Measurement Tool for The Adoption of ChatGPT In Educational Institutions in Kazakhstan

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ABSTRACT

As artificial intelligence (AI) continues to revolutionize education, understanding the adoption dynamics of ChatGPT becomes increasingly vital. This study delves into the multifaceted factors influencing ChatGPT adoption within Kazakhstan's educational realm. Key variables include electronic word-of-mouth (eWOM), peer influence, time-saving features, self-esteem, academic self-efficacy, and perceived stress. Despite concerns about academic integrity and AI-enabled cheating, there is a lack of clear guidelines governing ChatGPT's integration into academic practices. This research sheds light on the motivations driving academics and researchers to embrace ChatGPT, emphasizing how ethical considerations shape adoption behaviors. Notably, academic self-efficacy has the most substantial positive impact on ChatGPT usage, while peer influence plays a minor role. The study collected data from 30 respondents, employing advanced methodologies for analysis. Insights reveal that ethical awareness significantly moderates the relationship between key variables, emphasizing its pivotal role in shaping ChatGPT utilization. The robust model predicts adoption behaviors effectively, offering valuable guidance for policymakers and educators in Kazakhstan.

Keywords: Artificial Intelligence; Chat GPT; Kazakhstan; Technology Adoption

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INTRODUCTION

As artificial intelligence (AI) continues to advance, it is increasingly becoming integrated into every aspect of human life including education (Menon and Shilpa, 2023; Zawacki-Richter *et al.*, 2019). AI applications are increasingly essential for colleges and universities, encompassing personalized learning, automated assessment, intelligent educational systems, and assistance for teaching staff (Gill *et al.*, 2024). A significant advancement in AI research has been the development of extensive language models based on Generative Pre-trained Transformers, such as ChatGPT (Chat Generative Pre-Trained Transformer) (Choudhury and Shamszare, 2023). Chat GPT (Generative Pre-trained Transformer) is an advanced language model that simulates human-like conversation using deep learning techniques (Greitemeyer and Kastenmüller, 2023). ChatGPT surpassed 100 million active users in January 2023, less than two months after its released-on 30 November 2022, becoming the user application with the most rapid growth rate in history (Hu, 2023).
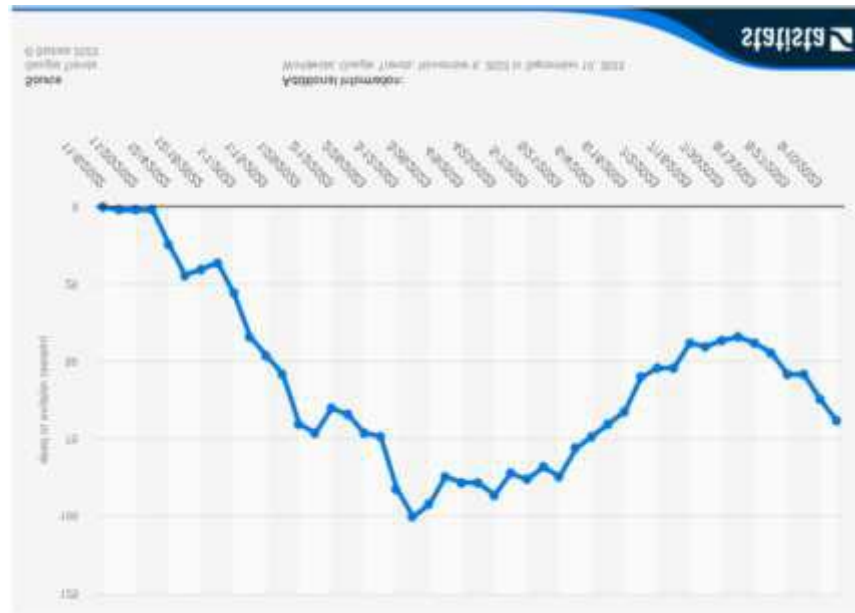
Figure 1: Google searches of "ChatGPT" (Data source: Google Trends- Statista, 2023)

In the field of education, teachers can use ChatGPT in their classes to personalize the learning process for their students(Javaid *et al.*, 2023). Conversely, the use of text completion, translation, and text summarizing tools can improve students' writing skills (Javaid *et al.*, 2023). Additionally, ChatGPT's capabilities can be utilized to detect content bias and correct issues with educational materials (Javaid *et al.*, 2023). ChatGPT also has emerged as an innovative platform that assists scientists and researchers in the process of idea generation and surmounting writer's block (Cotton *et al.*, 2024). Another advantage of using ChatGPT in the academic field is that it provides a platform for asynchronous communication (Cotton *et al.*, 2024). As it enables students to post questions and discuss subjects without physically being present, this functionality has been observed to enhance student engagement and collaboration (Li and Xing, 2021). Additionally, ChatGPT can analyze students' work and offer constructive feedback to enhance their writing skills by identifying grammatical and structural issues (Javaid *et al.*, 2023).

THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

Marketing
As defined by the American Marketing Association (2023), marketing encompasses the actions, organizations, and procedures involved in generating, conveying, distributing, and trading commodities that are valuable to clients, customers, society and partners.

Time-Saving Feature

The implementation of ChatGPT's time-saving functionality into data administration and daily life has elevated the significance of timeliness as a critical factor in project completion, enhancement of productivity, and achieving targets (Tian *et al.*, 2021).

e-WOM

As internet technologies grow and progress, customers are coming to depend on electronic word of mouth (eWOM) communications as a valuable resource to acquire information (Ismagilova *et al.*, 2021). The term "eWOM" encompasses both favorable and unfavorable evaluations of a service, product, or brand expressed by current, former, and prospective customers and disseminated via the internet, where it is accessible to all (Sulthana and Vasantha, 2019). e-WOM can occur in various formats and environments, such as blogs, social media platforms, online discussion forums, and review websites (Indrawati *et al.*, 2023).

Peer-Influence

The social psychology perspective highlights the significance of peer influence, also known as social influence, in shaping behaviour (Bin-Nashwan *et al.*, 2023). Peer-influence is a significant determining factor of behavioral intention, which refers to the extent to which an individual's acceptance of technology is pretentious by others' opinions, according to a number of well-known technology acceptance models, including the TBP, TRA, UTAUT, and TAM (Bin-Nashwan *et al.*, 2023; Venkatesh *et al.*, 2003).

Academic Self-Esteem

Self-esteem refers to an individual's perception of their own value, pride, and self-respect (Wilson *et al.*, 2010). It can be seen as a person's personal assessment of their own abilities and value in terms of self-esteem (Ahmed *et al.*, 2021). Additionally, self-esteem can be defined as the process of evaluating oneself, including both positive and negative aspects, which is evident in a person's attitude (Soelton *et al.*, 2020). Self-esteem is the outcome of evaluating one's own worth and abilities, indicating the level of self-assurance and belief in one's capability to be successful, valuable, and helpful (Soelton *et al.*, 2020).

Academic Self-Efficacy

Self-efficacy is a person's view and belief in their own abilities, which they effectively utilize to achieve success in a specific task (Capron Puozzo and Audrin, 2021). An alternative definition of self-efficacy pertains to an individual's perception of their own competence in accomplishing expected daily responsibilities, which influences their approach to making decisions (Ma *et al.*, 2021).

Perceived Stress

Perceived stress is the measurement of how stressful a situation is perceived to be in one's life; as such, it is associated with the subjective evaluation of life experiences (Lazarus and Folkman, 1984). Another alternative meaning is Perceived stress (PS) refers to the subjective emotions or thoughts that an individual experiences in relation to their stress levels (Phillips, 2013).
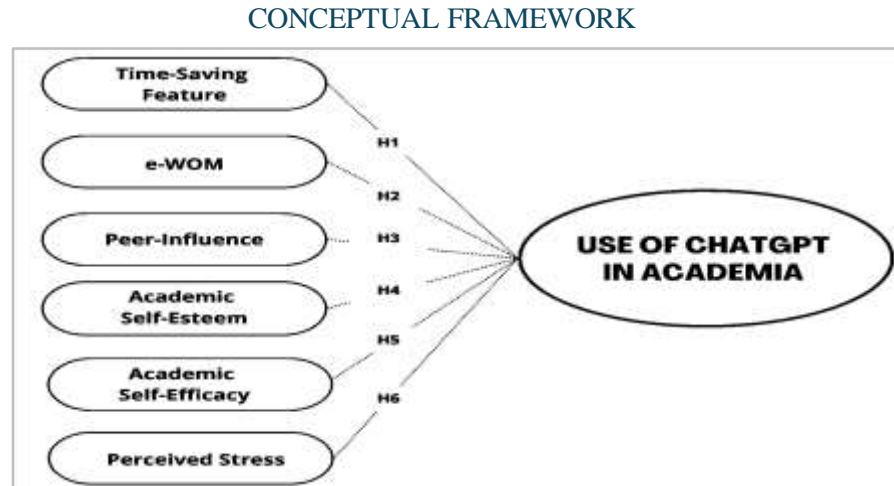
CONCEPTUAL FRAMEWORK

Figure 2 The conceptual framework was derived from a study conducted by Bin-Nashwan et al. (2023)

METHODOLOGY

This research employed a quantitative research approach which involved administering closed-ended questionnaires through Google Forms. Thus, the purposive sampling method of non-probability sampling, as described by (Indrawati, 2015) was used, where certain members of the sample were purposely chosen according to a certain criterion and not each of the members. some or all the people in the target population have an equal opportunity to have their name selected. Data validity and reliability were noted in the conduct of the study. Validity that checks on how well a given tool on the intended measure, was tested by the researcher. Reliability which works on the principle of consistency and dependability of the results obtained was also checked to reduce measurement errors to be able to provide reliable results (Indrawati, 2015). The authors of this paper have used and modified the survey question, which was taken from a previous study carried out by Venkatesh et al., (2003; 2012) and also other researchers. The researcher adhered to the five-step approach delineated by Indrawati et al., (2020). The reason for this type of assessment is to get expert advice to make appropriate changes that will refine the questionnaire items as per the purpose of the research. After this, the researcher has to undertake a readability check on the participants regarding each of the proposed questionnaire items to ensure clarity is understood appropriately. The following table shows the items for each factor:

Table 1: Tools for Measuring

Variable	Description	Item on Existing Journal	Items	Code
e-Wom	Word of Mouth (WOM) is an experimental method for disseminating. information. WOM is communications between clients regarding a specific service/product	1. I trust most of the opinions from my friend list on social media for purchasing smartphones.	1. I trust most of the opinions from my peer group on social media for adopting ChatGPT in academia.	EW

	or its provider without commercial control (Saeed Awadh Bin-Nashwan, Mouad Sadallah, Mohamed Bouteraa - Use of ChatGPT in academia: Academic integrity hangs in the balance).	2. Social media platforms offer honest opinions for purchasing smartphones. 3. I have a positive attitude toward recommendations of my social media contacts for buying smartphones.	2. Social media platforms provide valuable perspectives for implementing ChatGPT in the academic field. 3. I have a positive attitude toward recommendations from my social media contacts regarding the integration of ChatGPT in educational settings.	
Peer influence	The social psychology perspective emphasizes the importance of peer influence (also referred to as social influence) in determining behavior. The theory of conflict elaboration related to social influences is that an individual decision toward new product innovation is significantly determined by his/her peers and social groups (Saeed Awadh Bin-Nashwan, Mouad Sadallah, Mohamed Bouteraa - Use of ChatGPT in academia: Academic integrity hangs in the balance).	1. My friends could push me into doing just about anything. 2. When at school, if a group of people asked me to do something, it would be hard to say no. 3. I give into peer pressure easily.	1. My peers' positive experiences with ChatGPT could influence me to try it out. 2. When my classmates are actively using ChatGPT and finding it beneficial, I feel compelled to give it a try as well. 3. I am influenced by peer opinions in using ChatGPT.	PI
Time-saving features	The value of time and its impact on individual behavior has been widely praised in behavioral economics. In a time-sensitive modern society, time is a paramount intangible resource, the use of which can be exchanged for another resource, such as wealth or effort (Saeed Awadh Bin-Nashwan, Mouad Sadallah, Mohamed Bouteraa - Use of ChatGPT in academia: Academic integrity hangs in the balance).	1. Time-savings is my main reason for purchasing apparel online. 2. Shopping apparel online saves my time, as it provides instant information about apparel. 3. Shopping apparel online allows me to find exactly what I want in the least amount of time.	1. Time-saving is a crucial factor influencing my decision to adopt ChatGPT in education. 2. Utilizing ChatGPT in educational settings saves me time by providing instant responses and information. 3. ChatGPT simplifies the task of efficiently discovering pertinent educational content.	TSF
Self-esteem	Core self-evaluation (CSE) are well-known personality trait theories reflecting individuals' fundamental beliefs about themselves. Self-esteem, also known as "self-concept or self-confidence", is the primary psychological dimension of these theories, creating optimistic self-	1. Satisfied with self. 2. Have good qualities. 3. I can do things as well as others.	1. I feel prepared and confident about adopting ChatGPT. 2. I recognize the positive qualities I possess for using ChatGPT efficiently. 3. I think I can handle the use of ChatGPT as well as others.	SE

	belief (Saeed Awadh Bin-Nashwan, Mouad Sadallah, Mohamed Bouteraa - Use of ChatGPT in academia: Academic integrity hangs in the balance).	4. I have a positive self-attitude.	4. I have maintained a positive self-attitude towards integrating ChatGPT in educational institutions.	
Academic self-efficacy	Self-efficacy describes an individual confidence in his/her ability to do or learn specified tasks. In academia, it often refers to academic self-efficacy, defined as a person's confidence in achieving academic success and educational goals. It relates to motivation, accomplishment, emotion, cognition, and self-regulation (Saeed Awadh Bin-Nashwan, Mouad Sadallah, Mohamed Bouteraa - Use of ChatGPT in academia: Academic integrity hangs in the balance).	1. I know how to study to perform well on tests. 2. I am good at research and writing papers. 3. I am a very good student. 4. I usually do very well in school and at academic tasks. 5. I find my academic work interesting and absorbing.	1. I am confident in my ability to effectively use ChatGPT for educational purposes. 2. I believe I can effectively integrate ChatGPT into my learning processes. 3. I feel comfortable using ChatGPT as a tool for academic tasks. 4. I am adept at utilizing technology like ChatGPT for educational activities. 5. I find interacting with ChatGPT in an educational setting beneficial.	ASE
Perceived stress	Perceived stress refers to individuals' feelings or perceptions of tension or pressure he/she experiences over some time. Perceived stress comes when a person must cope uncontrollably with persistent inconveniences, issues, or obstacles regarding crucial aspects of life or work (Saeed Awadh Bin-Nashwan, Mouad Sadallah, Mohamed Bouteraa - Use of ChatGPT in academia: Academic integrity hangs in the balance).	1. In the last month, how often have you dealt successfully with irritating life hassles? 2. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life? 3. In the last month, how often have you felt confident about your ability to handle your personal problems? 4. In the last month how often have you felt that things were going your way?	1. In the last month, how often have you successfully managed any challenges encountered while using ChatGPT for educational purposes? 2. In the last month, how often have you felt that you were effectively adapting to the changes brought about by incorporating ChatGPT into your educational experience? 3. In the last month, how often have you felt confident in your ability to address any personal obstacles that arose while using ChatGPT within an educational context? 4. In the last month, how often have you felt that your experiences with ChatGPT in educational settings have been aligned with your expectations?	PS

		5. In the last month, how often have you felt that you were on top of things?	5. In the last month, how often have you felt on top of your tasks when utilizing ChatGPT for educational purposes?	
Dependent Variable	Use of ChatGPT in Academia	1. For fun	1. I use ChatGPT for fun.	UCA
		2. To get help with academic work in college (e.g., assignments, quiz, test).	2. I use ChatGPT to get help with my academic assignment in University.	
		3. To improve English skills (e.g, reading, writing, grammar, vocabulary, listening, speaking).	3. I use ChatGPT to improve my English skills.	
		4. To translate texts.	4. I use ChatGPT to translate texts.	
		5. To get help with research.	5. I use ChatGPT to get help with research.	

Research Method & Analysis

A pilot study was conducted to assess the validity and reliability of each item in the questionnaire before proceeding with the research. 30 respondents who used ChatGPT in educational settings, completed the pilot test survey items, and this data was utilized to conduct validity and reliability assessments (Indrawati et al., 2020). Therefore, the reliability of the instrument was established when testing the validity of the instruments through the Pearson Product Moment (r-count) correlation using a significance level (α) of 0. 05 and with a sample size (n) of 30 gave a correlation rate (r-table) of 0. 361.

Table 2. Validity Test Results

Variable	Item Code	CITC	Results
	EW1	0.834	Valid
e-WOM	EW2	0.839	Valid
	EW3	0.799	Valid
	PI1	0.655	Valid
Peer Influence	PI2	0.505	Valid
	PI3	0.519	Valid
	TSF1	0.760	Valid
Time-Saving Features	TSF2	0.846	Valid
	TSF3	0.731	Valid
	SE1	0.893	Valid
Self-Esteem	SE2	0.900	Valid
	SE3	0.869	Valid
	SE4	0.846	Valid
Academic Self-Efficacy	ASE1	0.890	Valid

	ASE2	0.791	Valid
	ASE3	0.920	Valid
	ASE4	0.894	Valid
	ASE5	0.898	Valid
	ASE6	0.931	Valid
	PS1	0.751	Valid
	PS2	0.830	Valid
Perceived Stress	PS3	0.852	Valid
	PS4	0.858	Valid
	PS5	0.848	Valid
	UCA1	0.304	Valid
Use of ChatGPT in	UCA2	0.645	Valid
Academia	UCA3	0.746	Valid
	UCA4	0.662	Valid
	UCA5	0.637	Valid

From the data in the table, it indicates that the validity test using SPSS is considered valid. This means that it possible to conclude that the items in the questionnaire have met the validity test. The first is the reliability of the research where this element cannot be overemphasized as it forms the basis of the confidence, consistency and reliability of the measurements to validate the findings as well as reduce any possible errors that could have been made in the entire process (Indrawati, 2015). Internal consistency is usually estimated by Cronbach's Alpha if the instruments contain more than one item. The results are considered reliable if the obtained value of Cronbach's Alpha coefficient is more than 0. 70. This measure is frequently being applied to calculate the internal consistency of questionnaires which contain many items, and those indicators that have high values are considered to be reliable. Cronbach Apha Coefficient is more than 0.70.

Table 3 Heterotrait-Monotrait (HTMT) results

No.	Variable	Cronbach Alpha	Results
1.	e-WOM	0.912	Reliable
2.	Peer Influence	0.726	Reliable
3.	Time-Saving Features	0.881	Reliable
4.	Self-Esteem	0.947	Reliable
5.	Academic Self-Efficacy	0.965	Reliable
6.	Perceived Stress	0.935	Reliable
7.	Use of ChatGPT in Academia	0.893	Reliable

From the table data above, it is also evident that all the variables in this research have adequate reliability and are suitable for use.

COCLUSION

The validity and reliability of the measurement instruments were evaluated with data collected from 30 students who used ChatGPT in academic setting. The results support the measurement validity

and reliability of all the variables and items, which supports measurements are prepared for further research at the time that was recorded. The findings of the average validity test indicate affirmation for all items in relation to their correlation. Thus, values above the r-table threshold confirm the validity that characterizes their meanings. However, results derived

from the reliability tests prove that the obtained values for Cronbach's Alpha are higher than 0.70.Thus, inter-observer reliability on all the variables was affirmed.

REFERENCES

Abdillah, H.Z., Partino and Madjid, A. (2023), "Enhancing Student Well-being through AI Chat GPT in the Smart Education University Learning Environment: A Preliminary Review of Research Literature", *E3S Web of Conferences*, EDP Sciences, Vol. 440, p. 05005, doi: 10.1051/E3SCONF/202344005005.

Ahmed, O., Nayeem Siddiqua, S.J., Alam, N. and Griffiths, M.D. (2021), "The mediating role of problematic social media use in the relationship between social avoidance/distress and self-esteem", *Technology in Society*, Pergamon, Vol. 64, p. 101485, doi: 10.1016/J.TECHSOC.2020.101485.

Bin-Nashwan, S.A., Sadallah, M. and Bouteraa, M. (2023), "Use of ChatGPT in academia: Academic integrity hangs in the balance", *Technology in Society*, Pergamon, Vol. 75, p. 102370, doi: 10.1016/J.TECHSOC.2023.102370.

Capron Puozzo, I. and Audrin, C. (2021), "Improving self-efficacy and creative self-efficacy to foster creativity and learning in schools", *Thinking Skills and Creativity*, Elsevier, Vol. 42, p. 100966, doi: 10.1016/J.TSC.2021.100966.

Castanha, J., Gurav, P., Subhash, K.B. and Indrawati. (2023), "A study on behaviour intention towards adoption of navigation apps by travellers: The UTAUT2 perspective", Publishing India Group.

Choudhury, A. and Shamszare, H. (2023), "Investigating the Impact of User Trust on the Adoption and Use of ChatGPT: Survey Analysis", *Journal of Medical Internet Research*, JMIR Publications Inc., Vol. 25 No. 1, p. e47184, doi: 10.2196/47184.

Cooper, G. (2023), "Examining Science Education in ChatGPT: An Exploratory Study of Generative Artificial Intelligence", *Journal of Science Education and Technology*, Springer Science and Business Media B.V., Vol. 32 No. 3, pp. 444–452, doi: 10.1007/S10956-023-10039-Y/TABLES/1.

Cotton, D.R.E., Cotton, P.A. and Shipway, J.R. (2024), "Chatting and cheating: Ensuring academic integrity in the era of ChatGPT", *Innovations in Education and Teaching International*, Routledge, Vol. 61 No. 2, pp. 228–239, doi: 10.1080/14703297.2023.2190148.

Dwivedi, Y.K., Kshetri, N., Hughes, L., Slade, E.L., Jeyaraj, A., Kar, A.K., Baabdullah, A.M., *et al.* (2023), "Opinion Paper: 'So what if ChatGPT wrote it?' Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy", *International Journal of Information Management*, Pergamon, Vol. 71, p. 102642, doi: 10.1016/J.IJINFOMGT.2023.102642.

Gill, S.S., Xu, M., Patros, P., Wu, H., Kaur, R., Kaur, K., Fuller, S., *et al.* (2024), "Transformative effects of ChatGPT on modern education: Emerging Era of AI Chatbots", *Internet of Things and Cyber-Physical Systems*, Elsevier, Vol. 4, pp. 19–23, doi: 10.1016/J.IOTCPS.2023.06.002.

Greitemeyer, T. and Kastenmüller, A. (2023), "HEXACO, the Dark Triad, and Chat GPT: Who is willing to commit academic cheating?", *Heliyon*, Vol. 9, p. e19909, doi: 10.1016/j.heliyon.2023.e19909.

Hair, J. and Alamer, A. (2022), "Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example", *Research Methods in Applied Linguistics*, Elsevier, Vol. 1 No. 3, p. 100027, doi: 10.1016/J.RMAL.2022.100027.

Hair, J.F., Hult, G.T.M., Ringle, C.M., Sarstedt, M., Danks, N.P. and Ray, S. (2021), "Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R", Springer International Publishing, Cham, doi: 10.1007/978-3-030-80519-7.

Hair, J.F., Matthews, L.M., Matthews, R.L. and Sarstedt, M. (2017), "PLS-SEM or CB-SEM: updated guidelines on which method to use", *International Journal of Multivariate Data Analysis*, Inderscience Publishers, Vol. 1 No. 2, p. 107, doi: 10.1504/IJMDA.2017.087624.

Hair, J.F., Risher, J.J., Sarstedt, M. and Ringle, C.M. (2019), "When to use and how to report the results of PLS-SEM", *European Business Review*, Emerald Group Publishing Ltd., Vol. 31 No. 1, pp. 2–24, doi: 10.1108/EBR-11-2018-0203/FULL/PDF.

Hu, K. (2023), "ChatGPT sets record for fastest-growing user base - analyst note | Reuters", *Reuters*, available at: https://www.reuters.com/technology/chatgpt-sets-record-fastest-growing-user-base-analyst-note-2023-02-01/ (accessed 27 May 2024).

Indrawati. (2015), *Metode Penelitian Manajemen Dan Bisnis: Konvergensi Teknologi Komunikasi Dan Informasi*, Refika Aditama, Bandung.

Indrawati, Putri Yones, P.C. and Muthaiyah, S. (2023), "eWOM via the TikTok application and its influence on the purchase intention of somethinc products", *Asia Pacific Management Review*, Elsevier, Vol. 28 No. 2, pp. 174–184, doi: 10.1016/J.APMRV.2022.07.007.

Ma, K., Chutiyami, M., Zhang, Y. and Nicoll, S. (2021), "Online teaching self-efficacy during COVID-19: Changes, its associated factors and moderators", *Education and Information Technologies*, Springer, Vol. 26 No. 6, pp. 6675–6697, doi: 10.1007/S10639-021-10486-3/TABLES/7.

Mahmoud AlAli, R. and Ahmad Al-Barakat, A.A. (2023), "Leveraging The Revolutionary Potential of Chatgpt to Enhance Kindergarten Teachers' Educational Performance: A Proposed Perception", *Eurasian Journal of Educational Research*, Vol. 106 No. 106, pp. 50–69, doi: 10.14689/ejer.2023.106.004.

Menon, D. and Shilpa, K. (2023), "'Chatting with ChatGPT': Analyzing the factors influencing users' intention to Use the Open AI's ChatGPT using the UTAUT model", *Heliyon*, Elsevier, Vol. 9 No. 11, p. e20962, doi: 10.1016/J.HELIYON.2023.E20962.

Phillips, A.C. (2013), "Perceived Stress", *Encyclopedia of Behavioral Medicine*, Springer, New York, NY, pp. 1453–1454, doi: 10.1007/978-1-4419-1005-9_479.

Prasetio, A., & Purnamawati, E. D. (2023). The Role of Brand Ambassador and Electronic Word of Mouth towards Purchase Intention. JDM (Jurnal Dinamika Manajemen), 14(1), 1-21.

Prasetio, A., Witarsyah, N.A. and Indrawati. (2024), "The effect of e-WOM on purchase intention in e-commerce in Indonesia through the expansion of the information adoption model", International Journal of Data and Network Science, Growing Science, Vol. 8 No. 3, pp. 1959–1968, doi: 10.5267/J.IJDNS.2024.1.017.

Pratama A, Adi Nugraha P, Indrawati I. The Effect of Social Media Experiential Marketing Towards Customers' Satisfaction (A Study in Chingu Korean Fan Cafe Bandung Indonesia). 2017;3:56-63. doi:10.20469/ijbas.3.10002-2.

Rasul, T., Nair, S., Kalendra, D., Robin, M., Oliveira, F. de, Santini, Ladeira, W.J., *et al.* (2023), "The role of ChatGPT in higher education: Benefits, challenges, and future research directions", *Journal of Applied Learning & Teaching*, Vol. 6 No. 1.

Rudolph, J., Tan, S. and Tan, S. (2023), "ChatGPT: Bullshit spewer or the end of traditional assessments in higher education?", *Journal of Applied Learning and Teaching*, Vol. 6 No. 1.

Soelton, M., Amalia, D., Noermijati and Wahyudiono, B. (2020), "Self-Esteem: The Levels of Religiosity in Job Insecurity and Stress in Government Company", *Proceedings of the 4th International Conference on Management, Economics and Business (ICMEB 2019)*.

Sulthana, N. and Vasantha. (2019), "Influence Of Electronic Word Of Mouth eWOM On Purchase Intention", *INTERNATIONAL JOURNAL OF SCIENTIF*