Student Behavior in Using Artificial Intelligence for Canva Instant Presentation

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ABSTRACT:

This study aims to determine student behaviour in using artificial intelligence for Canva instant presentations. This study was conducted by students of the Office Administration Education study program, class of 2020, with a sample size of 250 from a population of 175 students determined using the Krejcie table with a significance level of 0.05. Data were analyzed using Structural Equation Modeling-Generalized Structured Component Analysis (SEM-GSCA) with the GSCA Pro application. The resulto f this study shows that perceived usefulness does not significantly influence attitude towards Canva. Perceived ease of use has a significant influence on attitude towards Canva. Innovativeness does not have a significant influence on attitude towards Canva. Perceived enjoyment has a significant influence on attitude towards Canva. Efficiency has a significant influence on attitude towards Canva. Attitude towards Canva has a significant influence on intention to use Canva. In conclusion, this study determines how AI in Canva instant presentations improves quality and efficiency and identifies factors influencing student behavior in its use.

INTRODUCTION

Canva has the ease of redesigning by using the drag and group template element features and animations that Canva has provided without the need to redesign, so with these conveniences, Canva can attract people to use the Canva application including students. Students need the Canva application to design presentations, most students feel the benefits of

using Canva because it doesn't take much time. Most students use Canva via the website rather than via the application on their cellphones because using cellphones feels less than optimal in design. This statement is supported by the assessment given by users via Google Play. The conveniences and uses that already exist in the Canva application can reflect the behavior of Canva application users. Canva is user-friendly and practical, helping students develop 21st-century skills in technology, information, and communication literacy essential for the Industrial Revolution 4.0, which fosters diverse behaviors in its use and serves as a creative alternative to PowerPoint for designing presentations with templates, icons, graphics, and fonts. This study involves students from the Office Administration Education program, who frequently use Canva to create presentations, posters, infographics, and other design assignments. Optimising technology to support the learning process is deemed essential to ensure effective implementation in the future (Rodliyah 2021). Understanding students' behaviour can provide insight into educational institutions and the development of Canva. This study explores changes in student behaviour when using Canva's artificial intelligence for instant presentations, aiming to understand how students perceive factors influencing its use.

The limitations of this study highlight a research gap, especially a theoretical gap. The previous research has examined variables such as perceived usefulness, perceived ease of use, innovativeness, perceived enjoyment, attitude toward use, and intention to use. Thus, the researchers added efficiency as an additional variable. Unlike the previous studies conducted outside Surabaya, this study focused on Surabaya, specifically at the Office Administration Education Study Program at Universitas Negeri Surabaya, because the cultural differences across regions may influence technology usage behaviours. The study aims to explore students' behaviour and intentions in using Canva, their responses to the platform, and the factors influencing these behaviours. This research is essential for understanding how students effectively use technology in the digital era.

The novelty of this research lies in the use of the TAM (Technology Acceptance Model) method, which is useful for providing predictions and explaining how users behave when accepting and using a technology that can help their work (F. D. Davis 1985). The TAM Model will be beneficial because it comes from theory. Psychology can provide explanations regarding the behaviour of using information applications such as beliefs, behaviour, intentions, and relationships regarding user behaviour (Irawati, Rimawati, and Pramesti 2020). There are additional variables apart from the TAM variable such as perceived enjoyment, innovativeness, and efficiency.

This research uses SEM-GSCA (Generalized Structure Component Analyst) tools. According to research (T. I. Santoso et al., 2022) using the SEM-GSCA method can help analyze complex relationships between variables in research, and assist researchers in analyzing multivariable relationships, thereby enabling researchers to understand complex relationships between variables, in social and behavioral research there are latent variables which cannot be measured directly, using SEM-GSCA can help researchers understand latent variables and measure the impact on measured variables.

METHOD

This study used Explanatory research to determine social phenomena related to behaviour, explain the causal relationships of various social factors, and conclude the causes of changes in phenomena that coexist with change variables (Strydom 2013). The data were collected using questionnaires through Google Forms so students using the Canva application can fill them out online. The study used a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Samples were selected through purposive sampling, targeting subjects based on specific criteria and objectives of this study (Sugiyono 2018). The criteria used in this research were students from the Office Administration Education study program and using Canva to make presentations. There is a population of 715 students. Based on the Krejcie table (Krejcie and Morgan 1970)a significance level of 0.5% was found in 170 research samples.
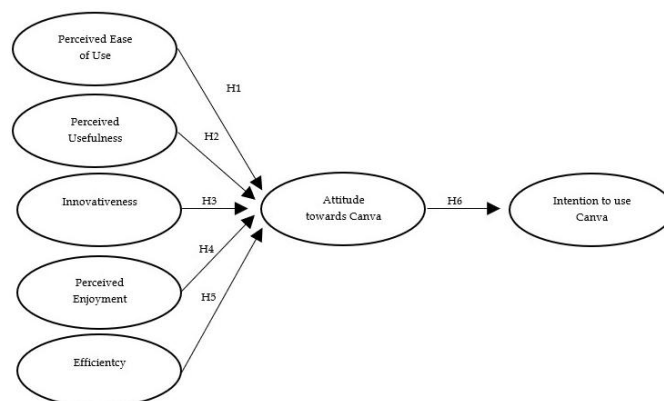

Figure 1. Research Design

According to (Fred D. Davis 1989) , there is a perception that every user's confidence in applying a technology can improve the user's performance. This construct is an indicator that individuals use in using new technology. (Al-Rahimi, Othman, and Musa 2013 ; Cheung and Vogel 2013 ;Huang, 2015; Tyas & Darma, 2017 ; Aiolfi 2023)state that ease of use is related

to perceived ease of use. has a significant influence on user intentions in using this device. Thus, the hypothesis is obtained:

H1: Perceived ease of use has a positive effect on attitude towards Canva

H2: Perceived Usefulness has a positive effect on attitude towards Canva.

H3: Perceived innovativeness has a positive effect on attitude towards Canva.

H4: Perceived enjoyment has a positive effect on attitude towards Canva.

H5: Efficiency has a positive effect on attitude towards Canva.

H6: Attitude towards Canva has a positive effect on the intention to use Canva

RESULTS AND DISCUSSIONS

The population of Office Administration Education study program is 715 students, based on the sample size determined by the Krejcie table with a 5% significance level of 250 respondents. There were 70% of the total sample who filled out the questionnaire, namely 180 students.

Table 1. Characteristic Respondents

Variables	Item	n	Percentage
Canva artificial intelligence users	Yes	175	97.2%
	No	5	2.8%
Gender	Man	24	13.7%
	Woman	151	86.3%
student year of entry	2020	54	30.9%
	2021	36	20.6%
	2022	53	30.3%
	2023	32	18.3%
Experience using Canva *artificial intelligence*	1 years	37	21.1%
	2 years	58	33.1%
	More than 3 years	80	45.7%

The results of descriptive statistics show that 97.2% of Canva artificial intelligence users are 175 students, and 2.8% are 5 students who do not use Canva artificial intelligence. Gender: 86.3% female or 151 respondents and 13.7% male or 24 respondents. The class of 2020 has 54 students with a percentage of 30.9%, the class of 2021 has 36 students with a percentage of 20.6%, the class of 2022 has 53 students with a percentage of 30.3%, the class of 2023 has 32 students with a percentage of 18.3%. Experience using Artificial Intelligence in Canva for 1 year there were 21.1% as many as 37 respondents, for 2 years there were 33.1% as many as 58 respondents, for more than 3 years there were 45.7% as many as 80 respondents.

Measurement Model

A loading factor score is more than 0.7 (F. Hair Jr et al. 2014), but (Chin 1998) stated that a loading score ≥ 0.5-0.6 was considered sufficient. The loading factor score can be seen in Table 2.

Table 2. Loading Factors

Indicators	Estimate	SE	95%CI(L)	95%CI(U)
PU1	0.848	0.028	0.779	0.888
PU2	0.845	0.024	0.794	0.901
PU3	0.760	0.037	0.685	0.834
PU4	0.722	0.047	0.621	0.796
PU5	0.776	0.038	0.698	0.855
PEOU1	0.771	0.033	0.702	0.838
PEOU2	0.782	0.028	0.716	0.822
PEOU3	0.743	0.042	0.649	0.809
PEOU4	0.826	0.029	0.770	0.875
PEOU5	0.757	0.049	0.659	0.823
IV1	0.746	0.045	0.611	0.814
IV2	0.850	0.024	0.791	0.891
IV3	0.771	0.044	0.686	0.842
IV4	0.720	0.039	0.641	0.806
IV5	0.794	0.028	0.730	0.850
PE1	0.778	0.031	0.711	0.837
PE2	0.797	0.036	0.716	0.858
PE3	0.804	0.032	0.737	0.868
PE4	0.805	0.034	0.733	0.856
PE5	0.718	0.047	0.612	0.790
EF1	0.742	0.048	0.644	0.838
EF2	0.740	0.047	0.640	0.814
EF3	0.794	0.033	0.724	0.846
EF4	0.789	0.029	0.724	0.842
EF5	0.590	0.059	0.443	0.681
AT1	0.831	0.033	0.751	0.881
AT2	0.823	0.021	0.785	0.860
AT3	0.836	0.025	0.783	0.881
AT4	0.787	0.042	0.676	0.868

Table 2 shows that scores are more than 0.5 in the 95% CI (L) column, meaning that each indicators were categorized as valid

Measuring construct quality measures (F. Hair Jr et al. 2014) suggests for obtaining research that has convergent validity, internal consistency, and composite reliability with a PVE score ≥ 0.50, the same as research conducted by (Ali, Bashir, and Ahmad 2021) explains

that the Alpha and Rho scores are above 0.70 and dimensionality is 1(Meneau and Moorthy 2022) The construct quality table can be seen in Table 3.

Table 3. Construct Quality

	PU	PEOU	IV	PE	EF	AT	ITU
PVE	0.627	0.603	0.605	0.540	0.540	0.674	0.655
Alpha	0.850	0.835	0.835	0.840	0.783	0.879	0.867
Rho	0.893	0.883	0.884	0.886	0.853	0.911	0.904
Dimensionality	1	1	1	1	1	1	1

Table 3 shows that, first, the PVE results for the PU, PEOU, IV, PE, EF, AT, and ITU variables are more than 0.50. Second, Alpha and Rho scores for the variables PU, PEOU, IV, PE, EF, AT, and ITU are more than 0.70. So, all variables in the research model have acceptable levels of convergent validity, internal consistency, and composite reliability.

Table 4 shows that the R-square values indicate each variable explains the model.

Table 4. R squared Scores of Components in Structural Model

PU	PEOU	IV	PE	EF	AT	ITU
0	0	0	0	0	0.755	0.607

Table 4 shows that AT score is 0.755 or 75.5%, meaning that independent variables influence 75.5% of AT in the research, while variables outside the research influence 24.4%. The score of the ITU variable is 0.607, meaning that the independent variables influence 60.7% of ITU in this study, while other variables outside this study influence 39.2%.

Then, the model fit of this study can be seen in the Structural Model Fit Measures. The FIT score ranges from 0 to 1, FIT explains the total variance of all variables, the higher the FIT score, the more variance is explained in the research model (H. Hwang, Cho, and Choo 2021) The score can be seen in Table 5.

Table 5. Structural Model Fit Measures

FIT	AFIT	FITs	FITm	GFI	SRMR	OPE	OPEs	OPEm
0.546	0.540	0.194	0.616	0.986	0.056	0.460	0.810	0.390

Table 5 shows that the FIT score is 0.546, meaning the research model's variance amounts to 54.6%. The AFIT score is the same as the FIT score but considers the model's complexity and ranges from 0 to 1; the AFIT score is 0.540, meaning the research model explains 54.0% of the variance. FITs explain the total variance of all model components and range from 0 to 1, the FITs score is 0.194 which means 19.4% of the variance is explained in the structural model. FITm ranges from 0 to 1, the FITm score is 0.616866 which means 61.68866% of the variance has been explained in the measurement model. (H. Hwang, Cho, and Choo 2021) explains that if the sample is > 100 then the GFI is > 0.93 and the SRM < 0.08. The GFI and SRMR scores

in the table are 0.986 and 0.056 respectively, so the GFI and SRMR scores meet the requirements of the FIT model.

Then, the hypothesis test can be seen in the path coefficients - 95%CI(L) score. The decision is addressed to a positive score of 95%CI(L) score. The path coefficients can be seen in Table 5.

Table 5. Path Coefficients

	Estimate	SE	95%CI(L)	95%CI(U)	Conclucion
PU→AT	0.056	0.088	-0.142	0.204	Rejected H1
PEOU → AT	0.134	0.080	0.004	0.302	Accepted H2
IV → AT	0.207	0.100	-0.015	0.447	Rejected H3
PE →AT	0.291	0.081	0.162	0.480	Accepted H4
EF → AT	0.280	0.063	0.152	0.428	Accepted H5
AT → ITU	0.779	0.038	0.698	0.847	Accepted H6

Table 5 shows the estimated path coefficients, bootstrap standard errors (SE), and 95% confidence intervals (95% CI). According to H. Hwang, Cho, and Choo (2021), a path coefficient is considered significant if it is within the 95% confidence interval and positive (or not negative). The estimate is statistically significant at the 0.05 level if the confidence interval does not include zero (0).

The Influence of Perceived Ease of Use on Attitude towards Canva

The results of study are supported by research conducted by (Aiolfi 2023) which shows that perceived ease of use has a significant effect on attitude towards Canva. Likewise, research (Al-Rahimi, Othman, and Musa 2013)states that perceived ease of use influences attitudes toward using Canva. Research conducted by(Cheung & Vogel 2013; Elkaseh, Wong, and Che Fung 2016; Y.-M. Huang 2015; Tyas and Darma 2017) shows that perceived ease of use significantly influences attitude toward using Canva.

Perceived ease of use is often interpreted as "a person believes that using a system will make it easier." The construct is considered an indicator of the cognitive effort required by students to learn and utilize a new technology so that using Canva is considered easy to understand, learn, and use (Al-Rahimi, Othman, and Musa 2013). Perceived ease of use influences students' perceptions of how easy or difficult it is to use Canva each individual will use new technology because they feel its usefulness, so that it can create a sense of confidence and comfort, so students will use Canva because they feel Canva is easy to access and learn, making it easier to learn. Completing a task, when a technology is considered easy to use, it will influence the user's attitude (Aiolfi 2023). The use of artificial intelligence for ease of

operation is very necessary to improve attitudes towards Canva. Perceived ease of use defines the ease of use in which the system can be used easily so that it can speed up the user in completing his goals (Khan and Qutab 2016). When students take entrepreneurship practice courses in groups, students learn to carry out entrepreneurship practices and then make presentations to explain the results of the practice that has been carried out. By using Canva, students can share assignments with their groups using the real-time collaboration feature. Students can access making presentations at one time using each device without having to exchange files manually, apart from that there is also a drag-and-drop feature where students can easily add design elements to worksheets by dragging and dropping and there are thousands of presentation templates available. If students do not experience any particular difficulties in using artificial intelligence on Canva and believe that it can simplify certain activities. These things refer to each student's experience in using Canva artificial intelligence. Students who do not feel obstacles when using Canva's artificial intelligence can influence the perceived ease of use on attitudes towards Canva because students do not turn to other platforms.

The Influence of Perceived Usefulness on Attitude towards Canva

The results of this research prove that perceived usefulness does not significantly influence attitude towards Canva. This research supports the results of research conducted by (Tyas and Darma 2017) where the results did not significantly influence attitude toward using Canva. Likewise, research (Rahman, Handayani, et al. 2020) states that perceived usefulness does not significantly influence attitude toward using Canva.

The insignificant results between perceived usefulness and attitude toward are contrary to what has been claimed in the hypothesis development literature (Aiolfi 2023; Cheung & Vogel 2013; Y.-M. Huang 2015; Leng et al. 2011; Goh, Lada, and Muhammad 2011) which states that Perceived Usefulness has a significant influence on Attitude Towards Canva but in reality the results obtained in this research, perceived usefulness on attitude towards is not proven to have a significant influence compared to previous research.

The Technology Acceptance Model (TAM) perceived usefulness is one of the main factors that can influence user attitudes and intentions (Rahman, Lina, et al. 2020). Perceived usefulness is stated to have no significant effect on user attitudes. This can be caused by several factors such as student characteristics, student trust in artificial intelligence, the reputation of artificial intelligence, and the quality of artificial intelligence. Tyas and Darma (2017) suggested that prolonged use of Canva without updates leads students to become accustomed

to its features, limiting its impact on improving presentation quality. There are limitations to Canvas features that students experience when making presentations. In teaching skills courses, students flock to create unique learning media for teaching practice, so they need to make interesting and unique presentations to attract students' attention. However, Canva cannot create very good designs. Unique, there is paid content; apart from that, Canvas performance is slow if the internet connection is unstable. In addition, the number of presentation design platforms can influence attitudes toward using Canva and the perception of usability. Because it can reduce student productivity. Apart from that, there are also many choices. This causes students to be confused about which platform to use according to their needs. Through many choices, students can compare with other platforms that offer more interesting features, which can influence the perceived usefulness of their attitude towards Canva.

The influence of innovativeness on attitude towards Canva

The results of this study show that innovativeness does not have a significant effect on attitude towards Canva. This is also supported by the results of previous research conducted by Aiolfi (2023) and Ahmed et al. (2013), which have the same research results.

The negative results resulting from innovativeness towards attitudes are contrary to what has been claimed in the literature(Boateng, Okoe, and Omane 2016; Frimpong et al. 2017; J. Hwang, Lee, and Kim 2019; Leckie and Goldstein 2017; Thakur and Srivastava 2014) In this study, perceived innovativeness suggests that Canva reflects the newness of the technology (Leckie and Goldstein 2017), so the relationship between users and the newly incorporated technology may have influenced the level of perceived innovativeness. If users are not familiar with artificial intelligence-based technology, it will be difficult for them to evaluate the level of student perception regarding the tools in Canva(Aiolfi 2023) Even though Canvas artificial intelligence provides innovative features, if students don't try and experience this innovation when making presentations, it will have no effect. Innovativeness that not many students know or is difficult to use can cause students to feel uncomfortable and find it difficult to operate Canva. During organizational behavior courses, of course, students want to make presentations that are appropriate to the course. However, students don't know the keywords for additional elements that are suitable for adding presentation designs. Hence, students tend to be more comfortable with the features they usually use, namely directly using templates. That has been provided so that if there is innovation in Canva and it is deemed to provide less clear benefits for students, they will view the innovation provided by Canva less positively. According to

research (Aiolfi 2023), if students are used to innovative technology or have used innovative products before, students may no longer see innovation as a significant factor in forming attitudes towards Canvas artificial intelligence. Perceptions of innovation may no longer be a key driver of users' attitudes if they are already familiar with similar technologies.

The influence of perceived enjoyment on attitude towards Canva

The results of this study prove that perceived enjoyment significantly influences attitude toward using Canva, which means that the more enjoyment felt by students, the more students' attitudes towards using Canva will improve. The results of this research support previous research conducted by (B. Santoso 2010) where the results of research on perceived enjoyment significantly influenced attitude towards. Likewise, research (Aiolfi 2023; Labib & Mostafa, 2015; Rahman et al, 2020; Zaharia & Würfel, 2020) states that perceived enjoyment significantly influences attitude towards.

Specifically, among the factors influencing acceptance of Canva, the variable that shows the most significant correlation with attitudes towards Canva is perceived enjoyment. This confirms the importance of perceived enjoyment, as a predictor of attitudes. The feeling of enjoyment, ease, and pleasure of using Canva attracts students to create a positive emotional relationship towards Canva and can form the basis of a positive and long-lasting relationship (Zaharia and Würfel 2021). Students' positive experiences in using artificial intelligence Canva can create a feeling of joy, this comes from attractive features, easy to use in making presentations so it can make it easier for students to be creative in making creative designs. One of the features that makes things easier for students is by using artificial intelligence Canva, students can easily collaborate. This can make students in group assignments create learning media in teaching practice because making presentations by distributing presentation links makes it easier for students to provide feedback, share elements, and work together to determine the most attractive presentation design possible.

The influence of efficiency on attitude towards Canva

The results of this study are supported by the results of previous research conducted by (Rahmasari & Yogananti, 2021) where the results of the efficiency research have a significant effect on attitude towards. Likewise, research (Bravo-Ureta and Pinheiro 1993; Ndubuisi et al., 2022; Rahmi 2019) states that efficiency has a significant effect on attitude towards.

Efficiency can be measured using a system, process, or activity. Canva is easy to access via cellphone and laptop while connected to the internet and is comfortable and fast in making presentations because of the features available in Canva's artificial intelligence. According to (Rahmasari and Yogananti 2021), efficiency has a significant effect because it is important for students to be able to complete assignments quickly, after students learn to use Canvas artificial intelligence, students work in completing assignments is helped so the student experience becomes better. Therefore, efficiency is an important component that can significantly influence user experience. Canvas artificial intelligence can help increase student efficiency with features that can help in creating presentation designs such as simple and easy-to-access toolbars by providing quick access to basic tools such as adding text, images, and shapes, which can minimize the time spent searching for the right tools. Required, there is a feature to leave comments and get notifications so that it can facilitate coordination between teams and speed up projects, it can be saved in various formats such as PDF, PNG, or PPT. (Ndubuisi et al. 2022) state that efficiency is useful for encouraging increased student productivity.

The influence of attitude towards Canva on intention to use Canva

The results of this study prove that attitude towards Canva has a significant effect on intention to use Canva, which means that the better the student's attitude towards using Canva, the greater the student's intention to use Canva. This is also supported by the results of previous research conducted by (Aiolfi 2023) as well as research conducted by(Setyawati 2020; Sucianti, Purwanto, and Sulistiyowati 2022; Udayana, Cahya, and Aqdella 2022) which has the same research results.

Attitude is usually an initial response to a favorable or unfavorable condition, apart from that, students who use Canva will continue to motivate other students to use Canva. Likewise, if students' attitudes towards using Canva tend to be negative, then students will not use Canva in the future and look for other alternatives (Udayana, Cahya, and Aqdella 2022). By showing a favorable attitude towards Canva, students will likely continue to use Canva daily (Alharbi and Drew 2014; Cheung and Vogel 2013; Yadrovskaia et al. 2023) Recommendations from friends also have an influence, if students feel comfortable using Canva then they will indirectly recommend Canva to their friends. A positive attitude towards Canvas artificial intelligence can also reflect the level of trust and confidence students have in this technology. If students feel confident and believe that Canva's artificial intelligence can

meet students' needs and expectations, then students will tend to have a higher intention to use Canva's artificial intelligence (Aiolfi 2023).

CONCLUSION

Based on the results and discussion, it can be concluded that perceived usefulness does not significantly influence attitude towards Canva when using Canva instant presentations. Perceived ease of use significantly influences attitude towards Canva when using Canva instant presentations. Innovativeness does not significantly influence attitude towards Canva when using Canva instant presentations. Perceived enjoyment significantly influences attitude towards Canva when using Canva instant presentations. Efficiency significantly influences attitude towards Canva when using Canva instant presentations. Attitude towards Canva significantly influences intention to use Canva when using Canva instant presentations. Artificial intelligence in Canva instant presentations can improve quality; with the results of this research, we can find factors that influence student behaviour in using Canva artificial intelligence so that we can identify features that will be improved so that they can meet student needs. Features that might be improved include loading speed, responsiveness, and stability. Clear user guides, interactive tutorials, and responsive customer service will help students understand and use Canva more effectively. After conducting research, the following suggestions can be made this research uses the TAM model for further research and can use other models such as UTAUT. The limitation of this research is that it does not use intervening variables so future research can use intervening variables. The results of this research cannot be generalized to other samples and research objects. Limitations in online surveys and sample size, so that further research is recommended to expand the research sample. Conduct further studies regarding understanding other factors that can influence student behavior in using Canva artificial intelligence, such as external factors that have not been researched.

REFERENCES

Ahmed, Affanuddin, Rehman Ubaidur, Muhammad Rizwan, Muhammad Qurban Rafiq, Muhammad Nawaz, and Adeel Mumtaz. 2013. "Moderating Role of Perceived Risk and Innovativeness between Online Shopping Attitude and Intention." *Journal of Basic and Applied Scientific Research 3* 11:310-323.

Aiolfi, Simone. 2023a. "How Shopping Habits Change With Artificial Intelligence: Smart Speakers' Usage Intention." *International Journal of Retail & Distribution Management* 51 (9/10): 1288–1312. https://doi.org/10.1108/IJRDM-11-2022-0441.

Alharbi, Saleh, and Steve Drew. 2014. "Using the Technology Acceptance Model in Understanding Academics' Behavioural Intention to Use Learning Management Systems."

Ali, Rafaquat, Furrukh Bashir, and Rashid Ahmad. 2021. "Imprints of Lower Socioeconomic Class in English Speaking Anxieties and Academic Performance of Rural and Urban Students." *IRASD Journal of Economics* 3 (3). https://doi.org/10.52131/joe.2021.0303.0055.

Al-Rahimi, Waleed Mugaheed, Mohd Shahizan Othman, and Mahdi Alhaji Musa. 2013a. "Using TAM Model to Measure the Use of Social Media for Collaborative Learning." *International Journal of Engineering Trends and Technology (IJETT)* . 5 (2): 90–95.

Boateng, Henry, Abednego Feehi Okoe, and Asante Bismark Omane. 2016. "Does Personal Innovativeness Moderate the Effect of Irritation on Consumers' Attitudes towards Mobile Advertising?" *Journal of Direct, Data and Digital Marketing Practice* 17:201-210.

Bravo-Ureta, Boris E., and António E. Pinheiro. 1993. "Efficiency Analysis of Developing Country Agriculture: A Review of the Frontier Function Literature." *Agricultural and Resource Economics Review* 22 (1): 88–101. https://doi.org/10.1017/s1068280500000320.

Cheung, Ronnie, and Doug Vogel. 2013. "Predicting User Acceptance of Collaborative Technologies: An Extension of the Technology Acceptance Model for e-Learning." *Computers & Education* 63 (April):160–75. https://doi.org/10.1016/j.compedu.2012.12.003.

Chin, Wynne W. 1998. "The Partial Least Squares Approach to Structural Equation Modeling." *Modern Methods for Business Research*, no. 2 (January), 295–336.

Davis, F. D. 1985. "A Technology Acceptance Model For Empirically Testing New End-User Information Systems: Theory And Results." Massachusetts Institute Pf Technology.

Davis, Fred D. 1989. "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology." *MIS Quarterly* 13 (3): 319. https://doi.org/10.2307/249008.

Elkaseh, Ali Mohamed, Kok Wai Wong, and Chun Che Fung. 2016. "Perceived Ease of Use and Perceived Usefulness of Social Media for E-Learning in Libyan Higher Education: A Structural Equation Modeling Analysis." *International Journal of Information and Education Technology* 6 (3): 192.

F. Hair Jr, Joe, Marko Sarstedt, Lucas Hopkins, and Volker G. Kuppelwieser. 2014. "Partial Least Squares Structural Equation Modeling (PLS-SEM)." *European Business Review* 26 (2): 106–21. https://doi.org/10.1108/EBR-10-2013-0128.

Frimpong, Kwabena, Obaid Al-Shuridah, Alan Wilson, and Frederick Asafo-Adjei Sarpong. 2017. "Effect of Inherent Innovativeness and Consumer Readiness on Attitudes to Mobile Banking." 22:187-201.

Goh, Say Leng, Suddin Lada, and Mohd Zulkifli Muhammad. 2011. "An Exploration of Social Networking Sites (SNS) Adoption in Malaysia Using Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB) and Intrinsic Motivation." *Journal of Internet Banking and Commerce* 16 (2). https://doi.org/10.1007/978-3-531-92534-9_12.

Huang, Yong Ming. 2015. "Exploring the Factors That Affect the Intention to Use Collaborative Technologies: The Differing Perspectives of Sequential/Global Learners." *Australasian Journal of Educational Technology* 31 (3): 278–92. https://doi.org/10.14742/ajet.1868.

Huang, Yong-Ming. 2015. "Exploring the Factors That Affect the Intention to Use Collaborative Technologies: The Differing Perspectives of Sequential/Global Learners." *Australasian Journal of Educational Technology* 31 (3). https://doi.org/10.14742/ajet.1868.

Hwang, H, G Cho, and H Choo. 2021. "GSCA Pro 1.1 User's Manual. ," June, 1–47.

Hwang, Jinsoo, Jin-Soo Lee, and Hyunjoon Kim. 2019. "Perceived Innovativeness Of Drone Food Delivery Services And Its Impacts On Attitude And Behavioral Intentions: The Moderating Role Of Gender And Age." *International Journal of Hospitality Management* 81 (August):94–103. https://doi.org/10.1016/j.ijhm.2019.03.002.

Irawati, Tri, Elistya Rimawati, and Nayu Ariloka Pramesti. 2020. "Penggunaan Metode Technology Acceptance Model (TAM) Dalam Analisis Sistem Informasi Alista (Application Of Logistic And Supply Telkom Akses)." *Is The Best Accounting Information Systems and Information Technology Business Enterprise This Is Link for OJS Us* 4 (2): 106–20. https://doi.org/10.34010/aisthebest.v4i02.2257.

Khan, Asad, and Saima Qutab. 2016. "Understanding Research Students' Behavioural Intention in the Adoption of Digital Libraries." *Library Review* 65 (4/5): 295–319. https://doi.org/10.1108/LR-06-2015-0070.

Krejcie, Robert V., and Daryle W. Morgan. 1970. "Determining Sample Size for Research Activities." *Educational and Psychological Measurement* 30 (3): 607–10. https://doi.org/10.1177/001316447003000308.

Labib, Nevine Makram, and Rasha H.A. Mostafa. 2015. "Determinants of Social Networks Usage in Collaborative Learning: Evidence from Egypt." *Procedia Computer Science* 65 (Iccmit): 432–41. https://doi.org/10.1016/j.procs.2015.09.113.

Leckie, George, and Harvey Goldstein. 2017a. "The Evolution Of School League Tables in England 1992–2016: 'Contextual Value-added', 'Expected Progress' and 'Progress 8.'" *British Educational Research Journal* 43 (2): 193–212. https://doi.org/10.1002/berj.3264.

———. 2017b. "The Evolution of School League Tables in England 1992–2016: 'Contextual Value-Added', 'Expected Progress' and 'Progress 8.'" *British Educational Research Journal* 43 (2): 193–212. https://doi.org/10.1002/berj.3264.

Leng, Goh Say, Suddin Lada, Mohd Zulkifli Muhammad, Ag Asri Hj Ag Ibrahim, and Tamrin Amboala. 2011. "An Exploration of Social Networking Sites (SNS) Adoption in Malaysia Using Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB) and Intrinsic Motivation." *Journal of Internet Banking and Commerce* 16 (2).

Meneau, Lisa K., and Janakiraman Moorthy. 2022. "Struggling to Make Ends Meet: Can Consumer Financial Behaviors Improve?" *International Journal of Bank Marketing* 40 (2): 263–96. https://doi.org/10.1108/IJBM-12-2020-0595.

Ndubuisi, Gideon, Chuks Otioma, Solomon Owusu, and Godsway Korku Tetteh. 2022a. "ICTs Quality and Technical Efficiency: An Empirical Analysis." *Telecommunications Policy* 46 (10): 102439. https://doi.org/10.1016/j.telpol.2022.102439.

Rahman, Nur Shamsiah Abdul, Lina Handayani, Mohd Shahizan Othman, Waleed Mugahed Al-Rahmi, Shahreen Kasim, and Tole Sutikno. 2020. "Social Media for Collaborative Learning." *International Journal of Electrical and Computer Engineering* 10 (1): 1070–78. https://doi.org/10.11591/ijece.v10i1.pp1070-1078.

Rahman, Nur Shamsiah Abdul, Handayani Lina, Mohd Shahizan Othman, Waleed Mugahed Al-Rahmi, Shahreen Kasim, and Tole Sutikno. 2020. "Social Media for Collaborative Learning." ." *International Journal of Electrical and Computer Engineering* 10 (1).

Rahmasari, Erisa Adyati, and Auria F. Yogananti. 2021a. "Kajian Usability Aplikasi Canva (Studi Kasus Pengguna Mahasiswa Desain)." *ANDHARUPA: Jurnal Desain Komunikasi Visual & Multimedia* 7 (01): 165–78. https://doi.org/10.33633/andharupa.v7i01.4292.

Rahmasari, Erisa Adyati, and F Auria Yogananti. 2021b. "Kajian Usability Aplikasi Canva (Studi Kasus Pengguna Mahasiswa Desain)." *Desain Komunikasi Visual & Multimedia* 7 (1): 165–78.

Rahmi, Majinur. 2019. "Pengaruh Efektivitas, Efisiensi, Dan Kepuasan Pengguna Terhadap Usability Aplikasi Sistem Administrasi Perkantoran Elektronik Di Dinas Komunikasi Dan Informatika Kabupaten Pasaman Barat Provinsi Sumatera Barat," 1–10.

Rodliyah, Hafsah. 2021. "Keefektifan Pembelajaran Daring Dalam Mata Pelajaran Kearsipan Pada Siswa Kelas X Jurusan Otomatisasi Dan Tata Kelola Perkantoran (OTKP)." *Journal of Office Administration: Education and Practice* 1 (1): 94–107.

Santoso, Budi. 2010. "Pengaruh Perceived Usefulness, Perceived Ease of Use, Dan Perceived Enjoyment Terhadap Penerimaan Teknologi Informasi (Studi Empiris Di Kabupaten Sragen)." *Jurnal Studi Akuntansi Indonesia*, 1–15.

Santoso, Teguh Iman, M Rozali, and Riri Hanifa. 2022. "Structural Equation Modelling (Sem) Penggunaan Sem – Gsca Dan Aplikasi Gsca – Pro Untuk Mahasiswa Dan Dosen." *NUSANTARA Jurnal Pengabdian Kepada Masyarakat* 2 (3): 48–56. https://doi.org/10.55606/nusantara.v2i3.253.

Setyawati, Rena Eka. 2020. "Pengaruh Perceived Usefullness, Perceived Ease of Use Terhadap Behavioral Intention To Use Dengan Atittude Towards Using Sebagai Variabel Intervening (Studi Kasus Pada Gopay Dikota Yogyakarta)." *Jurnal Ekobis Dewantara* 3 (1): 39–51. https://doi.org/10.26460/ed_en.v3i1.1470.

Strydom, Herman. 2013. "An Evaluation of the Purposes of Research in Social Work." *Social Work (South Africa)* 49 (2): 149–64. https://doi.org/10.15270/49-2-58.

Sucianti, Nurviya, Hari Purwanto, and Liliek Nur Sulistiyowati. 2022. "Pengaruh Perceived Usefulness Dan Perceived Ease Of Use Terhadap Intention To Use Mobile Banking Selama Pandemi Dengan Attitude Towards Using Sebagai Variabel Mediasi (Studi Pada Pengguna Mobile Banking Di Kota Madiun)." *SIMBA: Seminar Inovasi Manajemen, Bisnis, Dan Akuntansi* 4 (October).

Sugiyono. 2018. *Metode Penelitian Kuantitatif*.

Thakur, Rakhi, and Mala Srivastava. 2014. "Adoption Readiness, Personal Innovativeness, Perceived Risk and Usage Intention across Customer Groups for Mobile Payment Services in India." *Internet Research* 24 (3): 369–92. https://doi.org/10.1108/IntR-12-2012-0244.

Tyas, Elok Irianing, and Emile Satia Darma. 2017a. "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.

———. 2017b. "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). https://doi.org/10.18196/rab.010103.

Udayana, Ida Bagus Nyoman, Agus Dwi Cahya, and Fadhilla Ajeng Aqdella. 2022. "The Effect of Perceived Usefulness, Perceived Ease of Use on Behavioral Intention to Use through the Intervening Attitude toward Using Variables in the Study of Shopeepay E-Wallet Services (Case Study on ShopeePay Users in Yogyakarta)." *Jurnal Terapan Manajemen Dan Bisnis* 8 (1): 29–40.

Yadrovskaia, Marina, Markos Porksheyan, Anastasia Petrova, Daria Dudukalova, and Yuri Bulygin. 2023. "About the Attitude towards Artificial Intelligence Technologies." *E3S Web of Conferences* 376 (March):05025. https://doi.org/10.1051/e3sconf/202337605025.

Zaharia, Silvia, and Matthias Würfel. 2021. "Voice Commerce - Studying the Acceptance of Smart Speakers." *Advances in Intelligent Systems and Computing* 1253 AISC (May): 449–54. https://doi.org/10.1007/978-3-030-55307-4_68.