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The impact of perceived usefulness, ease of use, trust, and usage attitude on the intention to maintain engagement in AR/VR sports: An exploration of the technology acceptance framework

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ABSTRACT

This study examines how perceived usefulness, ease of use, trust, and usage attitude influence the intention to maintain engagement in AR/VR sports. Virtual Reality (VR) and Augmented Reality (AR) technologies have garnered significant attention in the sports domain in recent years, holding promise for substantial economic and social benefits in the future. However, factors influencing user acceptance and continued use of AR/VR remain unclear. To foster sustained adoption of AR/VR sports technologies and meet the growing demand for diverse forms of athletic activities, this study investigates the factors influencing Chinese sports university students' willingness to continue participating in VR/AR sports using the Technology Acceptance Model (TAM). Data were collected through a questionnaire survey among 283 Chinese sports major university students who had participated in VR/AR sports. Data processing and hypothesis testing were conducted using SPSS 26.0 and AMOS 24.0. The main findings of this study are as follows: First, perceived usefulness has a positive influence on usage attitudes. Second, perceived ease of use positively influences user attitudes. Third, trust positively influences usage attitudes. Fourth, usage attitudes have a positive influence on behavioral intentions. These findings expand the application and explanatory power of TAM in the field of AR/VR sports and offer practical implications for the industry. They can serve as a reference for developing marketing strategies to encourage continued consumer use of these services in the future.

Contribution/ Originality: This study introduces a new variable into the existing Technology Acceptance Model (TAM) to establish the importance of trust within the model. This enhancement improves the model's explanatory power in the field of AR/VR technology, providing a valuable contribution that may influence both academic research and practical applications.

1. INTRODUCTION

VR/AR technology has been widely applied in education, entertainment, healthcare, sports, and daily life, promising future economic and societal benefits. Its use in the sports is becoming increasingly diversified, responding to the rising demand for various forms of physical activity. With the growing popularity of AR/VR for sports, AR/VR technology has become a subject of widespread research in the sports field [1].

Currently, numerous studies are addressing the current status and issues of AR/VR technology [2]. These studies focus on policy and institutional frameworks [3] enhancing athletic performance [4, 5] and managing sports facilities within the sports environment [6]. Despite the growing body of research on AR/VR technology,

there remains a significant gap in understanding the factors influencing user acceptance and usage from a user perspective. The study's significance lies in examining factors that influence user's continued use of AR/VR technology. This research can provide valuable insights into factors that promote long-term engagement, thereby retaining existing users and attracting new ones.

To explore factors' influencing users' intention to use AR/VR, this study is primarily based on the Technology Acceptance Model (TAM), with perceived usefulness and ease of use as exogenous variables. However, some scholars have pointed out limitations in using only perceived usefulness and perceived ease of use to explain intentions to adopt new technologies, suggesting that intentions to use new technologies may also be influenced by other external factors [7, 8]. Research indicates that trust is a predictive factor for user attitudes and usage intentions [9, 10].

Therefore, the purpose of this study is to incorporate trust as an exogenous variable into the model, alongside perceived usefulness and perceived ease of use, as predictive factors of user attitudes and behavioral intentions towards usage. Using the TAM model as a base, providing that these three prior variables have an effect on the intention to continue using has theoretical value. Moreover, from a user-centric perspective, this research also holds practical implications by providing marketing strategies for the development and revitalization of AR/VR in sports.

2. LITERATURE REVIEW

The study of behavioral intention for the continued use of AR/VR technology is based on the Technology Acceptance Model (TAM), which was first proposed by Davis [11] and which provides a new perspective for users to experience the use and acceptance of new technologies, and based on this theory, researchers in various fields have carried out a wide range of comprehensive studies [11]. The model integrates self-efficacy and expectation theory models from the Theory of Reasoned Action (TRA), and ongoing research confirms the TAM model's ability to effectively explain the users adoption process of new technologies [12].

In the TAM model, perceived usefulness and perceived ease of use are the antecedent variables affecting users' attitudes and behavioral intentions. Perceived usefulness refers to the extent to which users believe that a technology can enhance their performance or productivity, which is key to the continued use of AR/VR technologies [13]. Perceived ease of use reflects the ease of using the technology; higher perceived ease of use can reduce cognitive effort and improve comfort. Research shows that users are more likely to engage in long-term use of AR/VR applications when they are more intuitive and user-friendly [14].

Numerous studies indicate that trust plays a crucial role in the adoption and continued use of AR/VR technologies. Lack of trust can lead to consumer disengagement, and trust may be influenced by factors such as transparency in data handling, the reputation of technology providers, and users' experiences with the technology [15-17]. A higher level of trust contributes to increased user satisfaction and sustained engagement with AR/VR applications [18].

Usage attitude refers to individuals' attitudes toward using technological systems, which can either accept or reject the use of technological systems to meet their work requirements [19]. Users' usage attitudes determine the level of acceptance of new information technologies; if individuals perceive high practical utility in the technology, their intention to use the system or technology is also high.

In summary, based on the Technology Acceptance Model (TAM) and supported by existing relevant academic literature, this paper outlines the key factors influencing users' sustained engagement in AR/VR activities. It analyzes and summarizes the factors that influence the continued use of AR/VR activities. The argument posits that despite the presence of TAM's influencing factors, there remains a deficiency in evidence-based guidelines identifying the factors that influence AR/VR usage intentions. Therefore, a TAM-based model of AR/VR usage intention is proposed.

3. THEORETICAL BACKGROUND AND HYPOTHESIS SETTING

3.1. Perceived Usefulness and use Attitude

Based on previous studies. Huang, et al. [20] found that perceived usefulness significantly influences students' use attitudes when using internet technology. Di Stefano, et al. [21] pointed out that the optimal prerequisite for attitude is perceived usefulness, a critical factor between users and non-users. When perceived usefulness is perceived, the attitude will be more positive. Research by Khiong, et al. [22] demonstrated that perceived usefulness positively influences the interest in using electronic currency, and there is a positive correlation between perceived usefulness and use attitude. Therefore, this study drawing on previous research, proposes the following hypothesis:

H_1: Perceived usefulness will have a positive effect on user attitude.

3.2. Perceived Ease of use and Use Attitude

In previous studies, Susanto and Aljoza [23] found that perceived ease of use plays a crucial role in learning the application of new technologies. Pitafi, et al. [24] demonstrated that when a new system or technology is easy to use, users are more likely to adopt it. Chen and Aklikokou [25] revealed that in the context of using e-government services, user-friendly systems promote positive usage attitudes. Huang, et al. [26] showed a positive correlation between perceived ease of use and use attitude through a study on the convenience of Internet learning. Based on previous research, this study proposes the following hypothesis:

H_2: Perceived ease of use will have a positive effect on user attitude.

3.3. Trust and use Attitude

Ibrahim, et al. [27] demonstrated that users' trust in services may shape their attitudes towards the provided services and become a core element affecting users' intentions and actual applications. Hooda, et al. [28] showed in their study on users' intentions to use e-government systems that trust directly affects system usage and plays a critical role in use attitude. Choung, et al. [29] and their research team's survey revealed that trust plays a positive role in meeting users' needs when using artificial intelligence and positively influences user attitude [30]. demonstrated a positive correlation between trust and the intention to use Alipay. Based on previous research, this study proposes the following hypothesis:

H_3: Trust will have a positive effect on user attitude.

3.4. Use Attitude and Behavioral Intention

Users' behavioral intention is critical for accepting new technologies and learning more about them. Behavioral intention refers to an individual's willingness, desire, or interest to take specific actions or behaviors. When an individual has the desire and interest to perform specific actions, he or she will take corresponding behaviors. Moreover, interest can predict the occurrence or repetition of a specific behavior or action in the future [31].

Unal and Uzun [32] confirmed through a study on the use of the Edmodo educational social networking site by college students that attitude is the most critical factor influencing behavioral intention. Yasa, et al. [33] found in their study on the repeated use of COVID-19 websites that attitude significantly and importantly affects intention to use. Shalender and Sharma [34] found a positive correlation between use attitude and consumers' intentions to purchase electric vehicles. Therefore, based on previous research, this study proposes the following hypothesis:

H_4: User attitude will have a positive effect on behavioral intention.

4. RESEARCH METHOD

4.1. Sample and Data Collection

This study primarily employed a questionnaire survey to collect data. The questionnaire design drew upon scales from relevant foreign literature known for their high reliability and validity, which were adapted to suit the specific characteristics of this study. The participants selected were Chinese university students who have experienced AR/VR activities, primarily focusing on students from the Beijing Sport University in Beijing, China.

Data were obtained through convenience sampling, primarily using online surveys. Initially, survey questionnaires were created using Questionnaire Star software and then distributed through platforms such as WeChat, QQ, and email. Out of 300 distributed questionnaires, 283 were used for final statistical analysis, excluding those that were insincere or incomplete in their responses. Table 1 details the demographic characteristics of the respondents.

Table 1. Descriptive statistics of respondents' profiles.

Item	Range of options	Number of persons	Percentage (%)
Gender	Male	173	61.1
	Female	110	38.8
Age group	Less than 20 years old	28	9.9
	21-30 years old	149	52.7
	31-40 years old	72	25.4
	41-50 years old	23	8.13
	Over 51 years old	11	3.9
Education level	Less than high school graduation	9	3.2
	Specialized	21	7.4
	University	154	54.4
	Graduate school or above	99	35
Cost per exercise	$ 8	36	12.7
	$ 20	73	25.8
	$ 30	102	36
	$ 30~$ 70	50	17.7
	Over $ 70	22	7.8
Willing to continue to use AR/VR for sports	Willing	259	91.5
	Not willing	24	8.5

4.2. Variable Measurement

All items except for the general characteristics of the respondents are measured using a 5-point Likert scale.

Perceived usefulness comprises four items that explore the benefits of AR/VR technology for sports participants. Based on previous research, questions Islami, et al. [35] are used to measure perceived usefulness.

Perceived ease of use five items to understand participants' learning and use of AR/VR technology. Perceived ease of use is measured using the questionnaire from questions Islami, et al. [35].

Trust includes four items to investigate participants' trust in AR/VR technology. Trust is measured using the questionnaire from questions from Tian, et al. [36] in previous research.

Attitude towards use includes five items to explore participants' acceptance of AR/VR technology. Attitude towards use is measured using a modified and adapted questionnaire from questions Hwang, et al. [37] and Cao, et al. [38] in previous research. To examine participant's expectations for future AR/VR technology, behavioral intention includes five items. Behavioral intention is measured using the questionnaire from questions Mailizar, et al. [39] and Yang, et al. [40].

4.3. Analysis Method

Data were analyzed using SPSS (Statistical Product and Service Solutions) 26.0 and AMOS (Analysis of Moment Structures) 24.0. Confirmatory factor analysis was run to test the validity of the measurement instruments.

Cronbach's alpha (Alpha) reliability coefficient method was used to test the reliability of the questionnaire. Correlation analysis detects the correlation between variables, while structural equation modelling tests the research hypotheses.

4.4. Validity and Reliability of the Variable Measurement

Table 2 shows the results of the confirmatory factor analysis. The chi-square value of $\chi 2 = 320.083$ (df = 220, $p < 0.001$), $\chi 2/df = 1.455$, indicated that the model was more compact, the TLI = 0.982, CFI = 0.985, the two relativistic indexes were higher than 0.9, and the RMSEA = 0.039, indicated that the model fit was high. The minimum value of CR (Critical Ratio) is 0.926. The minimum value of AVE (Average Variance Extracted) is 0.715, and the correlation value between the variables is less than the AVE value. Therefore, this study has sufficient convergent validity and discriminant validity.

Table 2. Results of validation factor analysis and reliability analysis.

	Item	Estimate	S.E.	C.R.	CR	AVE	α
Perceived usefulness							
	The AR/VR sports technology can satisfy my curiosity	0.917			0.946	0.815	0.946
	The AR/VR technology helps me learn new sports skills and sports knowledge	0.876	0.039	14.901			
	VR/AR technology can fulfill my needs for sports	0.898	0.038	14.281			
	If people are aware of the benefits of VR/AR technology, it will be embraced by the public	0.92	0.039	15.371			
Perceived ease of use							
	Learning AR/VR technology to be quite easy	0.909			0.960	0.827	0.960
	Using AR/VR technology to be very effortless	0.906	0.038	25.742			
	I perceive the operation of AR/VR technology to be quite straightforward	0.913	0.039	26.288			
	I feel that I don't need to learn many sports skills to use AR/VR technology	0.908	0.038	25.900			
	I am confident in my ability to quickly learn and proficiently use AR/VR technology	0.912	0.039	26.138			
Trust							
	AR/VR sports technology to be reliable	0.86			0.937	0.719	0.938
	AR/VR sports technology is trustworthy.	0.808	0.053	17.938			
	People will trust AR/VR technology	0.949	0.046	24.296			
	As AR/VR sports technology matures, people will develop increased trust in it	0.931	0.045	23.442			
Adoption attitude							
	I would enjoy using AR/VR sports technology	0.822			0.937	0.749	0.937
	I am aware that AR/VR technology would be beneficial for my learning of sports skills and knowledge	0.864	0.05	18.372			
	After thorough study and understanding, I can use AR/VR sports technology proficiently	0.878	0.056	18.843			
	I feel that AR/VR technology provides me with more opportunities to engage in sports	0.869	0.058	18.542			
	I feel that using AR/VR technology is superior to traditional forms of exercise	0.892	0.057	19.330			
Behavioral intention							
	I am willing to use VR/AR technology for sports in the future	0.844			0.926	0.715	0.926
	I am willing to learn and understand VR/AR technology	0.836	0.060	17.943			
	I am willing to use VR/AR technology regularly	0.86	0.053	18.766			
	I am willing to recommend others to try using VR/AR technology	0.833	0.058	17.827			
	I believe that VR/AR technology is widely accepted	0.854	0.060	18.562			

In addition, Cronbach's alpha coefficients ranged from 0.926 to 0.960, which were all over 0.85, proving that the internal consistency between the items in this study showed reliable satisfaction.

5. RESULTS

5.1. Correlation Analysis

Table 3 presents the correlations between variables in this study, revealing positive correlations with p< 0.01. Moreover, the Average Variance Extracted (AVE) for each variable exceeds the square root of its correlation coefficient, ensuring discriminant validity. The AVE ranges from 0.846 to 0.909, all surpassing the threshold of 0.5. No multicollinearity issues were detected.

Some researchers suggest that the threshold for correlation coefficients between variables should not exceed 0.85 to avoid multicollinearity issues. Therefore, we analyzed the Variance Inflation Factor (VIF) to examine this problem. The results indicate that all VIF values are below 0.5, demonstrating that the model does not suffer from multicollinearity [41]. Consequently, the model possesses discriminant validity.

Table 3. Correlation analysis between variables.

Variable	1	2	3	4	5
Perceived usefulness	1(0.903)				
Perceived ease of use	0.12**	1(0.909)			
Trust	0.181**	0.267**	1(0.889)		
Adoption attitude	0.393**	0.241**	0.265**	1(0.865)	
Behavioral intention	0.155**	0.173**	0.27**	0.302**	1(0.846)

Note: **p<0.01. ( )=AVE.

5.2. Hypothesis Testing

Table 4 shows the results of testing the research model using structural equation modeling. The model fit indices are χ^2 = 332.745 (df = 223, p < 0.001), χ^2/df = 1.492, TLI =0.981, CFI =0.983, RMSEA =0.040, which are relatively favorable, indicating no issues with the assumptions.

Table 4. Structural model analysis results.

Hypothesis testing	Estimate	S.E.	C.R.	P
UA <--- PU	0.345	0.051	6.043	***
UA <--- PE	0.158	0.052	2.784	0.005**
UA <--- TRUST	0.164	0.055	2.831	0.005**
BI <--- UA	0.307	0.057	5.078	***

Note: χ 2 = 332.745(df = 223, p < 0.001), χ 2/df = 1.492, TLI=0.981, CFI=.983, RMSEA = 0.040.
** p < 0.01. *** p < .001.

Because perceived usefulness significantly impacts usage attitude (β = 0.345, p<0.001), Hypothesis 1 is accepted. Additionally, since perceived ease of use significantly influences usage attitude (β=0.158, p< 0.01), Hypothesis 2 is accepted. Furthermore, trust has a significant influence on usage attitude (β = 0.164, p < 0.01), so Hypothesis 3 is accepted. Finally, since usage attitude has a significantly positive impact on behavioral intention (β = 0.307, p < 0.001), Hypothesis 4 is accepted.

6. DISCUSSION

Based on the findings of this study and previous research, the following discussion will be conducted in this paper.

First, there is a positive correlation between perceived usefulness and usage attitude, which is consistent with previous research findings. Users' attitudes can moderate the impact of perceived usefulness on actual usage [35]. This suggests that when users perceive technology as useful or capable of meeting their current needs, their current intention to continue using it increases. Therefore, to enhance user adoption rates, vendors or technologists should strive to make users aware that using AR/VR sports is more beneficial and effective compared to traditional methods, emphasizing the practicality of the product to enhance its usefulness. For instance, enhancing the sense of

experience and improving performance outcomes can strengthen perceived usefulness. Overall, leveraging this point can help sustain products or technologies in the market, expand market share, and increase user loyalty.

Second, there is a positive correlation between perceived ease of use and usage attitude, which aligns with previous research findings indicating that higher perceived ease of use leads to a positive usage attitude and increased intention to use [24, 25]. This suggests that users do not encounter significant difficulties or obstacles when using the technology, thus resulting in a positive user experience and higher satisfaction. With such positive experiences, users are likely to recommend the technology to others. Therefore, manufacturers should recognize this and produce multifunctional and user-friendly products. For instance, technologists can focus on creating intuitive interfaces and providing comprehensive user support to lower the barriers to technology adoption. This effort will help increase users' willingness to continue using AR/VR sports.

Third, trust and usage attitude are positively correlated, consistent with previous research findings [32]. When users trust a technology, it enhances its adoption rate. Users who encounter satisfactorily resolved issues with a product or technology are likely to continue using it positively or explore other products from the same technology. Moreover, trust contributes to establishing a favorable reputation for the technology, thereby attracting more users [42]. Therefore, vendors should enhance trust in AR/VR technologies to alleviate user concerns about their security or reliability. Transparent privacy policies, consistent performance, and endorsements from credible sources can all contribute to enhancing users' willingness to sustain usage.

Fourth, there is a positive relationship between usage attitude and behavioral intention. This finding is consistent with previous research, which reports that users' attitudes toward augmented reality significantly positively influence their willingness to continue using the technology [43]. When users have a favorable attitude towards a product, their willingness to engage in the behavior increases. For example, showcasing success stories and cases can promote positive user experiences and influence usage attitudes. Since AR/VR technologies offer users diverse information perceptions, salespeople can leverage this feature by continuously innovating the technology to help customers gain a positive experience. This information can also explain and predict consumer behavior, increasing the likelihood of technology use, and making AR/VR sports a focus of future development.

7. CONCLUSION

This study is significant because it introduces new variables into the traditional TAM model, confirming the previous variables of perceived usefulness and perceived ease of use. It also identifies trust as a determinant factor influencing the intention to continue using AR/VR sports, which previous research has not confirmed. Importantly, this research provides constructive insights for the development of AR/VR sports technology. It can serve as a reference for devising marketing strategies and providing information for the development of user engagement programs to encourage continued consumer usage of these services. However, despite its significance, the study has certain limitations. Its participants were Chinese university students who had experienced AR/VR sports; thus, they may not accurately represent the entire population. Future research could address this by studying other demographic groups. Additionally, while this study introduced one antecedent variable into the TAM model, it could also explore other variables that may affect the adoption and sustained use of AR/VR sports technology, such as technological features, user satisfaction, and social influence.

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REFERENCES

[1] M. Kuleva, "Application of virtual reality to the enhancement of physical activity and sports for healthy individuals a systematic review," *Journal of Applied Sports Sciences*, vol. 7, no. 1, pp. 69-79, 2023. https://doi.org/10.37393/jass.2023.01.7

[2] P. Soltani and A. H. Morice, "Augmented reality tools for sports education and training," *Computers & Education*, vol. 155, p. 103923, 2020. https://doi.org/10.1016/j.compedu.2020.103923

[3] D. Li, C. Yi, and Y. Gu, "Research on college physical education and sports training based on virtual reality technology," *Mathematical Problems in Engineering*, vol. 2021, no. 1, p. 6625529, 2021. https://doi.org/10.1155/2021/6625529

[4] K.-E. Chang, J. Zhang, Y.-S. Huang, T.-C. Liu, and Y.-T. Sung, "Applying augmented reality in physical education on motor skills learning," *Interactive Learning Environments*, vol. 28, no. 6, pp. 685-697, 2020. https://doi.org/10.1080/10494820.2019.1636073

[5] B. Bideau, R. Kulpa, N. Vignais, S. Brault, F. Multon, and C. Craig, "Using virtual reality to analyze sports performance," *IEEE Computer Graphics and Applications*, vol. 30, no. 2, pp. 14-21, 2009.

[6] E.-Y. Choi, "Analyses of demand and consumption expenditure determinants for virtual reality sports theme parks," *Korean J. Sport Manag*, vol. 25, no, 3, pp. 73-83, 2020. https://doi.org/10.31308/kssm.25.3.6

[7] M. Wallang, "Determinants that influence citizen's usage of different e-government services: A malaysian case study," PhD Thesis, School of Social Science, the University of Queensland. https://doi.org/10.14264/uql.2018.227, 2018.

[8] K. Lee and S. Oh, "The users' intention to participate in a VR/AR sports experience by applying the extended technology acceptance model (ETAM)," *In Healthcare*, vol. 10, no. 6, p. 1117, 2022. https://doi.org/10.3390/healthcare10061117

[9] R. Rialti, L. Zollo, A. Ferraris, and I. Alon, "Big data analytics capabilities and performance: Evidence from a moderated multi-mediation model," *Technological Forecasting and Social Change*, vol. 149, p. 119781, 2019. https://doi.org/10.1016/j.techfore.2019.119781

[10] H. Dehghanpouri, Z. Soltani, and R. Rostamzadeh, "The impact of trust, privacy and quality of service on the success of E-CRM: The mediating role of customer satisfaction," *Journal of Business & Industrial Marketing*, vol. 35, no. 11, pp. 1831-1847, 2020. https://doi.org/10.1108/jbim-07-2019-0325

[11] F. D. Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology," *MIS Quarterly*, vol. 13, no. 3, pp. 319-340, 1989. https://doi.org/10.2307/249008

[12] M. Fishbein and I. Ajzen, "Belief, attitude, intention, and behavior: An introduction to theory and research," 1977.

[13] H. Al-Samarraie, B. K. Teng, A. I. Alzahrani, and N. Alalwan, "E-learning continuance satisfaction in higher education: A unified perspective from instructors and students," *Studies in Higher Education*, vol. 43, no. 11, pp. 2003-2019, 2018. https://doi.org/10.1080/03075079.2017.1298088

[14] I. B. N. Udayana, A. D. Cahya, and F. A. Aqdella, "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 chopee pay users in Yogyakarta," *Jurnal Terapan Manajemen dan Bisnis*, vol. 8, no. 1, pp. 29-40, 2022.

[15] D. Suleman and I. Zuniarti, "Consumer decisions toward fashion product shopping in Indonesia: The effects of attitude, perception of ease of use, usefulness, and trust," *Management Dynamics in the Knowledge Economy*, vol. 7, no. 2, pp. 133-146, 2019. https://doi.org/10.25019/mdke/7.2.01

[16] S. L. Jarvenpaa, N. Tractinsky, and M. Vitale, "Consumer trust in an internet store," *Information Technology and Management*, vol. 1, pp. 45-71, 2000.

[17] M. K. Lee and E. Turban, "A trust model for consumer internet shopping," *International Journal of Electronic Commerce*, vol. 6, no. 1, pp. 75-91, 2001. https://doi.org/10.1080/10864415.2001.11044227

[18] H. Siagian, Z. J. H. Tarigan, S. R. Basana, and R. Basuki, "The effect of perceived security, perceived ease of use, and perceived usefulness on consumer behavioral intention through trust in digital payment platform," Doctoral Dissertation, Petra Christian University, 2022.

[19] R. E. Setyawati, "The influence of perceived usefulness, perceived ease of use on behavioral intention to use with attitude towards using as an intervening variable (Case study on Gopay in Yogyakarta city)," *Jurnal Ekobis Dewantara*, vol. 3, no. 1, pp. 39-51, 2020.

[20] F. Huang, T. Teo, and M. Zhou, "Chinese students' intentions to use the internet-based technology for learning," *Educational Technology Research and Development*, vol. 68, pp. 575-591, 2020. https://doi.org/10.1007/s11423-019-09695-y

[21] G. Di Stefano, S. Ruggieri, R. C. Bonfanti, and P. Faraci, "Entrepreneurship on social networking sites: The roles of attitude and perceived usefulness," *Behavioral Sciences*, vol. 13, no. 4, p. 323, 2023. https://doi.org/10.3390/bs13040323

[22] K. Khiong *et al.*, "The role of compatibility, perceived usefulness, convenience perception and convenience perception on electronic money (e-wallet) usage interest," *Journal of Positive School Psychology*, vol. 6, no. 5, pp. 6281–6286, 2022.

[23] T. D. Susanto and M. Aljoza, "Individual acceptance of e-government services in a developing country: Dimensions of perceived usefulness and perceived ease of use and the importance of trust and social influence," *Procedia Computer Science*, vol. 72, pp. 622-629, 2015. https://doi.org/10.1016/j.procs.2015.12.171

[24] A. H. Pitafi, S. Kanwal, and A. N. Khan, "Effects of perceived ease of use on SNSs-addiction through psychological dependence, habit: The moderating role of perceived usefulness," *International Journal of Business Information Systems*, vol. 33, no. 3, pp. 383-407, 2020. https://doi.org/10.1504/ijbis.2020.10027455

[25] L. Chen and A. K. Aklikokou, "Determinants of E-government adoption: Testing the mediating effects of perceived usefulness and perceived ease of use," *International Journal of Public Administration*, vol. 43, no. 10, pp. 850-865, 2020. https://doi.org/10.1080/01900692.2019.1660989

[26] F. Huang, T. Teo, and R. Scherer, "Investigating the antecedents of university students' perceived ease of using the internet for learning," *Interactive Learning Environments*, vol. 30, no. 6, pp. 1060-1076, 2022. https://doi.org/10.1080/10494820.2019.1710540

[27] A. N. H. Ibrahim, M. N. Borhan, and R. A. O. Rahmat, "Understanding users' intention to use park-and-ride facilities in Malaysia: The role of trust as a novel construct in the theory of planned behaviour," *Sustainability*, vol. 12, no. 6, p. 2484, 2020. https://doi.org/10.3390/su12062484

[28] A. Hooda, P. Gupta, A. Jeyaraj, M. Giannakis, and Y. K. Dwivedi, "The effects of trust on behavioral intention and use behavior within e-government contexts," *International Journal of Information Management*, vol. 67, p. 102553, 2022. https://doi.org/10.1016/j.ijinfomgt.2022.102553

[29] H. Choung, P. David, and A. Ross, "Trust in AI and its role in the acceptance of AI technologies," *International Journal of Human–Computer Interaction*, vol. 39, no. 9, pp. 1727-1739, 2023. https://doi.org/10.1080/10447318.2022.2050543

[30] F. Kurniasari and N. Abd Hamid, "The effect of perceived usefulness, perceived ease of use, trust, attitude and satisfaction into continuance of intention in using Alipay," *Management & Accounting Review*, vol. 19, no. 2, pp. 132-150, 2020.

[31] R. Aditya and A. Wardhana, "Pengaruh perceived usefulness dan perceived ease of use terhadap behavioral intention Dengan Pendekatan technology acceptance model (TAM) Pada Pengguna instant messaging LINE di Indonesia," *Jurnal Siasat Bisnis*, vol. 20, no. 1, pp. 24-32, 2016.

[32] E. Unal and A. M. Uzun, "Understanding university students' behavioral intention to use Edmodo through the lens of an extended technology acceptance model," *British Journal of Educational Technology*, vol. 52, no. 2, pp. 619-637, 2021. https://doi.org/10.1111/bjet.13046

[33] N. Yasa *et al.*, "The role of attitude to mediate the effect of trust, perceived behavior control, subjective norm and perceived quality on intention to reuse the COVID-19 website," *International Journal of Data and Network Science*, vol. 6, no. 3, pp. 895-904, 2022. https://doi.org/10.5267/j.ijdns.2022.2.007

[34] K. Shalender and N. Sharma, "Using extended theory of planned behaviour (TPB) to predict adoption intention of electric vehicles in India," *Environment, Development and Sustainability*, vol. 23, no. 1, pp. 665-681, 2021. https://doi.org/10.1007/s10668-020-00602-7

[35] M. M. Islami, M. Asdar, and A. N. Baumassepe, "Analysis of perceived usefulness and perceived ease of use to the actual system usage through attitude using online guidance application," *Hasanuddin Journal of Business Strategy*, vol. 3, no. 1, pp. 52-64, 2021.

[36] Y. Tian, T. J. Chan, N. M. Suki, and M. A. Kasim, "Moderating role of perceived trust and perceived service quality on consumers' use behavior of alipay e-wallet system: The perspectives of technology acceptance model and theory of planned behavior," *Human Behavior and Emerging Technologies*, vol. 2023, no. 1, p. 5276406, 2023. https://doi.org/10.1155/2023/5276406

[37] J. Hwang, J. J. Kim, and K.-W. Lee, "Investigating consumer innovativeness in the context of drone food delivery services: Its impact on attitude and behavioral intentions," *Technological Forecasting and Social Change*, vol. 163, p. 120433, 2021. https://doi.org/10.1016/j.techfore.2020.120433

[38] G. Cao, Y. Duan, J. S. Edwards, and Y. K. Dwivedi, "Understanding managers' attitudes and behavioral intentions towards using artificial intelligence for organizational decision-making," *Technovation*, vol. 106, p. 102312, 2021. https://doi.org/10.1016/j.technovation.2021.102312

[39] M. Mailizar, A. Almanthari, and S. Maulina, "Examining teachers' behavioral intention to use E-learning in teaching of mathematics: An extended TAM model," *Contemporary Educational Technology*, vol. 13, no. 2, p. ep298, 2021. https://doi.org/10.30935/cedtech/9709

[40] K. Yang, J.-g. Choi, and J. Chung, "Extending the technology acceptance model (TAM) to explore customer's behavioral intention to use self-service technologies (SSTs) in Chinese budget hotels," *Global Business & Finance Review*, vol. 26, no. 1, pp. 79-94, 2021.

[41] J. F. Hair, M. Sarstedt, C. M. Ringle, and J. A. Mena, "An assessment of the use of partial least squares structural equation modeling in marketing research," *Journal of the Academy of Marketing Science*, vol. 40, pp. 414-433, 2012. https://doi.org/10.1007/s11747-011-0261-6

[42] M. Eisenegger, *Trust and reputation in the age of globalisation, reputation capital: Building and maintaining trust in the 21st century*. Springer. https://doi.org/10.1007/978-3-642-01630-1_2, 2009.

[43] S.-W. Hung, C.-W. Chang, and Y.-C. Ma, "A new reality: Exploring continuance intention to use mobile augmented reality for entertainment purposes," *Technology in Society*, vol. 67, p. 101757, 2021. https://doi.org/10.1016/j.techsoc.2021.101757