KARYA ILHAM PUBLISHING
CONNECTING MINDS, BRIDGING IDEAS, INSPIRING READERS

Progress in Computers and Learning

Journal homepage:
https://karyailham.com.my/index.php/picl
ISSN: 3083-8894

Examining the Factors Affecting MSU Student's Adoption of AI Tools

Amirah Husna Abdul Karim Abdul Rauf[1], Nur Liyana Mohd Zamani[1], Nurain Samsury[1], Nor Afiqah Md Noh[1]

[1] Department of Business Studies, Faculty of Business Management and Professional Studies, Management and Science University, 40100 Shah Alam, Selangor, Malaysia

ARTICLE INFO

Article history:
Received 6 January 2026
Received in revised form 27 February 2026
Accepted 28 March 2026
Available online 20 May 2026

Keywords:
Adoption intention; perceived trust; perceived usefulness and perceived ease of use

ABSTRACT

The purpose of this study is to examine the factors affecting Management & Science University (MSU) students' adoption intention of Artificial Intelligence (AI) tools for academic purposes. Specifically, this research investigates the influence of perceived trust, perceived usefulness, and perceived ease of use on students' willingness to integrate AI tools, such as ChatGPT and Grammarly, into their learning routines. This study is grounded in the Technology Acceptance Model (TAM), which is extended to include perceived trust as a crucial antecedent to adoption. A quantitative research design utilizing a cross-sectional survey approach will be employed. The target population consists of MSU students, and the sample size is set at 400 respondents, determined using Krejcie and Morgan's (1970) table. Data will be collected using a structured questionnaire distributed via Google Forms. The collected data will be analysed using IBM SPSS Statistics Software, employing descriptive analysis, reliability, correlation, and regression techniques to test the hypotheses. It is hypothesized that perceived trust (H1), perceived usefulness (H2), and perceived ease of use (H3) will each have a positive effect on students' intention to adopt AI tools. The anticipated findings will provide valuable insights for MSU policymakers and educators, offering a clearer understanding of the barriers and motivators to AI adoption. This knowledge will guide the development of effective strategies, training programs, and institutional policies to foster the ethical and successful integration of AI technologies, ultimately enhancing the student learning experience.

1. Introduction

The integration of Artificial Intelligence (AI) in education is reshaping the way students engage with academic tasks, revolutionizing the learning experience [1]. AI tools, such as writing assistants like Grammarly, research platforms, and content generators like ChatGPT, have become essential resources for students, enhancing academic efficiency and supporting various aspects of learning [2]. These tools have proven to be valuable in helping students improve writing quality, conduct research more effectively, and manage their academic workloads. However, despite the growing adoption of AI technologies, many students are still hesitant to fully embrace these tools [3-5]. One of the major concerns driving this reluctance is the level of trust students have in AI systems, particularly in terms of the accuracy and reliability of AI-generated content [4]. Additionally, concerns over data privacy and the security of personal information further contribute to students' cautious approach towards integrating AI into their academic practices.

This study focuses on understanding the factors that influence the adoption of AI tools among students at Management and Science University (MSU). Specifically, it examines how perceived trust, perceived usefulness, and perceived ease of use affect students' willingness to adopt AI tools in their academic activities [6]. Previous research has highlighted that trust in technology plays a crucial role in its acceptance, with students more likely to adopt AI tools they trust to be secure and reliable [11]. The perceived usefulness of AI tools also significantly impacts adoption, as students are more likely to incorporate tools they believe will enhance their academic performance [7,15]. Moreover, perceived ease of use is another critical factor, with students more likely to adopt AI tools that are user-friendly and easy to integrate into their academic routines [14].

1.1 Problem Statement

Despite the growing integration of Artificial Intelligence (AI) tools such as ChatGPT and Grammarly in higher education, many students remain reluctant to fully embrace these technologies in their academic work. A major barrier to adoption is trust; students are concerned about the security of their personal data and the accuracy of AI-generated content [12]. While AI tools offer various benefits, such as improved efficiency in writing and research, students often question the reliability of these tools, particularly regarding the integrity of their outputs and the potential misuse of their data. These concerns about trust undermine the willingness of students to fully incorporate AI into their academic tasks.

Furthermore, many students are unsure about the usefulness of AI tools in enhancing their academic performance. Although some students recognize the benefits of using AI for tasks such as writing assistance and research, others are skeptical about how much these tools contribute to their learning experience [11]. Some students fear that over-reliance on AI tools may negatively affect their critical thinking abilities and undermine their academic independence [15]. The lack of clarity on the value AI tools provides leads to hesitation in their widespread adoption among students.

In addition to trust and usefulness, perceived ease of use is another critical factor affecting students' adoption of AI tools. The complexity of using AI technologies can deter students from integrating them into their academic routines, particularly if these tools require significant effort to learn or operate. Research has shown that when students perceive a technology as difficult to use, they are less likely to adopt it, regardless of its potential benefits [14]. The lack of user-friendly interfaces and the perceived difficulty in mastering AI tools further contribute to students' reluctance to adopt these technologies.

Thus, the problem lies in the lack of understanding of how these three key factors; trust, usefulness, and ease of use, affect the adoption of AI tools among students. Addressing these concerns is essential for universities aiming to optimize the use of AI in education. By identifying and understanding these barriers, this study seeks to provide valuable insights into how AI adoption can be improved among students, ensuring that these technologies are used effectively and responsibly in academic settings.

1.2 Significance of Study

This study is important for students, educators, and institutions. For students, it provides a better understanding of how trust, usefulness, and ease of use influence their decision to adopt AI tools, ultimately helping them enhance their academic performance. For educators and institutions, the findings offer insights on how to effectively integrate AI tools into the learning environment, ensuring that students make full use of these technologies. For policymakers, the study highlights key factors

to consider when creating strategies and policies to promote AI adoption in education. Additionally, this research adds to the growing body of knowledge on AI adoption in education, offering a foundation for future studies.

1.3 Literature Review

Artificial Intelligence (AI) has become a significant part of the educational landscape, offering various tools to support students in their academic journeys. From writing assistants to research platforms, AI tools are transforming how students engage with their studies. However, the adoption of these tools in higher education is influenced by several factors. Understanding these factors, such as perceived trust, perceived usefulness, and perceived ease of use, is crucial to encourage wider acceptance of AI tools among students. This literature review explores the existing research on these factors and how they impact the adoption of AI tools in academic settings.

1.3.1 Independent variables; Perceived Trust

Trust is a critical factor influencing technology adoption. Smutny *et al*., [11] found that students' trust in AI tools significantly impacts their intention to use these tools in academic settings. Students are more likely to adopt AI tools if they perceive the technology as secure, reliable, and capable of providing accurate results. Concerns regarding data privacy and the reliability of AI-generated content often hinder students' trust in these tools [12]. Therefore, perceived trust is a key factor in determining whether students are willing to incorporate AI tools into their academic work.

1.3.2 Independent variables; Perceived Usefulness

Perceived usefulness refers to the degree to which students believe that using a particular technology will enhance their academic performance [14]. In the context of AI tools, students are more likely to adopt these tools if they perceive them as beneficial for their academic tasks, such as improving writing quality or assisting in research. Venkatesh *et al*., [15] highlighted that students perceived usefulness of a technology is directly related to their intention to use it. Tools that students believe will improve their academic performance are more likely to be adopted [13].

1.3.3 Independent variables; Perceived ease of use

Perceived ease of use is defined as the degree to which students believe that using AI tools will require minimal effort [14]. When students find AI tools easy to use, with intuitive interfaces and minimal learning curves, they are more likely to adopt these technologies. Venkatesh *et al*., [15] argued that perceived ease of use is a significant predictor of technology adoption, especially when students feel that using the tool will not be time-consuming or complicated.

1.3.4 Dependent variable; adoption intention

Adoption intention refers to the likelihood that students will decide to use AI tools in their academic tasks. Previous studies indicate that students' intention to use technology is significantly influenced by their perceptions of the technology's trustworthiness, usefulness, and ease of use [15]. When students trust the technology, find it useful, and believe it is easy to use, they are more likely

to incorporate these tools into their learning routines. On the other hand, lack of trust, skepticism about usefulness, or perceived complexity can lead to lower adoption intentions.

1.4 Research Framework and Hypothesis Development

Based on the literature reviewed, this study adopts a conceptual framework grounded in the Technology Acceptance Model (TAM), with an additional focus on perceived trust as an influencing factor. The framework suggests that students' intention to adopt AI tools is influenced by their perceptions of the tools' trustworthiness, usefulness, and ease of use. The following hypotheses are developed from literature:

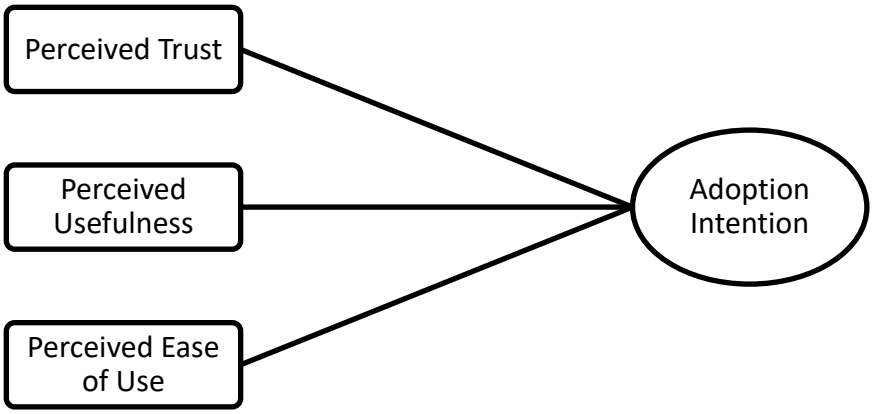

Fig. 1. Theoretical framework

Hypothesis 1 (H1): Perceived trust in AI tools has a positive effect on students' adoption intention of AI tools for academic purposes.
Hypothesis 2 (H2): Perceived usefulness of AI tools has a positive effect on students' adoption intention of AI tools for academic tasks.
Hypothesis 3 (H3): Perceived ease of use of AI tools has a positive effect on students' adoption intention of AI tools for academic purposes.

2. Methodology

This chapter outlines the research methodology used to explore the factors influencing MSU students' adoption of AI tools for academic purposes. The study follows a quantitative approach, utilizing a structured questionnaire to gather data from MSU students who have used AI tools. The chapter covers research design, sampling method, data collection process, and analysis techniques used to test the relationships between Perceived Trust, Perceived Usefulness, and Perceived Ease of Use in the context of AI adoption.

2.1 Research Design

This study will adopt a quantitative research design, which is suitable for exploring relationships between variables and testing hypotheses. A survey-based approach will be employed to gather data

from Management & Science University (MSU) students university regarding their perceptions of AI tools and their adoption intention. The design will allow for systematic data collection that provides numerical insights into how factors like perceived trust, perceived usefulness, and perceived ease of use influence students' adoption of AI tools. A cross-sectional research design will be used, meaning data will be collected at a single point in time from a sample of university students.

2.2 Population

The target population for this study consists solely of Management & Science University (MSU) students. This study aims to explore the factors influencing students' perspectives on the adoption of AI tools. The population includes students who have already adopted AI tools as well as those who have not yet used them. This inclusive approach enables the study to examine a comprehensive range of adoption intentions from students actively incorporating AI tools into their academic tasks to those who are considering or have yet to start using them. The findings will provide valuable insights into how perceived trust, perceived usefulness, and perceived ease of use shape students' views and intentions regarding AI tool adoption, regardless of their current usage status.

2.3 Sample Size

According to Krejcie and Morgan's (1970) table, the Morgan Table method is used to determine the minimum sample size required based on population size to ensure statistical validity. Given that the population size of Management & Science University (MSU) students is approximately 15,000 (including both undergraduate and postgraduate students) and aiming for a 95% confidence level with a 5% margin of error, the Morgan Table recommends a minimum sample size of 375 respondents.

For convenience and to enhance reliability, this figure can be rounded up to 400 respondents. Based on previous comparable studies and standard social science research practices, a sample size of 400 is appropriate for conducting inductive statistical analyses such as regression and correlation. This sample size will allow the results to be generalized within acceptable limits for MSU students. Additionally, it ensures the findings are consistent and accurate within the scope of an undergraduate research project focusing exclusively on MSU.

2.4 Sample Design

A non-probability sampling technique will be employed, specifically convenience sampling, which is commonly used in survey-based research. This method involves selecting participants who are easily accessible and willing to participate in the study. Since AI tool usage is widespread among university students, convenience sampling allows the researcher to quickly gather a diverse range of responses. The sample will include students from various academic disciplines, ensuring that the results reflect a broad understanding of AI adoption across different fields of study.

2.5 Data Collection

This study will collect data from university students via an online questionnaire produced with Google Forms. The form will be distributed via WhatsApp, Facebook, Instagram and personal messaging, and any other social media sites. This method allows for broad participation and ensures accessibility for students across different faculties. The online format also enables students to

complete the survey at their convenience, enhancing participation rates. The survey will be administered over a period of two weeks to ensure that students have enough time to respond. Participation will be voluntary, and respondents will be informed that their answers will remain anonymous and confidential.

2.6 Data Analysis

For the data analysis, this study utilized SPSS (Statistical Package for the Social Sciences) software, specifically version 29.0. SPSS was chosen due to its robust capabilities in handling large datasets and performing advanced statistical analyses. The software will be used to conduct various tests including:

Descriptive Statistics: To summarize the demographic data and the responses to the survey items.

Reliability Analysis: To assess the internal consistency of the measurement scales used (i.e., Perceived Trust, Perceived Usefulness, Perceived Ease of Use, and Adoption Intention).

Correlation Analysis: To examine the relationships between the independent variables (Perceived Trust, Perceived Usefulness, Perceived Ease of Use) and the dependent variable (Adoption Intention).

Regression Analysis: To test the hypotheses and analyze the strength and direction of the relationships between the variables.

SPSS provides an efficient platform for performing these statistical analyses, ensuring the validity and reliability of the results derived from the collected data.

3. Results

This chapter presents the results of the data analysis, which was conducted to examine the relationships between the independent variables—perceived trust, perceived usefulness, and perceived ease of use, and the dependent variable, adoption intention. The data were analyzed using descriptive statistics, correlation analysis, and regression analysis with SPSS version 29. Each of these statistical techniques serves a specific purpose in understanding the data and addressing the research questions.

3.1 Descriptive Statistics

Descriptive analysis was used to compute summary statistics that provide insights into the central tendency, variability, and distribution of the data for the key variables: Perceived Trust (PT), Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and Adoption Intention (AI). The mean scores for the variables were as follows: Perceived Trust (mean = 24.10, SD = 5.63), Perceived Usefulness (mean = 24.55, SD = 6.24), Perceived Ease of Use (mean = 24.67, SD = 5.72), and Adoption Intention (mean = 17.87, SD = 4.71).

To assess the normality of the data distribution, skewness and kurtosis values were calculated. The skewness values for all variables ranged from -0.930 to -0.861, indicating that the distributions were slightly skewed to the left, with most students providing higher ratings for Perceived Trust, Perceived Usefulness, and Perceived Ease of Use. The kurtosis values ranged from 0.423 to 1.025, which are within the acceptable range, suggesting that the data distributions were relatively normal with slight peaks around the mean. According to the general guideline, skewness values between -1 and 1 indicate normal distribution, and the kurtosis values between -1 and 1 further confirm that the data is suitable for subsequent statistical analysis.

These descriptive statistics provide an overview of students' perceptions of AI tools, indicating that students generally have positive attitudes toward AI tools in terms of trust, usefulness, ease of use, and adoption intention.

3.2 Correlation Analysis

The correlation analysis revealed strong and significant positive relationships between the independent variables (Perceived Trust, Perceived Usefulness, and Perceived Ease of Use) and the dependent variable (Adoption Intention).

Table 1
Correlation analysis

Variables	Perceived Trust	Perceived Usefulness	Perceived Ease of Use	Result
Adoption Intention				
Pearson Correlation	.732	.658	.685	Strong Positive
Sig. (2-tailed)	<0.001	<0.001	<0.001	Significant

Table 1 presents the results of the Pearson correlation analysis for the variables in this study. The analysis reveals that Perceived Trust had a strong positive correlation with Adoption Intention ($r = 0.732$, $p < 0.001$), suggesting that as students' trust in AI tools increases, their intention to adopt these tools also increases. Similarly, Perceived Usefulness showed a moderate positive correlation with Adoption Intention ($r = 0.658$, $p < 0.001$), indicating that students who find AI tools useful are more likely to adopt them. Perceived Ease of Use also had a positive correlation with Adoption Intention ($r = 0.685$, $p < 0.001$), which suggests that students who find AI tools easy to use are more likely to adopt them as well. These results confirm that all three factors; trust, usefulness, and ease of use, are significantly related to students' intention to adopt AI tools for academic purposes.

3.3 Regression Analysis

Table 2
Regression analysis

Hypothesis	Relationship	R-Squared	Decision
There is relationship between perceived trust and adoption intention			
	AI>>PT	0.629	Strong
There is relationship between perceived usefulness and adoption intention			
	AI>>PU	0.516	Medium
There is relationship between perceived ease of use and adoption intention			
	AI>>PEOU	0.578	Medium

The regression analysis further supported the hypotheses by examining the predictive power of the independent variables on Adoption Intention. Based on Table 2, Perceived Trust was found to be the strongest predictor, with an R^2 value of 0.629, indicating that it explains 62.9% of the variance in adoption intention. Perceived Usefulness had a moderate relationship with Adoption Intention, with an R^2 value of 0.516, meaning it explains 51.6% of the variance in adoption intention. Perceived Ease of Use also showed a moderate relationship with Adoption Intention, with an R^2 value of 0.576, explaining 57.6% of the variance in adoption intention. These findings suggest that Perceived Trust has the most significant influence on students' adoption intention, followed by Perceived Ease of Use and Perceived Usefulness, which also play important, but lesser roles.

3.4 Summary of Findings

The results of the data analysis revealed significant insights into the factors influencing the adoption of AI tools among MSU students. Descriptive analysis showed that students generally had positive perceptions of AI tools, with the highest mean scores for Perceived Usefulness and Perceived Trust, suggesting that students recognize the value and reliability of these tools. Perceived Ease of Use also had favorable ratings, indicating that students find AI tools user-friendly.

Correlation analysis confirmed significant positive relationships between the independent variables (Perceived Trust, Perceived Usefulness, Perceived Ease of Use) and the dependent variable (Adoption Intention), with Perceived Trust showing the strongest correlation to Adoption Intention ($r = 0.732$).

Finally, the regression analysis revealed that all three independent variables significantly predicted Adoption Intention, with Perceived Trust having the strongest effect, explaining 62.9% of the variance in adoption intention. Perceived Usefulness and Perceived Ease of Use also contributed significantly, explaining 51.6% and 57.6% of the variance, respectively.

These findings highlight the importance of trust, usefulness, and ease of use in driving students' intention to adopt AI tools, providing valuable insights for educators and policymakers seeking to encourage AI adoption in academic settings.

3.5 Limitation and Suggestion

While this study provides valuable insights, several limitations should be considered. First, the research is confined to MSU students, which limits the generalizability of the findings to other universities or regions. Students at different institutions may have varying levels of exposure to AI tools or differing perceptions of their usefulness, making the results specific to MSU. Additionally, the study used a cross-sectional design, capturing data at a single point in time, which does not account for changes in perceptions or adoption intentions over time. A longitudinal study would allow researchers to track how students' views and usage of AI tools evolve, particularly as they gain more experience with these technologies. Another limitation is the reliance on self-reported data, which is subject to response biases such as social desirability or inaccurate recall, potentially skewing the results. Future research could use mixed methods, combining quantitative surveys with qualitative interviews or focus groups to gain deeper insights into students' motivations and barriers to adopting AI tools.

Moreover, while this study focused on academic use of AI tools, students' adoption of AI for personal tasks might also influence their overall perceptions of these tools, suggesting that future studies could explore both academic and non-academic use. Furthermore, this study focused only on perceived trust, perceived usefulness, and perceived ease of use as the primary factors influencing AI adoption. Other variables, such as digital literacy, social influence, and institutional support, could also play significant roles in adoption intentions. Including these factors would provide a more comprehensive understanding of what drives AI adoption in higher education. Addressing these limitations in future research could offer more generalizable findings and a deeper understanding of the dynamics influencing AI tool adoption.

4. Conclusions

This study aimed to explore the factors influencing MSU students' adoption of AI tools, focusing on perceived trust, perceived usefulness, and perceived ease of use. The findings demonstrated that

all three factors significantly impact students' intention to adopt AI tools, with perceived trust emerging as the most influential predictor. Students who trust AI tools are more likely to adopt them, followed by those who find the tools useful and easy to use. The results support the Technology Acceptance Model (TAM), confirming that students' perceptions of trust, usefulness, and ease of use play key roles in their decision to incorporate AI tools into their academic work. These insights contribute to the growing body of literature on AI adoption in education, providing valuable implications for educators and institutions aiming to promote the effective integration of AI tools. By addressing students' concerns about trust, demonstrating the practical benefits of AI tools, and ensuring their usability, universities can foster a more successful adoption of these technologies. Future research should consider expanding the scope to include other variables, track changes over time, and explore the broader impact of AI tools in both academic and personal contexts.

Acknowledgement
This research was not funded by any grant.

References

[1] Singh, Ekamdeep, Prihana Vasishta, and Anju Singla. "AI-enhanced education: exploring the impact of AI literacy on generation Z's academic performance in Northern India." *Quality Assurance in Education* 33, no. 2 (2025): 185-202. https://doi.org/10.1108/QAE-02-2024-0037

[2] Vaziri, F., & Eze, S. (2023). Perceived effect of artificial intelligence tools on the academic performance of students in public universities in Anambra State. *ResearchGate*. https://www.researchgate.net/publication/379311850_Perceived_Effect_Of_Artificial_Intelligence_Tools_On_The_Academic_Performance_Of_Students_In_Public_Universities_In_Anambra_State

[3] Afolabi, S. T., & Zhiwei, W. (2023). The influence of artificial intelligence tools on student performance in e-learning environments: Case study. *European Journal of E-Learning*. https://academic-publishing.org/index.php/ejel/article/view/3639

[4] Kasuma, L., & Asongu, S. A. (2023). Integration of AI-based applications in education: How students feel about the ChatGPT era? *Management Science and Risk*. https://www.emerald.com/insight/content/doi/10.1108/msar-03-2023-0016/full/html

[5] Alavi, S. K., & Malekzadeh, F. (2023). Influence of higher education students' perceived behavior on their artificial intelligence acceptance: An empirical investigation using the technology acceptance model. *Journal of Applied Research in Higher Education*. https://www.emerald.com/insight/content/doi/10.1108/jarhe-11-2023-0535/full/html

[6] Abdullah, Z., Ismail, M., & Khalid, F. (2022). Artificial intelligence and education: A review on the application and impact among students in higher education. *Malaysian Journal of Learning and Instruction*, 19(1), 123–135. https://mjli.uum.edu.my/index.php/mjli/article/view/1046

[7] Almalki, A., & Aziz, F. (2021). Exploring the role of AI tools in enhancing academic writing among university students. *International Journal of Educational Technology in Higher Education*, 18(1), 35–47. https://educationaltechnologyjournal.springeropen.com/articles/10.1186/s41239-021-00280-7

[8] Burke, Mary A., and Ali Ozdagli. "Household inflation expectations and consumer spending: evidence from panel data." *Review of Economics and Statistics* 105, no. 4 (2023): 948-961. https://doi.org/10.1162/rest_a_01118

[9] Dräger, L., & Nghiem, H. (2021). Inflation expectations and consumption behavior. *Applied Economics*, 53(14), 1607–1621. https://doi.org/10.1080/00036846.2020.1808155

[10] Kumar, R., & Sharma, V. (2023). The ethical implications of AI use in academic environments: A Malaysian perspective. *Journal of Academic Ethics*, 21(2), 145–162. https://link.springer.com/article/10.1007/s10805-023-09464-6

[11] Smutny, Pavel, and Petra Schreiberova. "Chatbots for learning: A review of educational chatbots for the Facebook Messenger." *Computers & education* 151 (2020): 103862. https://doi.org/10.1016/j.compedu.2020.103862

[12] Featherman, Mauricio S., and Paul A. Pavlou. "Predicting e-services adoption: a perceived risk facets perspective." *International journal of human-computer studies* 59, no. 4 (2003): 451-474. https://doi.org/10.1016/S1071-5819(03)00111-3

[13] Zawacki-Richter et al. International Journal of Educational Technology in Higher Education (2019) 16:39 https://doi.org/10.1186/s41239-019-0171-0

[14] Davis, Fred D. "Perceived usefulness, perceived ease of use, and user acceptance of information technology." *MIS quarterly* 13, no. 3 (1989): 319-340. https://doi.org/10.2307/249008

[15] Venkatesh, Viswanath, and Fred D. Davis. "A theoretical extension of the technology acceptance model: Four longitudinal field studies." *Management science* 46, no. 2 (2000): 186-204.https://doi.org/10.1287/mnsc.46.2.186.11926