

Competency as one of the Predictors that Influence Google Classroom Usage

*I Made Budiasa
Tourism Departement
Politeknik Negeri Bali
Denpasar, Indonesia
madebudiasa@pnb.ac.id

I Ketut Suparta
Tourism Departement
Politeknik Negeri Bali
Denpasar, Indonesia
ktutsuparta@pnb.ac.id

Nyoman Mastiani Nadra
Tourism Departement
Politeknik Negeri Bali
Denpasar, Indonesia
mastianinadra.pnb.ac.id

Abstract— The outbreak of the Corona-19 virus has forced lecturers and students to carry out online learning with various communication media, one of which is Google Classroom (GC). The objectives of this study is to investigate predictors that affect GC adoption/usage. The method used in this research is a survey method using a questionnaire with Google Form for 200 GC users at Tourism Department of Politeknik Negeri Bali which includes lecturers, students and related staffs. Data analysis was carried out quantitatively with the help of SPSS. The theoretical basis used is TAM (Technology Acceptance Model) with antecedent variables, namely Perceived Ease of Use, Perceived Usefulness, Perceived Risk and Competency. The result of the analysis in this study indicate that Perceived Ease of Use, Perceived Usefulness and Competency are predictors that affect the use of Google Classroom in learning at Tourism Department of Politeknik Negeri Bali. While Perceived Risk is not predictor that significantly influencing GC usage behavior at Tourism Department of Politeknik Negeri Bali.

Keywords—*ICT adoption; Google Classroom; predictor; tourism learning*

I. INTRODUCTION

Based on data reported by destinations around the world, the number of international tourist arrivals (overnight visitors) according to UNWTO grew 4% in 2019 to 1.5 billion, but in 2020 it fell 74% due to the COVID 19 outbreak [1], [2]. The Corona-19 virus outbreak that has taken place since the beginning of 2020 has forced lecturers and students to carry out online learning with various communication media such as WhatsApp, Zoom, Google Meet, Google Classroom and so on. Each lecturer at the Tourism Department of Bali State Polytechnic uses a variety of online learning media, making it difficult for students to install many applications, both on their cellphones and laptops for learning. Google Classroom (GC) is one of the media that is easy to open from google email or Gmail so there is no need to install this application specifically. Google Classroom is a free

website created by Google, available for students and lectures to effectively communicates online. The main objective of Google Classroom is to provide help for students and lectures to share files or other form of learning materials. [3]. In accordance with TAM (Technology Acceptance Model) theory by Davis [4], there are two main factors that affect the adoption or acceptance of a certain technology. They are Perceived Ease Of Use and Perceived Usefulness. Other influential factors as disclosed by Dwitama [5] are Perceived Understanding (Awareness) and Perceived Risk; and other factors according to Salman [6] are communication channels. there is little research found about google classroom. Not everyone is inclined to the use or adoption or acceptance of GC. That is why research on predictors that affect the adoption or use of GC is important. The objectives of this study is to investigate the effect of predictors on the behavior of using GC in the Department of Tourism of the Bali State Polytechnic.

II. THEORY AND HYPOTHESES

The constructs in this research were developed from the related literature and modified for the context of GC usage when needed. Perceived ease of use and perceived usefulness derived from a number of literature such as [4]; [7]; [8]; [9]; [10]; [6]. Perceived risk were taken from other scientific sources such as [11]; [8], Usage behaviour were taken from [10], [12], [13], [14]and [15].

2.1 Google Classroom

Google Classroom is a free web service, allowing students and lectures to communicate for assignment and examination in online settings. The ultimate objective of Google classroom is to simplify the process of sharing files between lectures and students [3], [16], [17].

2.2 Perceived Ease of Use (PEU)

According to Davis [4] perceived ease of use is the extent to which a person believes that using a

particular system will be free of effort [18]. Perceived ease of use is a perception of persons that by using a computer system will create a less effort and this affect PU directly and affect indirectly technology acceptance of users [19]. The easier the user interact with a system, the more useful he or she find it. There is substantial empirical support for this view [20], [21], [9], [15].

Hypotheses 1: Perceived ease of use has a positive effect on the use of GC

2.3 Perceived Usefulness (PU)

Perceived usefulness is considered as one of the TAM's components that is used widely in the information system by researchers. In accordance with [20], PU is the extent to which a person believes that using a certain system will improve his or her performance. [22] and [23] stated that PU is the extent to which a person use a certain system will enhance her or his job performance. It is the primary prerequisite for mass market technology acceptance, which depends on consumers' expectations about how technology can improve and simplify their lives [24]. Previous research on TAM had recommended that PU has appositve effect on the adoption on an information technology [13].

H2: Perceived usefulness has a positive effect on the use of GC

2.4 Perceived Risk (PR)

This variable refers to a person' subjective belief that using a technology possibly affect his or her action negatively due to uncertainty that is possibly negatively affect his or her intention of use. Previous studies show that trust has importance influence on persons' willingness to carry out payment and exchange personal information [25]. Trust refers to an expectation that others will not behave opportunistically [24], [24].

H3: Perceived risk has a negative effect on the use of GC

2.5 Competency (CO)

This construct states an individual's belief that using a technology will provide knowledge, attitudes and skills to its users. "Competence" is a concept for performance motivation. [26]. Hayes [27] stated competences generally include knowledge, motivation, social characteristic and roles, or skills of one person in accordance with the demands of organizations of their clerks [28].

H4: Competency has a positive effect on the use of GC

2.6 Usage Behaviour (UB)

This construct refers to the function use of a technology. What can be performed by the technology.

Usage behavior refers to the purpose or function of using a technology [6], [29],[30],[31],[32].

Based on the hypotheses, the proposed research model is shown below in Figure 1.

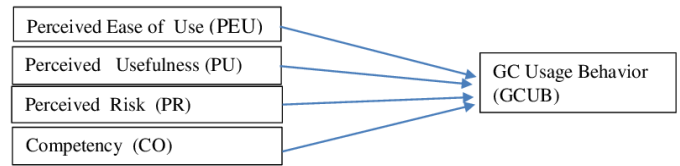


Figure 1. Proposed Research Model

III. RESEARCH METHOD

A cross-sectional survey was conducted in Tourism Department of Politeknik Negeri Bali. A questionnaire in the form of Google Form delivered to 200 GC users which includes lecturers, students and related staffs. The questionnaire was divided into two sections. The first part comprise demographic questions such as gender, age and education background, while the other section covers technology characteristic such as perceived ease of use, perceived usefulness, perceived risk, competency and GC usage. Likert Scales 1 to 5 level is applied in the questionnaires in which 1 indicates "strongly disagree" and 5 means "strongly agree". Data were collected and analysed by using Statistic Package for Social Science (SPSS)[33]. Respondents profile were analysed with descriptive statistic, to examine the relation among variables, it is used Pearson Correlation. Reliability of variables were confirmed by factor analysis, and to test the influence of independent variables to the dependent variables, the multiple regression analysis were applied [34].

IV. RESULTS AND DISCUSSION

4.1 Result

4.1.1. Respondents profile.

The information in Table I indicates that the sample of 200 respondent comprise: 37,5% (75) of the respondents are male and 62,5% (125) are female. Most of respondents are students (193 or 96,5%) are aged between 18 and 21 years and 7 (3,5%) are lecturers aged between 50 and 61.

TABLE I. RESPONDENTS PROFILE

Characteristic	Frequency	Percentage
Gender:		
Male	75	37.5%
Female	125	62.5%
Status & Age:		

Lectures (50 - 61)	7	3.5%
Students (18 - 21)	193	96.5%

4.1.2. Scale reliability.

The reliability of the questionnaire was tested using Cronbach's alpha measurements. The reliability coefficients alpha of all variables range from 0.727 to 0.948, we used the criteria of Cronbach's alpha for establishing the internal consistency reliability: Excellent ($\alpha > 0.9$), Good ($0.7 < \alpha < 0.9$), Acceptable ($0.6 < \alpha < 0.7$), Poor ($0.5 < \alpha < 0.6$), Unacceptable ($\alpha < 0.5$) [33]; [19], [35]. The following are described in Table II: PEU (0.882); PU (0.948); PR (0.826); CO (0.879); GCUB (0.727).

TABLE II. SCALE RELIABILITY

Construct name	Number of items	Cronbach's alpha
PEU	6	0.882
PU	5	0.948
PR	3	0.826
CO	3	0.879
GCUB	3	0.727

4.1.3. Correlation analysis.

Based on the average score of multi-items for the constructs in the framework, as each construct was measured by several items in the questionnaire. This will be used in further analysis, such as regression and correlation [36]; [37]. Person r correlation was run to determine the relationship between independent variables (PEU, PU, PR, and CO) and the dependent variable (GCUB). Cohen [30] suggests that the correlation coefficient value (r) range from 0.10 to 0.29 is considered weak, from 0.30 to 0.49 is medium, and from 0.50 to 1.0 is strong. Results show that there was a strong, positive correlation and statistically significant between Perceived ease of use ($r = .524$, $n=80$, $p < 0.00$), Perceived usefulness ($r = .594$, $n=80$, $p < 0.00$), and Behavioural Intention to use GC; and a medium, positive correlation and significant statistically between Awareness ($r = .479$, $n=80$, $p < 0.00$), Communication channel ($r = .337$, $n=80$, $p < 0.01$) and GC Usage Behaviour), However, Perceived risk ($r = .023$, $n=80$, $418 > 0.05$) was weakly correlated and statistically not significant to GC Usage Behaviour.

4.1.4. Normality, multicollinearity and heteroskedastic.

The analysis result in sig value of $0.313 > 0.05$ which means that the data set is in normal distribution and could be analysed through factor analysis and multiple regression.

Multicollinearity test result shows that all the Tolerance value = $p > 0.01$ and VIF value $p < 10$

means that there is no multicollinearity and data can be analysed further to multiple regression.

It shows that all the Sig value $p > 0.05$ indicates data set is free heteroskedastic matters and it could analyse further to factor analysis and multiple regression.

4.1.5. Factor analysis and multiple regression.

Factor analysis were used to confirm the 20 items of the questionnaires. The KMO value of 0.714 and sig. of Barlett's Chi-square = 1995.310 ($p < 0.0010$) confirm that factor analysis suitable for data set.

The factor loading for 20 items are clustered into five factors: Factor 1 (PEU), Factor 2 (PU), Factor 3 (PR), and Factor 4 (CO). The Eigenvalue for each factor is greater than 1.0 (8.183, 3.041, 1.664, and 1.179). The variance cumulative percentage of the four factors was 76.394 per cent.

Multiple regression was used to analyze the influence of independent variables towards the dependent variables [38]; [37]. The result shows that PEU ($p < 0.05$), PU ($p < 0.05$), and CO ($p < 0.05$) all significantly affect the GC Usage Behaviour. However, PR ($0.139 > 0.05$) was found not to be significantly affect the GC Usage Behaviour.

4.2 Discussion

In this study, the TAM theory by David through the two antecedent variables used proved to be very supportive of the use of this GC. PEU and PU variables based on multiple regression analysis are also proven to support the behavior of using this GC. Although the risk perception variable has no significant effect on the use of this GC. In addition, the central role of the competency variable (CO) is very important as a predictor that affects the use of GC in the Department of Tourism, Bali State Polytechnic.

Through this research, management in the Tourism Department of the Bali State Polytechnic as well as other educational institutions that use GC then need to pay attention to the acceleration of the use of this GC by planning to develop better physical and non-physical infrastructure. Physical infrastructure in the form of buildings, equipment and network capacity that supports the use of this GC. Non-physical infrastructure includes competency improvement through training for all users including all lecturers, students, and other staff related to the use of this GC. In addition, this evaluation of the use of GC needs to be carried out considering the absolute need for online learning as a result of the prolonged COVID-19 pandemic.

ACKNOWLEDGMENT

The author would like to appreciate Ministry of Education and Culture of The Republic of Indonesia through Politeknik Negeri Bali for the support.

REFERENCES

- [1] UNWTO, "World Tourism Barometer 2021," vol. 19, no. 1, 2021.
- [2] UNWTO, "World Tourism Barometer 2020," vol. 18, no. 1, 2020.
- [3] B. Mackenty, "'What are the design goals for classroom?' - Classroom Community". support.google.com," *Wikipedia*. 2018, [Online]. Available: https://support.google.com/edu/classroom/forum/AAAAq1rTZJoLJO8SAlhQ1s/?hl=en&msgid=7_Kj06SBBwAJ&gpf=d/msg/google-education/LJO8SAlhQ1s/7_Kj06SBBwAJ.
- [4] F. D. Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology," *MIS Q.*, pp. 319–340, 1989.
- [5] F. Dwitama, "Faktor-Faktor Yang Mempengaruhi Minat Nasabah Menggunakan Internet Banking Dengan Menggunakan Technology Acceptance Model (TAM) Pada Bank Mandiri," *J. Ilm. Inform. Komput.*, vol. 19, no. 3, 2014.
- [6] A. Salman, M. Y. H. Abdullah, J. Aziz, A. L. Ahmad, and C. P. Kee, "Remodelling technology acceptance model (TAM) in explaining user acceptance towards information and communication technology," *Int. J. Arts Sci.*, vol. 7, no. 1, p. 159, 2014.
- [7] A. Mishra and I. Akman, "GREEN INFORMATION TECHNOLOGY (GIT) AND GENDER DIVERSITY.," *Environ. Eng. Manag. J.*, vol. 13, no. 12, 2014.
- [8] J. C. Sweeney, G. N. Soutar, and L. W. Johnson, "The role of perceived risk in the quality-value relationship: A study in a retail environment," *J. Retail.*, vol. 75, no. 1, pp. 77–105, 1999.
- [9] M.-C. Lee, "Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit," *Electron. Commer. Res. Appl.*, vol. 8, no. 3, pp. 130–141, 2009.
- [10] S. Taylor and P. A. Todd, "Understanding information technology usage: A test of competing models," *Inf. Syst. Res.*, vol. 6, no. 2, pp. 144–176, 1995.
- [11] C. S. Yiu, K. Grant, and D. Edgar, "Factors affecting the adoption of Internet Banking in Hong Kong—implications for the banking sector," *Int. J. Inf. Manage.*, vol. 27, no. 5, pp. 336–351, 2007.
- [12] I. Ajzen, "Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. doi:10.1016/0749-5978(91)90020-TThe theory of planned behavior," *Organ. Behav. Hum. Decis. Process.*, vol. 50, no. 2, pp. 179–211, 1991, [Online]. Available: <http://www.sciencedirect.com/science/article/pii/074959789190020T>.
- [13] R. L. Thompson, C. A. Higgins, and J. M. Howell, "Influence of experience on personal computer utilization: Testing a conceptual model," *J. Manag. Inf. Syst.*, vol. 11, no. 1, pp. 167–187, 1994.
- [14] V. Venkatesh, M. G. Morris, G. B. Davis, and F. D. Davis, "User acceptance of information technology: Toward a unified view," *MIS Q.*, pp. 425–478, 2003.
- [15] I. M. Budiasa, I. K. Suparta, and N. M. Nadra, "Factors that influencing the usage of global distribution system," in *Journal of Physics: Conference Series*, 2018, vol. 953, no. 1, p. 12053.
- [16] K. A. Azhar and N. Iqbal, "Effectiveness of Google classroom: Teachers' perceptions," *Prizren Soc. Sci. J.*, vol. 2, no. 2, pp. 52–66, 2018.
- [17] I. N. M. Shaharane, J. M. Jamil, and S. S. M. Rodzi, "The application of Google Classroom as a tool for teaching and learning," *J. Telecommun. Electron. Comput. Eng.*, vol. 8, no. 10, pp. 5–8, 2016.
- [18] F. D. Davis, "User acceptance of information technology: system characteristics, user perceptions and behavioral impacts," *Int. J. Man. Mach. Stud.*, vol. 38, no. 3, pp. 475–487, 1993.
- [19] G. C. Moore and I. Benbasat, "Development of an instrument to measure the perceptions of adopting an information technology innovation," *Inf. Syst. Res.*, vol. 2, no. 3, pp. 192–222, 1991.
- [20] H. Amin, "An analysis of online banking usage intentions: an extension of the technology acceptance model," *Int. J. Bus. Soc.*, vol. 10, no. 1, p. 27, 2009.
- [21] C. Berné, M. Gómez-Campillo, and V. Orive, "Tourism distribution system and information and communication technologies (ICT) development: Comparing data of 2008 and 2012," *Mod. Econ.*, vol. 6, no. 2, p. 145, 2015.
- [22] B. Alsajjan and C. Dennis, "Internet banking acceptance model: Cross-market examination," *J. Bus. Res.*, vol. 63, no. 9–10, pp. 957–963, 2010.
- [23] N. Mallat, M. Rossi, V. K. Tuunainen, and A. Oorni, "The impact of use situation and mobility

- on the acceptance of mobile ticketing services,” in *Proceedings of the 39th Annual Hawaii International Conference on System Sciences (HICSS'06)*, 2006, vol. 2, p. 42b–42b.
- [24] T. Al-maghrabi and C. Dennis, “Driving online shopping: Spending and behavioral differences among women in Saudi Arabia,” *Int. J. Bus. Sci. Appl. Manag.*, vol. 5, no. 1, pp. 30–47, 2010.
- [25] S. A. Al-Somali, R. Gholami, and B. Clegg, “An investigation into the acceptance of online banking in Saudi Arabia,” *Technovation*, vol. 29, no. 2, pp. 130–141, 2009.
- [26] D. S. Butt, “On the measurement of competence motivation,” in *Personality Research, Methods, and Theory*, Psychology Press, 2014, pp. 313–331.
- [27] C. G. Hayes, “Vector competence of colonized *Culiseta melanura* (Diptera: Culicidae) for western equine encephalomyelitis virus,” *J. Med. Entomol.*, vol. 15, no. 3, pp. 253–258, 1979.
- [28] A. Maaleki and K. M. Cyrus, “Project manager competency model based on ANP method in construction projects,” *Proc. Int. Conf. Ind. Eng. Oper. Manag.*, no. 501, pp. 1281–1292, 2017.
- [29] P. Y. Chau, “Influence of computer attitude and self-efficacy on IT usage behavior,” *J. Organ. End User Comput.*, vol. 13, no. 1, pp. 26–33, 2001.
- [30] J. Cohen, “Statistical power analysis for the behavioural sciences (2nd edn)(Hillsdale, NJ, Lawrence Earlbaum),” 1988.
- [31] W. S. Chow and Y. Chen, “Intended belief and actual behavior in green computing in Hong Kong,” *J. Comput. Inf. Syst.*, vol. 50, no. 2, pp. 136–141, 2009.
- [32] T. P. Cronan, L. N. K. Leonard, and J. Kreie, “An empirical validation of perceived importance and behavior intention in IT ethics,” *J. Bus. Ethics*, vol. 56, no. 3, pp. 231–238, 2005.
- [33] D. George and P. Mallery, *IBM SPSS statistics 26 step by step: A simple guide and reference*. Routledge, 2019.
- [34] S. Uma, “Research Method for Business: A Skill Approach.” Wiley, 1992.
- [35] G. Rigopoulos, “A TAM framework to evaluate users’ perception towards online electronic payments,” *J. internet Bank. Commer.*, vol. 12, no. 3, p. 1, 2007.
- [36] W. Wang and I. Benbasat, “Recommendation agents for electronic commerce: Effects of explanation facilities on trusting beliefs,” *J. Manag. Inf. Syst.*, vol. 23, no. 4, pp. 217–246, 2007.
- [37] T. T. Wei, G. Marthandan, A. Y. Chong, K. Ooi, and S. Arumugam, “What drives Malaysian m-commerce adoption? An empirical analysis,” *Ind. Manag. data Syst.*, 2009.
- [38] J. F. Hair, W. C. Black, B. J. Babin, R. E. Anderson, and R. Tatham, “L.(2010). Multivariate data analysis,” *Multivar. Data Anal. Pearson*, 2010.