Social Media Engagement and Student's Intention in Indonesian Higher Education Using Unified Theory of Acceptance and Use of Technology

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ABSTRACT

Understanding the motivations behind the use of social media in higher education is crucial for assessing its potential benefits and challenges. However, examining the contribution of social media on collaborative learning within the context of Indonesian universities holds significance due to the country's growing digital landscape and increasing adoption of social media platforms. This research aimed to analyze proposed collaborative learning models involving social media use among Indonesian University students. The proposed models are constructed based on the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). The quantitative method used was analyzing primary data from 143 private university students in Indonesia. Data were collected using a 5-point Likert scale self-reported questionnaire of Internet Anxiety, Habit, and Performance Expectancy and Behavior Intention as well as Social Media Engagement to mediate collaborative learning. The result of this study was that Social Media Engagement and Behavior Intention significantly influence Performance Expectancy and Habit. There was also a significant influence of Internet Anxiety on behavioral intention. Thus, Collaborative Learning is significantly influenced by Social Media Engagement. These results provided insight into developing effective strategies for integrating social media into higher education.

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1. INTRODUCTION

Social media technology has become a daily communal basis of modern society, including support for replacing software designed for acquiring and sharing knowledge [1]. There are various uses of social media in education, but particular problems still need further research [2]. Social media, as a part of online social networking, provides social benefits and community that also has implications for the education process [3]. Several universities include social media in pedagogy, but the challenge lies in how to elaborate as well as harmonize it effectively with the curriculum [4]. From the student perspective, using social media encourages student involvement and educational settings [2]. Currently, students use cell phones to access social media, which is also common for education, entertainment, and communication among them [5]. Furthermore, social media groups related to education schemes and various information, including virtual communities, are become preferred over the other types of social media communities that are also taken into account by students [5]. Considerations regarding how social media can support informal learning encourage a person's ability to utilize social media effectively for more formal learning purposes [3]. Many students and lecturers have begun to explore and accept using social media technology in educational institutions for teaching and learning purposes [6]. The involvement of students in social media is part of the strategy for forming identity and acculturation processes, which are cognitive and emotional in nature [7]. The use of social software in supporting lectures shows that students have positive expectations about interaction and quality of lectures. However, there are still concerns about technical issues, time, and efficiency in using social media [8].

The use of social media in higher education is a research topic seen from various theories, such as the Uses and Gratifications Theory, to evaluate the use of social media in higher education [9]. Hence, Thompson [10] states that through Uses & Gratification Theory (UGT), robust theory in mass communication and communication research is explained. The uses and gratifications theory posits a basic understanding of people's motivations for various media uses [11]. Elihu Katz explained the first explanation of the UGT from the University of Pennsylvania. The "Uses" approach begins with the assumption that media messages usually cannot influence individuals who do not use them in the social and psychological context in which they live [12]. The core assumption of the UGT is that members of an audience act actively, and the selection and use of the media have a purpose, directed at that goal and motivated to meet their social and psychological needs or motivation [10]. The context of the use of social media is influenced by age, gender, and social environment [10]. To date, individuals as members in the context of social media are considered active users of social media who certainly have their own goals and motivations for using social media. Moreover, research [9] uses the UGT theory to evaluate students' use of social media in extra-curricular activities consisting of three types of gratification: coordination, immediate access, and social presence. The uses & Gratification Theory used by Diep [13] for using Facebook is influenced by eight motives: meeting people, entertainment, maintaining relationships, social activities, sharing media products, asking about certain products, discussions, and information.

Due to the advancement of information and communication technology, the relationship model between information technology and other factors is the object of studies or research that developed rapidly from the 1990s. Several behavioral theories are widely used to examine end users' adoption of information technology. The two most popular behavioral models are the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), which are widely used to examine information technology adoption [14]. TAM was first proposed by Davis [15], whose main objective is to provide a basis to search for the influence of external factors on the beliefs, attitudes, and intended use of information technology [16]. TAM is the right model to predict technology acceptance by its users, including lecturers and students [17]. Some studies on Social Media that use TAM are researches [1, 18] in the use of Facebook and all types of social media. Kwarteng [19] has created the Unified Theory of Acceptance and Use of Technology (UTAUT). The UTAUT model identifies the main factors in ICT acceptance as measured by the desire to use technology and the actual level of use of the technology. UTAUT consists of four variables as determinants in information technology use: performance expectancy, effort expectancy, social influence, and facilitating conditions [19]. The relationship between the four predictors with the aim of using information technology is influenced by four moderator variables, namely gender, age, experience, and mandatory or voluntary use of the information technology being studied. The linkage of exogenous variables between TAM and UTAUT is performance expectancy and effort expectancy in UTAUT, in general, are variables similar to perceived usefulness and perceived ease of use at TAM. Some studies on Social Media that use UTAUT are Yuan [20] as a business platform by student entrepreneurs, Mensah [21] for the lecturer and professional library selection process for the practice of human resources.

Research using TAM or UTAUT tried to add other variables as determinants of the use of information technology, apart from two determinants of TAM from Davis [15], namely ease of use and usefulness, and four determinants of UTAUT from Abbas [22], namely performance expectancy, effort expectancy, social influence, and facilitating conditions. The UTAUT model has also been developed into UTAUT2 by Kwarteng [19] by elaborating three factors as a determinant, including hedonic motivation, price value, and habit. The difference between this research and previous research is applying UGT to studying social media in higher education. This research will provide insight into the reason and pattern of how students utilize social media platforms for collaborative learning. For instance, students may use social media to seek information, connect with peers, establish social support networks, express

themselves creatively, or enhance their sense of belonging within the academic community. Additionally, social media can provide opportunities for personalized learning experiences, allowing students to tailor their educational journey to their individual needs and interests.

Examining the impact of social media on collaborative learning within the context of Indonesian universities holds significance due to the country's growing digital landscape and increasing adoption of social media platforms. The purpose of this study was to analyze the impact of the use of social media on collaborative learning in the environment of universities in Indonesia. Collaborative learning is an instructional approach emphasizing group work, cooperation, and active participation among students to enhance their understanding and learning outcomes [11]. Integrating social media platforms into higher education has provided students new avenues for communication, information sharing, and collaboration [12]. By leveraging social media tools, students can engage in collaborative activities such as group discussions, knowledge sharing, peer feedback, and project coordination, regardless of geographical constraints or time limitations [13]. This study aims to shed light on how social media usage influences collaborative learning outcomes, identifying both the positive and negative effects. The novelty of this research is that this research is focused on the purpose of using social media in education schemes to explore more regarding collaborative learning driven by social media engagement and general use goals. Social media engagement represents the strength of personal relationships, values adopted, and considerations in the use of social media. The social media engagement study from the UGT perspective was carried out by Conffeto [23], which viewed the influence of the categories of content from social media on social media engagement.

Moreover, by extrapolating internal and external aspects as an engagement predictor, this study elaborates on both psychological and technological aspects to predict social media engagement. It refers to the psychological aspects with the proxies are internet-anxiety and habit and technological factors from social media, that is, performance expectancy. Habit refers to students' habit in the use of e-learning as a determinant variable used in this study, which is expected to show a significant effect on the behavioral intention that was confirmed by Ciric [24]. Another variable added to behavior models is anxiety, that according to Wei [25], anxiety, in terms of computer use, will reduce computer self-efficacy and further decrease the ease of use of computers. According to Songkhla [26], the individual characteristics of technology users, including computer anxiety, will affect the ease of use of information technology in the context of web-based learning. According to Yoo [27], Internet self-efficacy focuses on what someone believes he can achieve online now or in the future. However, as a big picture, three determinants are taken from information technology adoption models, particularly the Technology Acceptance Model and the Unified Theory of Acceptance and Use of Technology.

2. RESEARCH METHOD

This research is quantitative. The primary data were collected using a 5-point Likert scale of Internet Anxiety, Habit, Performance Expectancy, Behavior Intention, Social Media Engagement, and Collaborative Learning. The research data collection method uses purposive sampling. Students using e-learning as well as possessing social media accounts were respondent criteria of this study, i.e., 143 students from two private Universities in Indonesia. The measurement scale used in this research was the 5-Likert scale. At the research development stage, the instrument used was Cronbach alpha for the reliability test and Kaisser-Meyer-Olkin for the validity test.

The research model is based on UTAUT models modified by elaborating on social media use. The analysis of the research model applied a quantitative approach, and the Structural Equation Model proved the hypotheses. Three exogenous variables were Internet anxiety, habit, and Performance expectancy. Four questions measured Internet anxietythree questions for and three for performance expectancy. As a mediating variable, both social media engagement and behavior intention is measured using three items questions. While Social Media Engagement is constructed by the purpose and value of using social media, the Behaviour intention variable refers to the student's intention to plan, try and keep using the system. Four questions measured collaborative learning as an endogenous variable. In general, the research flow will be depicted in Figure 1. The hypothesis testing uses Structural Equation Model (SEM). According to Okaily [28], SEM is a statistical methodology that conducts a multivariate analysis of multi-causal relationships between various independent phenomena based on observations. SEM provides a better empirical approach to testing theoretical models by involving measurement and structural models in one analysis [29].
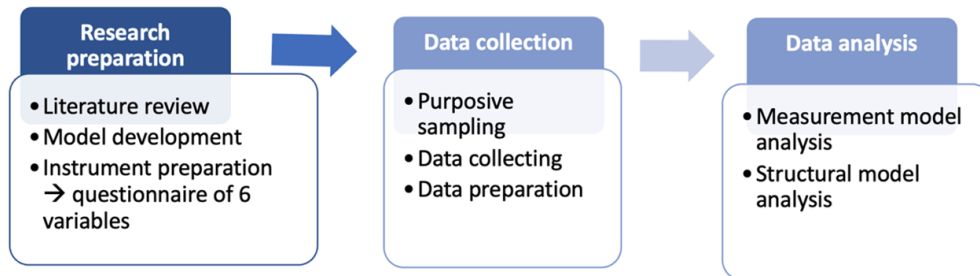
Figure 1. Research Flow Diagram

3. RESULT AND ANALYSIS

3.1. Characteristics of Respondents

Most of the respondents were women, as many as 98 people (68.5%) with an average age of 20 years. Most of the respondents (86%) did not subscribe to the internet at home but subscribed to an internet connection via smartphone (81.1%). The percentage of a computer person is 31.5%, with an average experience of using the internet and social media at 5.11 and 4.73 years. The average student allowance is IDR 441776, with an average cellular credit expense of IDR 43750. Three social media that are always or often used are Whatsapp (92.3%), followed by Facebook (59.5%) and Instagram (56.0%).

3.2. Measurement Model

The measurement model is conducted as the first stage in Structural Equation Model, using Confirmatory Factor Analysis (CFA) to measure the model, and its results are presented in Table 1. Three items were omitted, namely NA1, AN2, and CL4, because they had a low loading factor which caused a low value of Average Variance Extracted (AVE) and Composite Reliability (CR). AVE shows convergent validity, while CR shows the internal consistency size of the measurement model. The measurement model, in general, is still acceptable with AVE values above 0.5, except for Habit, CR is greater than 0.7 [29].

Table 1. Result of CFA

No	Variable	Item	Loading Factor	Cronba ch α	AVE	CR
1	Internet Anxiety (AN)	Worry when using (AN1)	0.496	0.752	0.5988	0.7489
		Worry about losing information (AN2)	0.476			
		Afraid to make mistakes (AN3)	0.795			
		Intimidating (AN4)	0.752			
2	Habit (HB)	Manners (HB1)	0.716	0.743	0.4865	0.7393
		Addiction (HB2)	0.649			
		Have to use (HB3)	0.725			
3	Performance Expectancy (PE)	Useful (PE1)	0.875	0.794	0.5662	0.7917
		Helpful (PE2)	0.782			
		Productivity (PE3)	0.567			
4	Social Media Engagement (SE)	Personal relation (SE1)	0.8	0.824	0.6056	0.8214
		Valuable (SE2)	0.797			
		Considered (SE3)	0.736			
5	Behavior Intention (BI)	Keep using (BI1)	0.712	0.746	0.4846	0.7378
		Try to use (BI2)	0.649			
		Plan to use (BI3)	0.725			
6	Collaborative Learning (CL)	Effective Learning (CL1)	0.748	0.818	0.5965	0.8142
		Skill development (CL2)	0.88			
		New knowledge (CL3)	0.675			
		Learning experience (CL4)+	0.479			

Note: NA1, AN2, and CL4 was dropped from structural model

3.3. Structural Model

The second stage of SEM analysis is testing the structural model used to test the research hypothesis. The structural model for the standardized model is presented in Figure 2. Before testing the hypothesis, the structural model presented in Figure 1 above was evaluated for the suitability of the model by using a number of Goodness of Fit (GOF) measures, whose results are presented in Table 2.

Figure 2. Standardized Model

Table 2. Model Fit

No	Statistics	Independence Model	Default Model	Saturated Model
1	CMIN/DF	7.421	1.563	-
2	IFI	0	0.941	1
3	TLI	0	0.912	-
4	CFI	0	0,938	1
5	RMSEA	0,213	0,063	-

The measurement model, in general, is relatively acceptable, seen from the parameter values better than the threshold stated by Okaily [28], namely CMIN / DF smaller than 2, IFI / TLI / CFI greater than 0.9, and RMSEA smaller than 0.08. Thus, the model analysis continues to test hypotheses whose results are presented in Table 3.

Table 3. Result of the Hypothesis Test

No	Effect of	Estimate	SE.	CR.	P	Remark
1	AN to SE	-0.105	0.074	-1.423	0.155	Rejected
2	PE to SE	0.325	0.096	3.398	***	Supported at α=0,001
3	HB to SE	0.539	0.130	4.137	***	Supported at α=0,001
4	HB to BI	0.602	0.135	4.452	***	Supported at α=0,001
5	PE to BI	0.213	0.090	2.375	0.018	Supported at α=0,05
6	AN to BI	-0.179	0.074	-2.434	0.015	Supported at α=0,05
7	SE to CL	0.767	0.127	6.061	***	Supported at α=0,001
8	BI to CL	0.064	0.112	0.570	0.569	Rejected

Performance expectations and habits significantly influence social media engagement, while the influence of internet anxiety is not proven. The higher the students' usefulness and habits, the higher the social media engagement. The influence of habit on social engagement is greater than performance expectancy. Habits, performance expectancy, and internet anxiety significantly affect behavioral intention. The influence of habit also influences behavioral intention more than expectancy and internet anxiety performance. Especially for internet anxiety, the higher the anxiety in internet use will reduce the behavioral intention. At the same time, the influence of performance expectancy and habit shows the direction of a positive relationship. Only social media engagement significantly affects collaborative learning in a positive direction, while the influence of behavioral intention on collaborative learning

is not proven. The effect of significant performance expectancy on the intention to use social media follows the results of research by Yuan [20] for the context of using social media for business purposes. The difference lies in other determinants, which in this study used internet anxiety and habit, while Nawi et al. used three other exogenous variables: risk, trust, and enjoyment. This study also supports the results of Mensah's [21] study, which used all exogenous variables in UTAUT, and the results were that the same performance expectancy had a significant effect on the intention to use social media. Nilasari [30], which uses two determinants of UTAUT, namely performance expectancy and effort expectancy, also shows that only performance expectancy significantly affects social media use.

The effect of internet anxiety on the use of social media is in accordance with the results of Shongkla's [26] study of computer use cases. Internet anxiety can lead to diverse levels of technology use, including social media. In this study, internet anxiety only significantly affected social engagement in a positive direction. Respondents belonging to the younger generation, in general, do not show concern about using the internet because all of them have had considerable experience using it, with an average of 5 years. Younger students have more experience using social media, but older students, in this case, who have entered the advanced level, are more interested in using media for learning purposes [8]. Understanding the motivations behind the use of social media in higher education is crucial for assessing its potential benefits and challenges. The Uses and Gratifications Theory (UGT), pioneered by Elihu Katz, provides a valuable framework for examining individuals' motivations for media consumption [7]. According to UGT, individuals actively select and use media to fulfill specific social and psychological needs [9]. In the context of social media, users have their own goals and motivations, influenced by factors such as age, gender, and social environment [10].

The use of social media for learning, in this case, collaborative learning, proves that UGT can also be applied to using social media for learning motives. This study is in line with the research of Froget [13], which shows that the use of Facebook for discussion purposes will increase the intensity of the use of social media. The discussion motive is in line with collaborative learning, one of the learning activities discussed between fellow social media users in the context of learning. Tehmina [7] mentions the use of social media from other perspectives on social media engagement, namely, student attachment will influence their identity in universities and student communities, representing a sense of belonging and pride. Social media engagement in this study points to the closeness of relationships and values that support using social media, although it is not fully utilized for learning purposes. This is as stated by Ghosh [31], that not all students consider social media useful for communication and learning. The results of this study indicate that social media has great potential to support learning. Some students informally have used social media to support their lecture activities. They are also classified as generations who have experience in internet use and are accustomed to using social media. Students generally consider themselves capable of using better technology resources than those specifically developed to support academic activities [1]. This statement implies that universities do not need to make a special information system for collaborative learning, for example, as a feature of e-learning systems, but use social media only formally. The findings of this research can contribute to the development of effective strategies for integrating social media into higher education, maximizing its potential for enhancing collaborative learning experiences and improving educational outcomes for students in Indonesia and beyond.

4. CONCLUSION

Personal characteristics still show a greater influence on social engagement than social media technology factors as measured by performance expectancy, while the anxiety internet does not affect social media engagement. It is related to the respondents belonging to the younger generation who tend to be literate on the internet and social media and are accustomed to using them daily. The intention to continue using social media is influenced by performance expectancy, habits, and internet anxiety, and habits remain the biggest influence. The significant influence of social media engagement on collaborative learning shows that students are more encouraged by the closeness of relationships, values, and considerations in using social media for learning purposes. The intention of continuing to use social media does not guarantee that students can make full use of social media for learning. It shows that the purpose and motivation for using social media are still relatively diverse according to the characteristics and lifestyles of students. The ability to use social media positively needs to be campaigned, especially by universities, to integrate social media with the teaching and learning process. In terms of students, they need to improve their ability to filter information on positive social media. The negative sides of social media need to be alleviated while enhancing the positive results. Universities, especially lecturers, can also create special groups on social media, such as class groups, which can be used to support learning. Participants stated that social media skills should be taught in optional classes covering generic competencies.

In conclusion, using social media in higher education, guided by the Uses and Gratifications Theory, presents a promising avenue for promoting collaborative learning. By understanding the motivations behind students' social media usage and examining its impact within the Indonesian university environment, this study aims to provide valuable insights that can inform educators, policymakers, and researchers to leverage social media effectively for educational purposes.

The main limitation of this study is the relatively small number of samples that might influence the goodness of fit of the structural model. Further research with larger samples needs to be continued to explore further the use of social media for learning purposes, specifically the moderating effects of gender and the experience of using social media. The two moderators included four moderators included in the UTAUT model. The difference between social media platforms, which in this study is dominated by Whatsapp, Facebook, and Instagram, also needs to be further investigated to find out which platforms are most suitable to support learning. From the perspective of behavioral models of technology use, for example, TAM and UTAUT, student perceptions of performance expectancy and effort expectancy from UTAUT may vary, and their impact on the objectives and motivation of media use can vary depending on the technological aspects of the various platforms.

5. DECLARATIONS

AUTHOR CONTIBUTION
The first and second authors contributed to designing the research framework, infield studies, data collection instrument preparation, drafting, and finalizing the manuscript. The third and Fourth authors contributed to data processing and statistical analysis. The fifth author contributed to field studies and data collection.

COMPETING INTEREST
The authors declare that there are no conflicts of interest regarding the publication of this paper.

REFERENCES

[1] h. K. Heng, W. Rx, F. Goh, S. Peng, I. Syazwani, I. Zainal Abidin, V. Navaratnam, A. Abdullah, and A. S. Abdullah, "The Mediating Role of Institutional Support on Relationship between Technology Acceptance Model (TAM) and Student Satisfaction to Use E- Learning during Covid-19 Pandemic: The Study of Private University in Malaysia," *International Journal of Special Education*, vol. 37, no. 3, p. 2022, mar 2022.

[2] I. Alvi, "College students' reception of social networking tools for learning in India: an extended UTAUT model," *Smart Learning Environments*, vol. 8, no. 1, pp. 1–18, sep 2021.

[3] M. T. Martinez Garcia and V. García, "Do You Use Instagram?: The Presence of Social Networks in the Foreign Language Classroom." in *Intercultural Communication and Ubiquitous Learning in Multimodal English Language Education*. IGI Global, jul 2022, pp. 226–243.

[4] J. Bharucha, "Exploring education-related use of social media: business students perspectives in a changing India," *Education + Training*, vol. 60, no. 2, pp. 198–212, jan 2018.

[5] A. A. M. Hassan Al-Ahdal and B. S. Aljafen, "Social Media Platforms: Perceptions and Concerns of Saudi EFL Learners," *World Journal of English Language*, vol. 13, no. 3, pp. 1–9, feb 2023.

[6] F. Fairuza, F. Aziz, N. Aziz, S. Roslan, and Z. Zaremohzzabieh, "Exploring the Factors of Social Media in Facilitating Knowledge-sharing among University Academics: A Case Study Approach," *International Journal of Management in Education*, vol. 17, no. 4, pp. 396–414, jan 2023.

[7] T. Khan, M. Kend, and L. A. Nguyen, "Social media academic networking insights from first-year accounting university students' experiences," *Higher Education Research & Development*, vol. 42, no. 2, pp. 306–321, feb 2023.

[8] A. T. Anastasio, T. Q. Tabarestani, K. Bagheri, M. A. Bethell, I. Prado, J. R. Taylor, and S. B. Adams, "A New Trend in Social Media and Medicine: The Poor Quality of Videos Related to Ankle Sprain Exercises on TikTok," *Foot & Ankle Orthopaedics*, vol. 8, no. 2, pp. 1–8, apr 2023.

[9] S. Reyad, A. Hussain, V. Gupta, S. Badawi, and A. Abbas, "Knowledge Management in Higher Educational Institutions of Oman: Determinants of Performance," in *17th International Conference on Intellectual Capital, Knowledge Management & Organisational Learning*, Toronto, oct 2020, pp. 324–331.

[10] N. Thompson, X. Wang, and P. Daya, "Determinants of News Sharing Behavior on Social Media," *Journal of Computer Information Systems*, vol. 60, no. 6, pp. 593–601, nov 2020.

[11] T. C. Sandanayake, "Enhancing students' performances by integrating social media in undergraduate learning," *International Journal of Learning, Teaching and Educational Research*, vol. 20, no. 4, pp. 43–60, 2021.

[12] T. Tirasawasdichai, B. Obrenovic, and H. Z. H. Alsharif, "The impact of TV series consumption on cultural knowledge: An empirical study based on gratificationcultivation theory," *Frontiers in Psychology*, vol. 13, no. December, pp. 1–16, dec 2022.

[13] P. Bich Diep, V. Minh Phuong, N. Van Chinh, N. Thi Hong Diem, and K. Bao Giang, "Health Science Students' Use of Social Media for Educational Purposes: A Sample from a Medical University in Hanoi, Vietnam," *Health Services Insights*, vol. 14, no. April, pp. 1–9, jan 2021.

[14] A. Namoun, A. Alrehaili, A. Tufail, A. Natour, Y. Husari, M. A. Al-Sharafi, A. M. Alsaadi, and H. Almoamari, "Factors Influencing the Acceptance of Online Mobile Auctions using User-Centered Agile Software Development: An Early Technology Acceptance Model," *International Journal of Advanced Computer Science and Applications*, vol. 13, no. 11, pp. 908–922, dec 2022.

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

[16] V. Patel, P. Kautish, and N. Patel, "AR apps' quality dimensions, customer brand engagement, WoM and purchase intention: Moderating role of perceived brand value," *International Journal of Electronic Marketing and Retailing*, vol. 14, jul 2023.

[17] A. Kamble, D. Golhar, and P. Kalkar, "Technology acceptance for online teaching-learning: perspectives of teachers from higher education in India," *Educational Media International*, vol. 59, no. 4, pp. 324–340, oct 2022.

[18] H. Fakhreldin and R. Miniesy, "Social Media Use and its impact on Egyptian MSMEs ' Growth," in *10th European Conference on Social Media*, vol. 2022, 2023, pp. 68–77.

[19] M. A. Kwarteng, A. Ntsiful, L. F. P. Diego, and P. Novák, "Extending UTAUT with competitive pressure for SMEs digitalization adoption in two European nations: a multi-group analysis," *Aslib Journal of Information Management*, pp. 1–27, jun 2023.

[20] D. Yuan, M. K. Rahman, M. A. Issa Gazi, M. A. Rahaman, M. M. Hossain, and S. Akter, "Analyzing of User Attitudes Toward Intention to Use Social Media for Learning," *SAGE Open*, vol. 11, no. 4, pp. 1–13, oct 2021.

[21] M. Mensah and O. B. Onyancha, "Demographic factors influencing the adoption and use of social media in university libraries in Ghana: A unified theory of acceptance and use of technology (UTAUT) approach," *Journal of Electronic Resources Librarianship*, vol. 33, pp. 170–194, 2021.

[22] S. K. Abbas, H. A. Hassan, S. Iftikhar, and A. Waris, "Assimilation of TTF and UTAUT for Mobile Banking Usage," *International Journal of Advanced Engineering, Management and Science*, vol. 4, no. 4, pp. 305–308, apr 2018.

[23] M. G. Confetto, C. Covucci, F. Addeo, and M. Normando, "Sustainability advocacy antecedents: how social media content influences sustainable behaviours among Generation Z," *Journal of Consumer Marketing*, no. May, pp. 1–17, may 2023.

[24] T. Vuckovic, D. Stefanovic, D. Ciric Lalic, R. Dionisio, Â. Oliveira, and D. Przulj, "The Extended Information Systems Success Measurement Model: e-Learning Perspective," *Applied Sciences*, vol. 13, no. 5, pp. 1–22, mar 2023.

[25] W. Wei, X. Gong, J. Li, K. Tian, and K. Xing, "A study on community older people's willingness to use smart homean extended technology acceptance model with intergenerational relationships," *Frontiers in Public Health*, vol. 11, no. June, pp. 1–12, jun 2023.

[26] J. Nasongkhla and C.-J. Shieh, "Using technology acceptance model to discuss factors in university employees' behavior intention to apply social media," *Online Journal of Communication and Media Technologies*, vol. 13, no. 2, pp. 1–14, apr 2023.

[27] N. Yoo and S. H. Jang, "Digital technology use, technological self-efficacy, and subjective well-being among North Korean migrants during the COVID-19 pandemic: Moderated moderation," *DIGITAL HEALTH*, vol. 9, no. May, p. 205520762311715, jan 2023.

[28] M. A. Okaily, M. S. A. Rahman, A. Ali, E. A. Shanab, N. Ra', E. Masa', and N. Deh, "An empirical investigation on acceptance of mobile payment system services in Jordan: extending UTAUT2 model with security and privacy," *International Journal of Business Information Systems*, vol. 42, no. 1, pp. 123–152, jan 2023.

[29] K. A. A. Sleiman, X. Cai, J. Lan, H. Lei, and R. Liu, "Relationship Marketing and Information Technology's Impact on Customer Satisfaction and Commitment," *Open Journal of Business and Management*, vol. 09, no. 03, pp. 1030–1049, jan 2021.

[30] B. M. Nilasari, "The Impact of Social Media on Employee Work Performance with Trust as a Mediation Variable," *Jurnal Manajemen*, vol. 24, no. 2, pp. 298–312, jun 2020.

[31] R. Ghosh, A. Khatun, and Z. Khanam, "The relationship between social media based teaching and academic performance during COVID-19," *Quality Assurance in Education*, vol. 31, no. 1, pp. 181–196, sep 2022.

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