D. (1996). Diffusion of E-mail: An organisational learning perspective. *Information and Management*, *31*(1), 37–46. https://doi.org/10.1016/S0378-7206(96)01070-1

Rosyid, N. M., Thohari, I., & Lismanda, Y. F. (2020). Penggunaan Aplikasi Zoom Cloud Meetings Dalam Kuliah Statistik Pendidikan di Fakultas Agama Islam Universitas Islam Malang. *Jurnal Pendidikan Islam*, *5*(11), 47–52.

Scherer, R., Siddiq, F., & Tondeur, J. (2019). The technology acceptance model (TAM): A meta-analytic structural equation modeling approach to explaining teachers' adoption of digital technology in education. *Computers and Education*, *128*, 13–35. https://doi.org/10.1016/j.compedu.2018.09.009

Suh, B., & Han, I. (2002). E ffect of trust on customer acceptance of Internet banking. *Electronic Commerce Research and Applications*, *1*(3–4), 9.

Sun, Y., & Zhang, H. (2021). What Motivates People to Pay for Online Sports Streaming? An Empirical Evaluation of the Revised Technology Acceptance Model. *Frontiers in Psychology*, *12*(May), 1–11.

https://doi.org/10.3389/fpsyg.2021.619314

Szajna, B. (1996). Empirical evaluation of the revised technology acceptance model. *Management Science*, *42*(1), 85–92. https://doi.org/10.1287/mnsc.42.1.85

Taherdoost, H. (2018). A review of technology acceptance and adoption models and theories. *Procedia Manufacturing*, *22*, 960–967. https://doi.org/10.1016/j.promfg.2018.03.137

Taradisa, Nidia., Jarmita, Nida., E. (2020). Kendala Yang Dihadapi Guru Mengajar Daring Pada Masa Pandemi COvid 19 MIN 5 Banda Aceh. *UIN Ar-Raniry Banda Aceh*, *1*(1), 23.

Tsai, T. H., Lin, W. Y., Chang, Y. S., Chang, P. C., & Lee, M. Y. (2020). Technology anxiety and resistance to change behavioral study of a wearable cardiac warming system using an extended TAM for older adults. *PLoS ONE*, *15*(1), 1–24. https://doi.org/10.1371/journal.pone.0227270

Tyas, E. I., & Darma, E. S. (2017). Pengaruh Perceived Usefulness, Perceived Ease of Use, Perceived Enjoyment, dan Actual Usage Terhadap Penerimaan Teknologi Informasi: Studi Empiris Pada Karyawan Bagian Akuntansi dan Keuangan Baitul Maal Wa Tamwil Wilayah Daerah Istimewa Yogyakarta. *Reviu Akuntansi Dan Bisnis Indonesia*, *1*(1), 25–35. https://doi.org/10.18196/rab.010103

Venkatesh, V., & Davis, F. D. (2000). Theoretical extension of the Technology Acceptance Model: Four longitudinal field studies. *Management Science*, *46*(2), 186–204. https://doi.org/10.1287/mnsc.46.2.186.11926

Wang, Y. S., Wang, Y. M., Lin, H. H., & Tang, T. I. (2003). Determinants of user acceptance of Internet banking: An empirical study. In *International Journal of Service Industry Management* (Vol. 14, Issue 5). https://doi.org/10.1108/09564230310500192

Winarno, W. A., Mas'ud, I., & Palupi, T. W. (2021). Perceived Enjoyment, Application Self-efficacy, and Subjective Norms as Determinants of Behavior Intention in Using OVO Applications. *Journal of Asian Finance, Economics and Business*, *8*(2), 1189–1200. https://doi.org/10.13106/jafeb.2021.vol8.no2.1189

Wittek, D., Wiesche, M., Goffart, K., & Krcmar, H. (2019). Theory-Based Affordances of Utilitarian, Hedonic and Dual-Purposed Technologies: A Literature Review. *Wirtschaftsinformatik*, *2*, 1205–1219.

Wu, J. H., & Wang, S. C. (2005). What drives mobile commerce? An empirical evaluation of the revised technology acceptance model. *Information and Management*, *42*(5), 719–729. https://doi.org/10.1016/j.im.2004.07.001

Wu, J., & Lu, X. (2013). Effects of extrinsic and intrinsic motivators on using utilitarian, hedonic, and dual-purposed information systems: A meta-analysis. *Journal of the Association for Information Systems*, *14*(3), 153–191. https://doi.org/10.17705/1jais.00325

Yeou, M. (2016). An Investigation of Students' Acceptance of Moodle in a Blended Learning Setting Using Technology Acceptance Model. *Journal of Educational Technology Systems*, *44*(3), 300–318. https://doi.org/10.1177/0047239515618464

Yulfianti, S. Y., & Dewi, R. M. (2021). Efek Learning Management System Berbasis Google Classroom dan Minat Belajar Terhadap Hasil Belajar Ekonomi Siswa. *Jurnal Kependidikan: Jurnal Hasil Penelitian Dan Kajian Kepustakaan*, *7*(2), 491–502.

Zainal, A., Sagala, G. H., Muhamad, R., & Lumpur, K. (2015). The interchanges of hedonic-utilitarian values toward information system-users satisfaction: a case of social media users. *APJCECT*, *1*(1), 167–178.

Zhang, E. M. (2010). Understanding the Acceptance of Mobile SMS Advertising among Young Chinese Consumers. *Psychology & Marketing*, *30*(6), 461–469. https://doi.org/10.1002/mar