

The influence of motivation and habit on acceptance of elementary school students using Google Classroom

Zulherman, Putri Alya Diana, Ikbar Salsabila, Elsa Ananda Putri, Hanifah May Wisuda Ashari, Mardhiyah Widya Ningsih

Faculty of Education, Universitas Muhammadiyah Prof. DR. HAMKA, Jakarta, Indonesia

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ABSTRACT

This study aimed to prove the factors that influence elementary school students' interest in using the Google Classroom platform. This study also used a technology acceptance model (TAM) theory approach by adding external variables, namely motivation and habit, to the study. The survey method was conducted to collect data from 209 elementary school students. We analyzed the data using the structural equation modeling (SEM) PLS 3.0 application. The study's results showed that one hypothesis was rejected: Motivation had no significant effect on perceived usefulness. In contrast, the other seven hypotheses had a significant positive effect. Research suggested that the habit factor fits the theoretical approach of the TAM model.

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Corresponding Author:

Zulherman

Faculty of Education, Universitas Muhammadiyah Prof. DR. HAMKA

Tanah Merdeka street, Ciracas, East Jakarta 13830, Indonesia

Email: zulherman@uhamka.ac.id

1. INTRODUCTION

At the beginning of 2020, the world was rocked by COVID-19, which infected more than forty million people [1], and the virus spread and spread in Wuhan on January 20 and February 5, 2020 [2]. In a short time, the COVID-19 virus has spread in various parts of the world and requires every community to maintain social distance [3], [4]. The spread of COVID-19 until has had an impact on the education sector throughout the world. Learning activities previously carried out offline require every educational institution to implement an online learning system. A circular confirms minister of education and culture of the Republic of Indonesia number 3 of 2020, which aims to break the chain of transmission of COVID-19 scope of education. Therefore, all educational institutions decide on teaching and learning activities through the online learning system at home [5], [6].

Online learning had to be carried out to reduce the transmission of COVID-19. Utilization of technology is used as a learning tool that can be carried out anywhere, including at home. Technology creates several platforms and e-learning to facilitate online learning activities [7], [8]. Distance learning can be done quickly with the support of technological developments in the application of distance learning can be done quickly by utilizing technology as a learning tool [9], [10]. E-learning and various learning support platforms, such as WhatsApp, Zoom, Google Classroom, and Moodle. Previous researchers have also stated that this technology-based online learning can build many opportunities in the learning process and can also build interactions between teachers and students [11], [12].

Now, online learning systems are supported by internet access and technological devices [13]. Of course, it cannot be separated from using digital learning platforms and technology. There are many choices of platforms and e-learning that can be used in online learning [14]. It is corroborated by the opinion of Appbrain.com, which states that Google Classroom is ranked first with the highest number of downloads and usage in Indonesia [15]. Google Classroom is an online platform that was created in 2014. This application can be accessed on various devices. Google Classroom is widely used because it can facilitate teachers and students in online learning activities at every level of education [5]. Google Classroom is a learning platform used for online learning and is considered capable of facilitating teachers and students facilitate online learning with the various features provided [16]. Previous literature also proves that the use of the Google Classroom platform can positively increase student motivation to be more active in learning activities [17]. Another finding is that using the Google Classroom platform can increase motivation and student learning habits and positively impact student learning outcomes [18]. Based on the technology acceptance model (TAM), our study aims to find out what makes elementary school students want to use the Google Classroom application for learning activities and what habits they have when they do.

We adopted the TAM model by adding an external factor, namely motivation, because motivational factors will have an impact on student attitudes during learning activities. Another external factor adopted from research is habit [19], which also applies to elementary school students in online learning activities. This factor is crucial because it will make a student's attitude consistent in learning [20]. As presented in Figure 1, adding two variables for motivation and habit, we see a novelty in this research. So, we hope that these findings will contribute to knowledge.

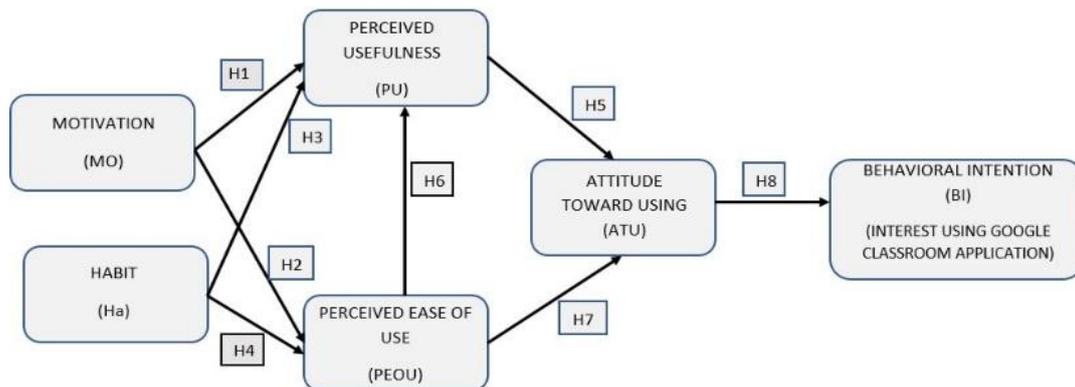


Figure 1. Proposed research model

Motivation (Mo) is a complex psychological perception linked to balanced emotional, cognitive, and personality actions that will affect individual behavior. In our opinion, the source of power to encourage, direct, and limit individual behavior in behavior [21], using an external variable, namely motivation, was adopted from previous research [15]. So, this is the justification for the research, so we propose the following hypothesis: Does motivation have a positive effect on perceived usefulness (PU)? (H1) and does motivation have a positive effect on perceived ease of use (PEOU)? (H2). The application of the system is greatly influenced by individual (student) perceptions in determining attitudes, the ease of use and usefulness factors are important factors [22]. Therefore, the justification for the hypothesis is: Do habits have a positive effect on PU? (H3) and do habits have a positive effect on PEOU? (H4).

Perceived usefulness (PU) is the perceived trustworthiness of the user when using technology to improve performance in a job [23]. A person will continue to use an application if they believe that the application can indeed help improve their performance. It can be concluded that the attitude towards the use of technology is positive or negative depending on how users feel when using technology in learning or teaching activities [24]. Therefore, the justification for the hypothesis is: Does PU have a positive effect on attitude toward using? (H5).

Perceived ease of use (PEOU) is a user's perception that using an application can make it easier and free from effort in doing a job [23]. This perception can also be said to the user's perception of trust that using an application can facilitate his work. This perception explains that a system can complete a person's task or work faster [15]. Therefore, the justification for the hypothesis is as: Does PEOU positively affect PU? (H6) and does PEOU positively affect attitude toward using (ATU)? (H7).

The perception of individuals provides feedback on the use of technology-based learning applications. The application of the system quickly impacts students, especially how much they spend studying and doing learning activities and how many results they want [22]. Therefore, the justification for the hypothesis is: Does attitude toward using (ATU) have a positive effect on behavior intention (BI) to use Google Classroom? (H8).

2. RESEARCH METHOD

2.1. Participants

Data collection in this study was collected by a Google Forms questionnaire obtained from fourth-grade elementary school students in Jakarta, Indonesia. As shown in Table 1, as many as 209 students actively use the Google Classroom application as a learning support platform. This study focuses on students as objects studied on interest in using the Google Classroom based on the TAM model theory. Table 1 shows the profile of elementary school students as respondents.

Table 1. Respondent demographics

Demographic		Frequency	Percentage
Gender	Male	120	57%
	Female	89	43%
Age	9 years old	2	1%
	10 years old	57	27%
	11 years old	74	35%
	12 years old	69	33%
	13 years old	6	3%
	14 years old	1	0.5%
Class	4A	26	12%
	4B	30	14%
	4C	29	13%
	5A	33	15%
	5B	30	14%
	5C	31	14%
	5D	30	14%

2.2. Collecting data

In this study, we cooperated with Indonesian primary schools in Depok and Jakarta to give questionnaires to pupils. The questionnaire measures 27 questions in six construct models using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Due to the school's inadequate computer resources, it takes 20–30 minutes for students to complete the questionnaire. Due to the absence of a few students, 209 out of 215 pupils have completed the questionnaire.

2.3. Measuring

Partial least squares (PLS) is a well-known method for evaluating the path coefficients of structural models. It has gained popularity in research over the past decade due to its capacity to model latent structures under irregular and small-to-moderate sample sizes [25]. However, PLS research has been conducted and proven to be an appropriate component of this study. This study used the structural equation modeling (SEM) approach of the PLS Program version 3.0 [26] to analyze the data. PLS methodology is also utilized to evaluate the set, weights, and path coefficients and to determine the significance hypothesis using the bootstrap technique (5000 samples). The measurement model is precise and efficient for empirical validation methods of the structural model's structure dependence [27]. The utilized method permits the development and evaluation of the proposed theoretical framework's dependability.

3. RESULTS AND DISCUSSION

3.1. Reliability measurement

In this study, we assessed the dependability of each indicator for each of these variables using the conventional loading factor to evaluate the validity of the subsequent study model. Composite reliability (CR) and average variance extracted (AVE) were employed. The utilized standard value reflects the significant association between the indicator and the value of the latent variable. In Table 2, we have also used the CR value in conjunction with an "excellent" standard rating if the reliability value CR is more significant than 0.70. If the value is greater than the threshold, it can be claimed that the variable's indicator is

dependable or perfect [28]. If the AVE value is more significant than 0.5, it can be claimed that the latent variable has high reliability [29]. The confirmatory factor analysis (CFA) calculations performed in this work have facilitated the identification of factor structures in item variables. We found that the hypothesis has a significant effect with a significance level of 5% and a P value of 0.05 [30].

Based on Table 2, the loading factor has met the value of above 0.7. It also meets the Cronbach alpha of above 0.7. The lowest CR value is 0.826 on the habit variable, and the highest is 0.898 on the PEOU variable, which has also fulfilled the value above 0.7. Finally, the lowest AVE value of 0.542 on Habit and the highest AVE value of 0.682 on the ATU variable, with a limit value of 0.5, have met the criteria.

Table 2. Reliability measurement

Variable	Items	Loadings	Cronbach's alpha	CR	AVE
Motivation	Mo1	0.726	0.700	0.833	0.626
	Mo2	0.826			
	Mo3	0.817			
Habit	H1	0.763	0.720	0.826	0.542
	H2	0.717			
	H3	0.735			
	H4	0.729			
PU	PU1	0.830	0.827	0.885	0.659
	PU3	0.807			
	PU4	0.783			
	PU5	0.825			
PEOU	PEOU1	0.768	0.863	0.898	0.594
	PEOU2	0.777			
	PEOU3	0.776			
	PEOU4	0.779			
	PEOU5	0.783			
	PEOU6	0.740			
ATU	ATU1	0.884	0.843	0.895	0.682
	ATU2	0.880			
	ATU3	0.769			
	ATU4	0.763			
BI	BI1	0.754	0.836	0.884	0.605
	BI2	0.837			
	BI3	0.801			
	BI4	0.755			
	BI5	0.736			

3.2. Discriminant validity

Discriminant validity is used to see the value of cross-loading between indicators and their constructs. So, to find out if each latent model has differences from other variables, validity testing is carried out to determine how valid the measuring instrument [26]. In Table 3, the results of this calculation are an alternative to the results of the AVE test and the Fornell-Larcker criterion correlation. It can be seen that the discriminant validity value has met the criteria, the result is good. After this discriminant test, we increasingly know that the data obtained is good. Therefore, the research will proceed to the next stage.

Table 3. Discriminant validity

Path	ATU	PU	PEOU	BI	Habit	Motivation
ATU	0.826					
PU	0.749	0.812				
PEOU	0.840	0.777	0.771			
BI	0.829	0.729	0.846	0.778		
Habit	0.723	0.742	0.799	0.777	0.736	
Motivation	0.609	0.602	0.648	0.614	0.641	0.791

3.3. Hypothesis testing

As showed in Table 4, we tested the hypothesis using the smart-PLS tool, which employs a bootstrapping strategy. Therefore, 500 repetitions of data calculations were performed [25]. The hypothesis can be considered significant with a 5% significance level and a P-value of 0.05 [27], [31]. The hypothesis testing the will be carried out as many as eight hypotheses.

Table 4. Hypothesis testing

Hypothesis	Path	Std. Betta	Std. Error	T-value	P-value	Bias	Confidence interval		Results
							5%	95%	
H1	Mo>PU	0.107	0.083	1.288	0.099	-0.006	0.072	0.405	Not supported
H2	Mo>PEOU	0.230	0.069	3.333	0.000	-0.010	-0.017	0.255	Supported
H3	Ha>PU	0.298	0.112	2.671	0.004	-0.000	0.107	0.334	Supported
H4	Ha>PEOU	0.652	0.056	11.629	0.000	-0.003	0.105	0.473	Supported
H5	PU>ATU	0.244	0.103	2.378	0.009	0.007	0.567	0.753	Supported
H6	PEOU>PU	0.469	0.111	4.241	0.000	0.000	0.267	0.640	Supported
H7	PEOU>ATU	0.650	0.090	7.207	0.000	0.001	0.498	0.796	Supported
H8	ATU>BI	0.829	0.037	22.724	0.000	0.010	0.768	0.886	Supported

Based on Table 4, it showed the hypothesis testing. From H1 to H8, eight hypotheses have been tested. It was known that seven hypotheses were supported, and only one was rejected in H1. Meanwhile, the smallest T-value was 1.288 on H1, and the highest was 22.724 on H8. If the P-value were below 0.05, the P-value would meet the criteria, and if it were more than 0.05, it would not. In Table 4, it was clear that only H1 was not met because of the value of $P=0.099$. In contrast, H2 to H8 have been fulfilled.

The data in statistical hypothesis testing shows that there is an insignificant effect on H1 Motivation>PU because of the value (β 1.288) and P value (0.099). The H1 is supported by research from [21]. The findings do not align with previous research, which has shown that motivational factors positively affect this study. Furthermore, in H2 (Motivation>PEOU), with a value of (β 3.333) and with a P-value of (0.000), the following results have a significant positive effect [32]. Also, the motivation variable is used [33]. The results of this study indicate that students feel motivated to use the Google Classroom application, and the use of Google Classroom has a positive effect on perceptions of usefulness and convenience for students while learning to use the Google Classroom application. This Motivation factor is also reinforced by a study conducted by [33]. So, based on the calculations, we can say that the PU and ease of use of Google Classroom can make students more interested in learning.

In H3 Habit>PU, the calculation of the results of H3 is with a value of 2.671 and a P value of 0.004, so the results can be said to be significant. It is contrary to research from [34]. However, H3 is supported by research [20], [35], which is similar to the results of this study. In his research on Habit>PU, the results have a positive or significant effect. It indicates that using the Google Classroom application can improve students' habits in student learning activities and affect the usefulness of the tools they use. Therefore, Google Classroom helps help students with their learning activities. In H4, namely Habit>PEOU, the results of the calculation β 11.629, and the P value is (0.000), meaning that the hypothesis value has a positive or significant effect, so this result is supported by research from [20]. It can be concluded that H4 is relevant, and learning habits acquired by using the Google Classroom application can be easily used by students in carrying out the use of the Google Classroom platform.

In H5 is PU>ATU with a result of 2.378 and a P value of 0.009, indicating that the hypothesis value is significant. It demonstrates that usability substantially impacts user attitudes toward Google Classroom. This study is bolstered by the fact that its significant findings are identical to those of previous findings [20], [36] in their study "PU>ATU." H5's conclusion is pretty pertinent. In H6, PEOU is more significant than PU, with a result value of 4.24 and a P value of 0.000, which is acceptable or significant and supports studies employing the TAM theory. These findings demonstrate that the Google Classroom application has PEOU has a positive and statistically significant effect on PU and the perpetrator's desire to continue using the Google Classroom program for e-learning. Therefore, the perception of simplicity positively influences the attitude toward utilizing the Google Classroom program. These findings are confirmed by the original theory of TAM [37], [38], as well as additional studies [39], [40]. Moreover, the conclusion is the notion of influence's simplicity, which assists pupils in following the learning process.

In H7, the relationship between PEOU and ATU is substantial. It is corroborated by the hypothesis test results, which yielded a value of 7.207 and a p-value of (0.000). However, this discovery contradicts previous study [15]. However, research conducted by [41]–[43] demonstrates that "PEOU>attitude toward positive or significant effect." Students' interest in utilizing the Google Classroom application during the learning process is quantified by comparing the three results to this study's research findings. In H8, ATU>BI produce the following test values: 22.724 and p-value (0.000), the results have a significant effect. Students' attitudes towards using the application have a significant effect on students' interest in using the Google Classroom application during the learning process. For H8, this is supported by research conducted by the same [44], ATU>BI, with significant results in this study, supported by research conducted by [45]. The conclusion is that there is a significant effect of attitudes on students' interest in using Google Classroom.

4. CONCLUSION

This research found that the factors that influence students' use of Google Classroom are habits, perceptions of convenience, usefulness, and attitudes that affect interest. However, motivation has not shown any influence due to external factors. So that further research recommendations, motivation, and the addition of other variables can be continued.

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BIOGRAPHIES OF AUTHORS



Zulherman     is a researcher of Faculty Education at Universitas Muhammadiyah Prof. DR. HAMKA, Indonesia. His areas of interest include Educational Technology. He can be contacted at email: zulherman@uhamka.ac.id.



Putri Alya Diana    is a Bachelor Candidate, Elementary school teacher education program, Universitas Muhammadiyah Prof. DR. HAMKA, Indonesia. She interests in acceptance technology at Elementary school. She can be contacted at email: putrialyadiana@uhamka.ac.id.



Ikbar Salsabila    is a Bachelor Candidate, Elementary school teacher education program, Universitas Muhammadiyah Prof. DR. HAMKA, Indonesia. She interests in acceptance technology at elementary school. She can be contacted at email: ikbarsalsabila@uhamka.ac.id.



Elsa Ananda Putri    is a Master Student, Elementary education program, Universitas Muhammadiyah Prof. DR. HAMKA, Indonesia. She is also a teacher at SDN Batu Ampar 02, Jakarta, Indonesia. She interests in acceptance technology at Elementary school. She can be contacted at email: elsa.ap@uhamka.ac.id.



Hanifah May Wisuda Ashari    is a Bachelor Degree, Elementary school teacher education program, Universitas Muhammadiyah Prof. DR. HAMKA, Indonesia. She can be contacted at email: hanifahmaywa@uhamka.ac.id.



Mardhiyah Widya Ningsih    is a Bachelor Degree, Elementary education program, Universitas Muhammadiyah Prof. DR. HAMKA, Indonesia. She is also a teacher at SDN Depok 06, Indonesia. She can be contacted at email: mardhiyahwidyan@uhamka.ac.id.