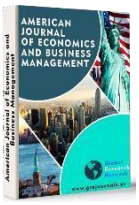

American Journal of Economics and Business Management

Vol. 7 Issue 7 | **pp.** 11-19 | **ISSN:** 2576-5973
Available online @ https://www.globalresearchnetwork.us/index.php/ajebm

Article

Understanding the Use of ChatGPT Among Faculty Members from the Perspective of Technology Acceptance Model (TAM): an Applied Study at University of Warith Al-anbiyaa

Mohammed Nabeel Hadi Haboobi*

Al-Furat Al-Awsat Technical University, Administrative Technical College / Kufa
* Correspondence: mohammed.haboobi@atu.edu.iq

Abstract: This study investigated the acceptance and use of ChatGPT among lecturers at Warith Al-Anbiyaa University through the lens of Technology Acceptance Model (TAM) while PLS-SEM for data analysis. The sample consisted of faculty member in which 168 valid responses were collected. Findings showed confirmed that all hypotheses were supported. The results show that perceived ease of use significantly affect perceived usefulness, while perceived usefulness does positively impact attitudes towards use. In addition, intention to use has a significant impact on intention to use behavior, which in turn affects actual use. The results illustrate the importance perceived ease of use and perceived usefulness in shaping faculty members' attitudes and opinions, leading to better acceptance of ChatGPT. Results of the study provides practical recommendations for improving the user experience, providing training and support, enhancing success stories, encouraging feedback for iterative development, and ChatGPT integration into the existing workflow.

Keywords: Technology Acceptance Model, ChatGPT, TAM.

Citation: Mohammed Nabeel Hadi Haboobi*. Understanding the Use of ChatGPT Among Faculty Members from the Perspective of Technology Acceptance Model (TAM): an Applied Study at University of Warith Al-anbiyaa. American Journal of Economics and Business Management 2024, 7(7), 11-19.

Received: 10th July 2024
Revised: 13th July 2024
Accepted: 22th July 2024
Published: 28th July 2024

1. Introduction

The tremendous development in the information systems field has led to major changes in various business sectors due to its contribution to achieving significant savings in effort and time (Al-Rahmi et al. 2019), as well as giving organizations high flexibility in enhancing their performance. The higher educational sector is one of the most prominent sectors concerned with employing information technology in the educational and research process out of a desire to benefit from its tremendous leverage (Lazim, Ismail, and Tazilah 2021).

Rapid advances in artificial intelligence (AI) era have dramatically transformed industries, consisting of training. Among those technology, ChatGPT, an advanced AI language model developed via OpenAI, has acquired large attention for its capability to enhance coaching and studying

studies whilst instructional institutions behavior their guides the usage of AI-powered equipment no (Alzoubi, 2024). It is vital to recognize the elements affecting adoption. This modern-day have a look at explore and use of ChatGPT among college at Warith Al-Anbiyaa University, the usage of the Technology Acceptance Model (TAM) as the theoretical framework The TAM model proposed by way of Davis (1986) provides a theoretical basis it's miles hard to look at customers' data recognition techniques. The model includes main predictors, the first approximately usefulness and the second one approximately easiness(Al-Rahmi et al. 2019).

Warith Al- Anbiyaa University, one of the leading establishments in Iraq, is actively adopting new technology to create an engaging and powerful getting to know environment. Faculty individuals have a key function to play in this method, as the adoption and powerful use of latest technology is important to their successful implementation. This have a look at focuses on the perspectives of college individuals, analyzing how their intentions in the direction of usefulness and easiness whiles the use of ChatGPT impact their intentions to undertake and use the generation(Lazim et al. 2021).

Understanding faculty attitudes in the direction of ChatGPT is crucial for numerous motives. First, it could guide institutions' techniques for integrating AI into education and research, ensuring that using this era is aligned with faculty needs and expectancies. Second, the findings of this observe may additionally contribute to a broader verbal exchange about AI in training, with effective implications for accelerated instructor engagement and help. Finally, this(Putri, Widagdo, and Setiawan 2023)

2. Literature Review

Despite the abundance of research in the subject of information technology acceptance (Camilleri and Falzon 2021), the problem of person popularity of data era is still complex and hard to obtain. At the same time, the issue is of very first-rate significance due to the fact corporations make investments billions of greenbacks yearly in contemporary generation (Bradley, 2009). Technology acceptance means the willing of a user to make use of a technology at his work. (Teo, 2011)

The technology acceptance model (TAM) is extensively used across information technology systems literature, which was presented by Davis (1986) in his doctoral thesis based on the theory of justified action (Wicaksono et al. 2023). The purpose of the model was to predict user intention to use a technology by mixing technological and social

dimensions (Alomary & Woollard, 2015, p. 1). The model includes two main factors (see figure 1), which are as follows: a) Perceived Usefulness: how easy the technology; b) Perceived Ease of Use: how easy the technology (Davis et al, 1989).

The model included Attitude Towards Use, which directs future behaviors and can be defined as "individuals' positive or negative evaluation of the performance of a particular behavior" (Alomary & Woollard, 2015, p. 1). The model also includes Behavioral Intention that test how ready the user for the technology (Abbasi et al, 2013).

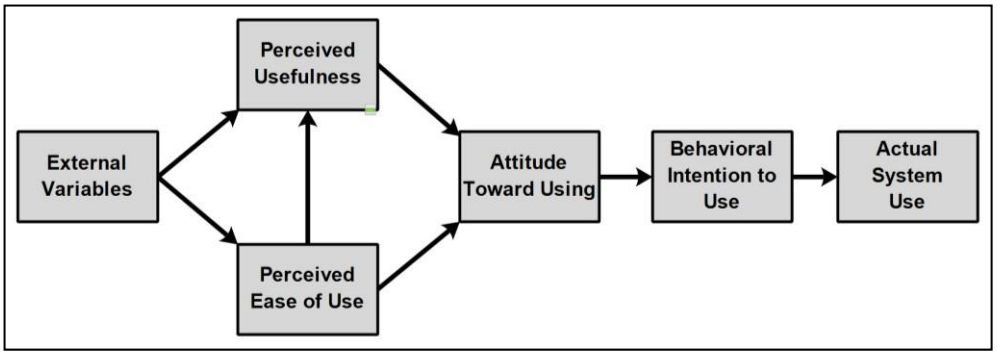

Figure 1. TAM Framework

Source: (Davis et al., 1989)

3. Hypotheses

Hypotheses for this study were derived from TAM framework. Therefore, the study would explore the following hypotheses (see figure 2):

- H1 Perceived ease of use (PE) significantly impact perceived usefulness (PU).
- H2 Perceived ease of use (PE) significantly impact attitude towardsusing (AT).
- H3 Perceived usefulness (PU) significantly impact attitude towardsusing (AT).
- H4 Attitude towards using (AT) significantly impact behavioral intention to use (BI).
- H5 Behavioral intention (BI) significantly impact actual systemuse (AU).

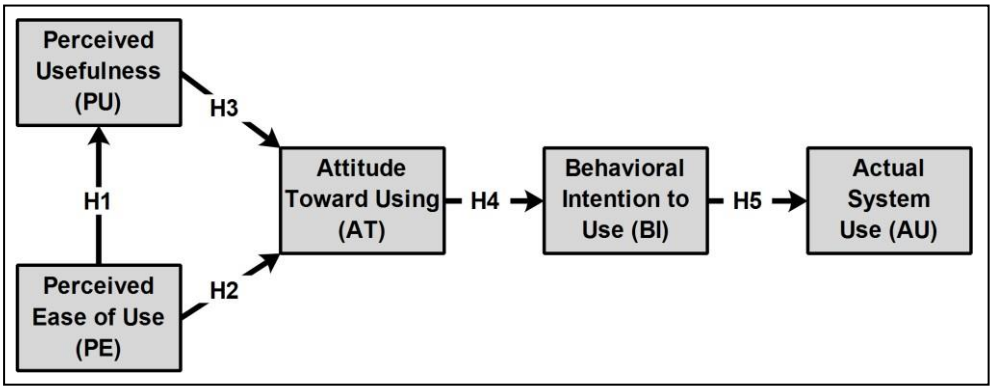

Figure 2. Hypotheses Diagram

4. Measurement

As all the variables of the technology acceptance model have been previously well researched, the current study adopted previous measures as shown in Table (1).

Table 1. Measurement of variables

Variables	Items	source
PE	4	
PU	4	Davis., 1989
AT	4	Masrom, 2007
BI	3	
AU	3	Venkatesh et al., 2003

5. Data Collection

The study relied on the electronic questionnaire as a means of collecting data and by adopting the random sample method that targeted faculty members at the University of Warith Al-Anbiya. 168 responses were obtained free of any missing data, thus they are valid for statistical analysis.

6. Data Analysis

The study adopted the structural modeling method PLS-SEM in the statistical analysis, which includes two steps: the first is concerned with verifying the extent to which the study measures meet the requirements of validity and reliability; the second is concerned with creating a path model to calculate effect coefficients. In addition, before starting this analysis, a descriptive analysis was conducted to provide a summary of the data.

A. Descriptive Analysis

In order to reach the descriptive analysis indicators, the SPSS software was used, as Table 2 shows the arithmetic mean values, which were high,

indicating the spread of the variables in the sample of the study. The results also showed a low standard deviation values, indicating the lack of dispersion in the responses.

Table. 2 Descriptive analysis results

Variable	**PE**	**PU**	**AT**	**BI**	**AU**
Mean	4.03	4.55	4.04	4.16	4.09
Standard Deviation	0.83	0.66	0.68	0.78	0.83

B. Measurement model

The evaluation of the measurement model is based on a set of indicators developed by (Hair et al., 2017), which indicated that the loadings should not be less than 0.7, while as for reliability, there is the composite reliability index, which should not be less than 0.6, and the Cronbach's alpha index, which should not be less than 0.7. In addition, the AVE validity index should not be less than 0.5. Table 3 displays the results of these indicators, all of which were in compliance with the requirements.

Table 3. Measurement model
Source: SmartPLS output

items	**loading**	**Cronbach Alpha**	**composite reliability**	**AVE**
0.705	PE1	0.745	0.829	0.548
0.748	PE2			
0.812	PE3			
0.691	PE4			
0.83	PU1	0.783	0.859	0.606
0.842	PU2			
0.758	PU3			
0.673	PU4			
0.837	AT1	0.774	0.854	0.596
0.757	AT2			
0.813	AT3			
0.67	AT4			
0.79	BI1	0.754	0.859	0.671
0.852	BI2			
0.813	BI3			
0.733	AU1	0.714	0.778	0.58
0.658	AU2			
0.806	AU3			

C. Structural Model

The evaluation of the structural model includes the process of creating a path model as shown in figure 3. In order to verify the extent to which the

paths (effects) are significant, a statistical process called bootstrapping was used through which the t value is obtained, which must not be less than 1.96, and the p value, which must not be less than 0.05.

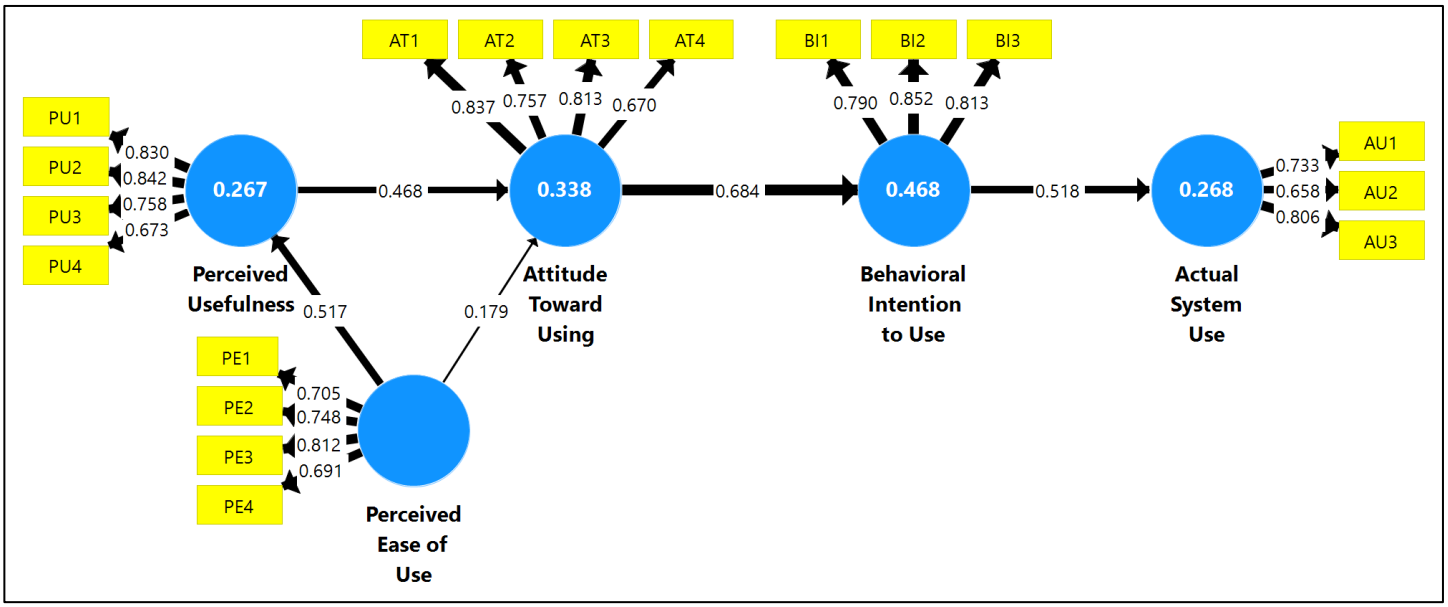

Figure 3. Path Model
Source: SmartPLS output

Table 4. Path Analysis
Source: SmartPLS output

Hypothesis	path	Path coefficient	t Value	p Value	Result	R^2
H1	PE→PU	0.517	8.364	0	Accepted	0.267
H2	PE→AT	0.179	2.467	0.014	Accepted	0.338
H3	PU→AT	0.468	6.493	0	Accepted	
H4	AT→BI	0.684	15.11	0	Accepted	0.468
H5	BI→UB	0.518	7.785	0	Accepted	0.268

Table 4 shows all path coefficients (effects) achieved the required values of both t and p, so all hypotheses were accepted. In addition, the explanatory power of the model (coefficient of determination R^2) reached 0.46 for the intention to use, meaning that the model is able to predict 46% of the factors influencing the use of ChatGPT, and this value is consistent with the original study of Davis (1989).

7. Discussion

The results of the current study offer interesting views to understand the use of ChatGPT among faculty members at Warith Al-Anbiyaa University. By using PLS-SEM to analyze the technology acceptance model (TAM), the study confirmed all the proposed hypotheses. Key findings include:

- **Perceived Ease of Use** positively influences perceived usefulness and attitudes toward using ChatGPT, making it an important factor in technology adoption.
- **Perceived Usefulness** increases faculty attitudes toward using ChatGPT, highlighting its potential to improve teaching effectiveness.
- **Attitude Towards Using** directly influences intention to use ChatGPT, emphasizing the importance of promoting positive attitudes.
- **Behavioral intention** leads to actual use of the system, highlighting the predictive power of TAM (Manis and Choi 2019).

8. Conclusion

The study highlights the TAM framework for analyzing ChatGPT popularity and value in a better schooling placing. Ease of use and perceived usefulness are important in shaping faculty intentions to apply ChatGPT. The validation of all hypotheses thru PLS-SEM analysis highlights the importance of these factors in technology use among faculty. The study makes use of the TAM framework to take a look at the acceptability and usefulness of ChatGPT in a university setting. Ease of use and perceived usefulness are vital in shaping college behavior, which sooner or later impacts their behavioral intentions and real use of the technology, all variable have been examined and confirmed using PLS-SEM analysis.

The study makes the following recommendations.

1. Improved user experience in: Improving the ChatGPT interface makes it simpler to use.
2. Provide support: Provide training for faculty members.
3. Promote success stories: Share examples of effective the use of ChatGPT.
4. Encourage feedback: Collect regular comments to keep enhancing.
5. Integrate ChatGPT with existing systems: Make sure it integrates seamlessly with different academic tools.

REFERENCES

Abbasi, M. S., Shah, F., Doudpota, S. M., Channa, N., & Kandhro, S. (2013). Theories and Models of Technology Acceptance Behaviour: A Critical Review of Literature. Sindh University Research Journal-SURJ (Science Series), 45(1).

Alfadda, H. A., and H. S. Mahdi. 2021. "Measuring Students' Use of Zoom Application in Language Course Based on the Technology Acceptance Model (TAM)." Journal of Psycholinguistic Research. doi: 10.1007/s10936-020-09752-1.

Alomary, A., & Woollard, J. (2015). How is technology accepted by users? A review of technology acceptance models and theories.

Al-Rahmi, A. M., A. K. Ramin, M. M. Alamri, and 2019. "Evaluating the Intended Use of Decision Support System (DSS) via Academic Staff: An Applying Technology Acceptance Model (TAM)." Int J Eng Adv ….

Alzoubi, H. M. (2024). Factors affecting ChatGPT use in education employing TAM: A Jordanian universities' perspective. International Journal of Data and Network Science, 8(3), 1599-1606.

Bradley, J. (2009). The technology acceptance model and other user acceptance theories. Handbook of research on contemporary theoretical models in information systems research, 277-294.

Camilleri, M. A., and L. Falzon. 2021. "Understanding Motivations to Use Online Streaming Services: Integrating the Technology Acceptance Model (TAM) and the Uses and Gratifications Theory (UGT)." Spanish Journal of Marketing-ESIC. doi: 10.1108/SJME-04-2020-0074.

Cheng, E. W. L. 2019. "Choosing between the Theory of Planned Behavior (TPB) and the Technology Acceptance Model (TAM)." Educational Technology Research and Development. doi: 10.1007/s11423-018-9598-6.

Davis, F. D. (1986). A technology acceptance model for empirically testing new end-user information systems. Cambridge, MA, 17.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS quarterly, 319-340.

Davis, F. D., & Venkatesh, V. (1996). A critical assessment of potential measurement biases in the technology acceptance model: three experiments. International journal of human-computer studies, 45(1), 19-45.

Guner, H., and C. Acarturk. 2020. "The Use and Acceptance of ICT by Senior Citizens: A Comparison of Technology Acceptance Model (TAM) for Elderly and Young Adults." Universal Access in the Information Society. doi: 10.1007/s10209-018-0642-4.

Hair, J., Hult., Ringle, C. & Sarstedt, M. (2017). A primer on partial least squares structural equation modeling (PLS-SEM. Los Angeles: Sage.

Han, J. H., and H. J. Sa. 2022. "Acceptance of and Satisfaction with Online Educational Classes through the Technology Acceptance Model (TAM): The COVID-19 Situation in Korea." Asia Pacific Education Review. doi: 10.1007/s12564-021-09716-7.

Lazim, C., N. D. B. Ismail, and M. Tazilah. 2021. "Application of Technology Acceptance Model (TAM) towards Online Learning during Covid-19 Pandemic: Accounting Students Perspective." Int. J. Bus. Econ. Law.

Majid, F. Abd, and N. Mohd Shamsudin. 2019. "Identifying Factors Affecting Acceptance of Virtual Reality in Classrooms Based on Technology Acceptance Model (TAM)." Asian Journal of University ….

Manis, K. T., and D. Choi. 2019. "The Virtual Reality Hardware Acceptance Model (VR-HAM): Extending and Individuating the Technology Acceptance Model (TAM) for Virtual Reality Hardware." Journal of Business Research.

Masrom, M. (2007). Technology acceptance model and e-learning. Technology, 21(24), 81.

Putri, G. A., A. K. Widagdo, and D. Setiawan. 2023. "Analysis of Financial Technology Acceptance of Peer to Peer Lending (P2P Lending) Using Extended Technology Acceptance Model (TAM)." Journal of Open Innovation ….

RAHMAN, SFABD, M. Yunus, and ... 2019. "A Technology Acceptance Model (TAM): Malaysian ESL Lecturers' Attitude in Adapting Flipped Learning." Jurnal Pendidikan ….

Saif, N., S. U. Khan, I. Shaheen, F. A. ALotaibi, and ... 2024. "Chat-GPT; Validating Technology Acceptance Model (TAM) in Education Sector via Ubiquitous Learning Mechanism." Computers in Human ….

Sarasati, R., and E. D. Madyatmadja. 2020. "Evaluation of E-Government LAKSA Services to Improve the Interest of Use of Applications Using Technology Acceptance Model (TAM)." IOP Conference Series: Earth and …. doi: 10.1088/1755-1315/426/1/012165.

Teo, T. (2011). Technology acceptance in education: research and issues. Rotterdam: SensePublishers.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS quarterly, 425-478.

Wicaksono, A. R., E. Maulina, M. Rizal, and ... 2023. "Technology Accepted Model (TAM): Applications in Accounting Systems." Journal of Law and ….