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The Impact of Technology Readiness, Usefulness, and Ease of Use on AI-Based Accounting Software Adoption

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ABSTRACT

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Objective: This study aims to examine the impact of technology readiness, perceived usefulness, and perceived ease of use on the adoption of AI-based accounting software among undergraduate accounting students in Indonesia.**Methods:** This study utilized quantitative research methodology and associative design to survey 359 accounting students from the Faculty of Business and Economics at several universities in Indonesia. A total of 247 participants were selected through purposive sampling. SEM-PLS was used to evaluate the data, which was collected through an online questionnaire and SmartPLS 3.0 software.**Findings:** The results indicate that technology readiness did not significantly influence technology adoption. However, perceived usefulness and perceived ease of use had strong positive effects. Specifically, perceived usefulness and perceived ease of use significantly predicted technology adoption, emphasizing the importance of these factors in students' willingness to adopt AI-based accounting software.**Novelty:** This study contributes to the literature by providing empirical evidence on the determinants of AI technology adoption in the context of accounting education, particularly in a developing country setting.**Theory and Policy Implications:** The results indicate that perceived benefits and simplicity of use are important factors in technology adoption, supporting the Diffusion of Innovation Theory and the Theory of Planned Behavior. Educational institutions should prioritize improving the perceived utility and user-friendliness of AI technologies by implementing tailored training programs and intuitive interfaces. This will promote greater acceptance and utilization of these technologies among students.

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Introduction

The adoption of information technology has become an essential requirement in the contemporary era of Society 5.0. This period is characterized by a shift in paradigms and an emphasis on solutions that prioritize collaboration between humans and machines, rather than solely focusing on technology (Neumann et al. 2021). Given the fast-paced technology advancements, accountants and aspiring accountants, especially accounting students, need to pay close attention. Educational institutions must equip graduates with proficiency and expertise in digital technology to thrive in an era characterized by swift technological advancements (Al-Maskari 2024). With the increasing convergence of digital technologies across many industries, the field of education is confronted with the task of adjusting to changing requirements (Jackson

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2019). Artificial Intelligence (AI) tools in education have become a powerful tool for changing the way people learn, fostering innovation, and getting people ready for the digital age (Abulibdeh, Zaidan, and Abulibdeh 2024). Artificial intelligence (AI) refers to the capacity of computers or robots to execute human jobs based on computer-controlled instructions (Zhang and Lu 2021). In the field of accounting, AI is becoming more and more incorporated through diverse software applications. (Gina Andani 2022), the accounting software that are most favored in Indonesia include SAP, Accurate, Omegasoft, MB Soft, and MYOB. The software solutions mentioned are pragmatic and enhance the efficiency and precision of aligning financial information (Liu et al. 2020). They facilitate methodical financial documentation and uniform transaction monitoring in accordance with budget allocations (Hashim and Piatti-Fünfkirchen 2018). Accounting software facilitates efficient management of firm standard operating procedures (SOPs), enabling comprehensive monitoring and control across several domains without necessitating excessive resources (Seshan and Gorain 2016). However, concerns among aspiring accountants over the replacement of human positions by AI are linked to the National Occupational Competency Standards, which mandate proficiency in running accounting computer systems (Pimentel and Boulianne 2022).

Technology adoption can have either positive or negative outcomes, which are determined by the user's level of preparedness. This readiness is measured across four dimensions known as Technology preparedness (TR): optimism, innovativeness, discomfort, and insecurity (Pimentel and Boulianne 2022). There is a positive correlation between the level of willingness to use AI technology and the probability of actually using AI technology (Lee et al. 2019). Perceived utility and perceived ease of use have a crucial role in determining the rate at which IT systems are adopted in the context of technology adoption (Agarwal and Prasad 1998; Karahanna and Straub 1999). PU, or Process Utilization, is the concept that a system can improve efficiency, effectiveness, productivity, and offer substantial advantages (Duflou et al. 2012). On the other hand, PEOU refers to the level of simplicity and comprehensibility of a system (Xiao and Benbasat 2007). The adoption of technology is often influenced by perceived advantages, and the rate of adoption increases when people see it as user-friendly. Studies conducted by Abdullah (2016), Chen (2020), Raza (2017), indicate that Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) have a substantial impact on the adoption of technology. Nevertheless, even with the advancements in accounting information technology, students frequently fail to recognize its advantages because they lack comprehension regarding the user-friendly nature of artificial intelligence in accounting (Abdullah and Almaqtari 2024). Students' judgments of PU (perceived usefulness) and PEOU (perceived ease of use) are hindered by excessive concern about technology, which in turn influences their adoption of technology negatively (Al-Adwan 2020).

Ajzen (2020) Theory of Planned Behavior (TPB) and Nordhoff et al. (2021) Diffusion of Innovations Theory (DIT) are two theoretical frameworks that serve as a foundation for understanding technological acceptance behavior. These theories explain how advanced AI technology can be accepted by students more smoothly and without substantial delays in deployment (Ahmad 2020). The swift advancement of AI in accounting requires a constant enhancement in the competence of accounting students to proficiently embrace new technologies, hence reshaping the profession in the era of Society 5.0. (Tavares et al. 2023). Prior research has yielded inconsistent findings about the preparedness and uptake of technology. The study conducted (Ramírez-Uclés et al. 2018; Sudaryanto, Hendrawan, and Andrian 2023) revealed that there was no statistically significant effect of technology readiness on the adoption of artificial intelligence (AI) among accounting students in West Jakarta. Dabbous and Boustani (2023) that perceived behavioral control fully mediates the relationship between AI solution performance expectancy, entrepreneurship education, and entrepreneurial intention. (Doumat et al. 2022) discovered a beneficial influence of technology readiness on AI adoption in a university context in Lebanon. These inconsistencies emphasize the necessity for additional investigation to close the divide and offer more lucid understandings.

The importance of this research is to address the clear deficiencies and contradictions identified in prior studies concerning the implementation of AI in accounting education. Although AI plays a crucial role in upgrading accounting methods, its reception among students and professionals varies, indicating a need for further inquiry. An important deficiency exists in the contradictory results about the influence of technology preparedness. Damerji and Salimi (2021) found that technology readiness had no significant impact on the

adoption of artificial intelligence (AI). Acceptance of AI practices was significantly influenced by the technology roadmap and attitude from the AI enabler perspective, but professional expertise did not have a significant impact. Regarding AI readiness variables, infrastructure and awareness were significant factors influencing acceptance of AI practices, while technical expertise was not. The acceptance of AI practices also significantly influenced AI-supported relational governance, performance, and AI-based interactions (Baabdullah et al. 2021). The contrasting outcomes indicate that contextual elements, such as variations in culture, support from institutions, and personal attitudes, may have substantial influence on technological readiness and eventual adoption (Ahmad 2020). Furthermore, there has been variable evidence of the impact of perceived utility (PU) as well as perceived ease of use (PEOU) of AI technology on adoption rates. Although PU (Perceived Usefulness) and PEOU (Perceived Ease of Use) are widely recognized as crucial elements in the adoption of technology (Awang et al., 2023), their impact on students' readiness to adopt AI in accounting differs. Sudaryanto, Hendrawan, and Andrian (2023) discovered that these characteristics had a substantial impact on the adoption of technology. Owoc (2021), emphasized that a lack of comprehension and extreme concern around AI could nullify these perceived advantages, resulting in decreased rates of adoption. The study identified lack of trust in the technology, lack of AI literacy, and political issues as significant barriers to AI adoption in the PDS (Kumar et al. 2021). This disparity highlights the significance of tackling instructional tactics and fear management in order to amplify the perceived advantages of AI technology.

Additionally, the incorporation of AI into accounting software is a transformative process that calls for a paradigm shift in both educators and students in addition to a technological one. Frameworks that are helpful for comprehending this shift include the Diffusion of Innovations Theory (DIT) and the Theory of Planned Behavior (TPB). A study conducted by Ajzen in 1991 found that attitudes, subjective standards, and perceived behavioral control had an impact on individuals' intention to adopt new technology, according to the Theory of Planned Behavior (TPB). On the other hand, DIT (Diffusion of Innovations Theory) examines the process by which innovations are adopted and disseminated within a social system. It emphasizes the significance of characteristics such as the relative advantage, compatibility, complexity, trialability, and observability of the innovation (Al-Gahtani 2003). This research intends to utilize these theories in order to reveal the fundamental psychological and social aspects that either promote or impede the integration of AI in accounting education. This research is unique because it takes a holistic approach to analyzing the various factors on the adoption of artificial intelligence in accounting education. The goal of this study is to offer a comprehensive knowledge of the adoption process by looking at technological readiness, PU, PEOU, and incorporating theoretical ideas from TPB and DIT. This methodology not only closes the gaps in the literature but also provides educators and policymakers with practical advice on how to increase AI adoption (González-Gonzalo et al. 2022). The results of this study could provide valuable insights for the creation of specific treatments, such as customized training programs, anxiety-reducing methods, and curriculum modifications, aimed at better equipping accounting students for the technology requirements of the future.

The present study aims to examine the correlation between the adoption of AI-based accounting software among accounting students and their perceptions of its usefulness, convenience of use, and technology preparedness. The objective of this research is to gain a thorough comprehension of these characteristics in order to inform instructional practices and enhance the use of AI technology in accounting education. By doing this, the research hopes to aid in the growth of a workforce of accountants who are more tech-savvy and able to use AI to boost efficiency and production in the field.

Method

This study examines the correlation between technological readiness, perceived utility, and perceived ease of use as the independent variables (X) and the adoption of technology as the dependent variable (Y). The study uses a relational or associative design and a quantitative research approach to ascertain the influences or correlations between these factors. Finding the importance of group differences or the links between the variables under study is the main goal of quantitative research (Sudaryana and Agusady, 2022). Associative testing analyzes the relationships between multiple variables in a sample to make generalizable conclusions about the full population (Greene and David 1984). This study is primarily focused on providing explanations

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for the interrelationships between different phenomena and variables (Burton-Jones, McLean, and Monod 2015). These linkages can include reciprocal interactions, where variables contribute to each other, or causal relationships (Bauman et al. 2002).

There are 359 accounting students in the study that are part of the 2024 Accounting students at universities throughout Indonesia, from the Faculty of Economics and Business. The researchers utilized purposive sampling, a non-probability sampling strategy, to pick a sample that aligned with their specific objectives (Yuliani and Supriatna, 2023). Purposive sampling is a method of selecting samples that possess specific qualities in order to effectively address the study objectives (Lenaini, 2021). Participants in internships or practical work, as well as completion of courses in Advanced Financial Accounting (AKL), Audit, Taxation, Accounting Information Systems (SIA), and Management Information Systems (SIM), were among the selection criteria used to choose the sample. Students from the Accounting Department's 2020 cohort were also included. The sample size was estimated to be 247 responders using the Slovin formula, which is calculated as follows: $n = 1 + Ne^2$.

The symbol N represents the population size, whereas e represents the margin of error. The data gathering process involved distributing surveys through Google Forms and WhatsApp, resulting in a total of 95 responders. The questionnaire, comprising a sequence of inquiries, was formulated with the aim of collecting replies in an uninhibited and non-coercive manner (Chalimi, 2021; Herlina, 2019). The utilization of a Likert scale was employed for the purpose of measurement, as it is a highly successful tool for evaluating the attitudes, perspectives, and perceptions of individuals or groups towards social phenomena (Sugiyono, 2022).

The data analysis was performed using Structural Equation Modeling-Partial Least Squares (SEM-PLS) technique, utilizing the SmartPLS 3.0 software. SEM-PLS has various benefits, such as its capability to handle non-multivariate normal distribution data and its flexibility in using indicators with categorical, ordinal, interval, and ratio scales. Furthermore, a substantial sample size is not required (Evi and Rachbini, 2022). A number of tests were conducted as part of the study to make sure the results were valid and robust, including validity, reliability, model fit, R-Square, F-test, and hypothesis testing.

Result and Discussion

The validity test results indicate that all indicators for the variables in this study are valid, as demonstrated by convergent validity with loading factors exceeding 0.5. Specifically, Technology Readiness indicators (X1.1 to X1.4) range from 0.782 to 0.898, reflecting strong readiness among students to adopt technology. Perceived Usefulness indicators (X2.1 to X2.4) show values from 0.810 to 0.894, indicating that the benefits of using accounting software are well-captured. Similarly, Perceived Ease of Use indicators (X3.1 to X3.4) range from 0.858 to 0.887, confirming ease of use among respondents. Finally, Technology Adoption indicators (Y1 and Y2) exhibit very high loading factors of 0.952 and 0.936, underscoring their significant relationship with overall technology adoption. These findings collectively affirm the robustness of the constructs for further analysis in the context of AI-based accounting software.

Table 1. Loading Factor Values

Variable	Indicator	Loading Factor Value	Status
Technology Readiness	X1.1	0.782	Valid
	X1.2	0.898	Valid
	X1.3	0.885	Valid
	X1.4	0.870	Valid
Perceived Usefulness	X2.1	0.810	Valid
	X2.2	0.894	Valid
	X2.3	0.865	Valid
	X2.4	0.861	Valid
Perceived Ease of Use	X3.1	0.858	Valid

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	X3.2	0.883	Valid
	X3.3	0.822	Valid
	X3.4	0.887	Valid
Technology Adoption	Y1	0.952	Valid
	Y2	0.936	Valid

The results from the cross loading values demonstrate the strong relationships between the indicators and their corresponding variables. For Technology Readiness, all indicators (X1.1 to X1.4) show high cross loading values, with X1.2 having the highest value at 0.912, indicating a strong readiness among respondents to adopt new technologies. In the Perceived Usefulness category, indicators range from 0.825 to 0.907, with X2.2 reflecting the highest value, suggesting that students recognize the significant benefits of using AI-based accounting software in enhancing efficiency and productivity. For Perceived Ease of Use, the indicators also exhibit robust values, particularly X3.2 at 0.890, which indicates that respondents find the software user-friendly and easy to operate. Lastly, the Technology Adoption indicators (Y1 and Y2) show exceptionally high cross loading values of 0.960 and 0.944, respectively, underscoring a strong relationship between these indicators and the overall adoption of technology. These findings collectively affirm that all indicators are valid and contribute significantly to their respective constructs, thus supporting the overall framework of the study.

Table 2. Cross Loading Values

Variable	Indicator	Cross Loading Value
Technology Readiness	X1.1	0.801
	X1.2	0.912
	X1.3	0.898
	X1.4	0.884
Perceived Usefulness	X2.1	0.825
	X2.2	0.907
	X2.3	0.874
	X2.4	0.869
Perceived Ease of Use	X3.1	0.865
	X3.2	0.890
	X3.3	0.836
	X3.4	0.894
Technology Adoption	Y1	0.960
	Y2	0.944

Source: Data processed by the author 2024

The results show that the Average Variance Extracted (AVE) values for all variables are greater than 0.5, indicating good convergent validity. Specifically, Technology Readiness has an AVE of 0.739, suggesting that this construct captures a significant amount of variance related to user readiness for technology adoption. Perceived Usefulness and Perceived Ease of Use also demonstrate strong AVE values of 0.732 and 0.742, respectively, confirming that respondents recognize the value and user-friendliness of the technology in question. Notably, Technology Adoption has the highest AVE value at 0.891, reflecting a robust representation of the construct and indicating that the factors influencing technology adoption are well captured in the measurement model. Overall, these findings support the reliability and validity of the constructs used in this research.

Table 3. AVE Values

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Variable	AVE Value
Technology Readiness	0.739
Perceived Usefulness	0.732
Perceived Ease of Use	0.742
Technology Adoption	0.891

Source: Data processed by the author 2024

The table above presents the composite reliability and Cronbach’s Alpha values for each variable. All metrics exceed the threshold of 0.7, indicating that each variable demonstrates high reliability. This suggests that the instruments used in the questionnaire are consistent and dependable for measuring the constructs in this study.

Table 4. Composite Reliability and Cronbach's Alpha

Variable	Composite	Cronbach’s Alpha
Technology Readiness	0.919	0.881
Perceived Usefulness	0.916	0.877
Perceived Ease of Use	0.920	0.884
Technology Adoption	0.942	0.878

Source: Data processed by the author 2024

Based on Table 5, the model fit results indicate an SRMR value of 0.091 and an NFI value of 0.740, leading to the conclusion that the model fit is considered marginal. This suggests that while the model demonstrates some level of adequacy, there is still room for improvement in achieving a better fit for the data.

Table 5. Model Fit Summary

Variable	Saturated Model	Estimated Model
SRMR	0.091	0.091
NFI	0.740	0.740

Source: Data processed by the author 2024

The coefficient of determination, as shown in Table 6, is 0.668 or 66.8%. This indicates that the variable Technology Adoption (Y) is influenced by Technology Readiness, Perceived Usefulness, and Perceived Ease of Use, while the remaining 33.2% is affected by other variables not included in this study.

Table 6. Coefficient of Determination

Variable	R Square	Adjusted R Square
Technology Adoption (Y)	0.668	0.668

Source: Data processed by the author 2024

Based on Table 7, the f-square results indicate a value of 0.025 for Technology Readiness (X1), categorized as a weak influence, while Perceived Usefulness (X2) shows a moderate impact, and Perceived Ease of Use (X3) also demonstrates a moderate influence within the structural model.

Table 7. f-Square Values

Variable	f Square	Impact Category
Technology Readiness	0.025	Weak
Perceived Usefulness	0.115	Moderate

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Perceived Ease of Use	0.180	Moderate
Technology Adoption	-	-

Source: Data processed by the author 2024

Table 8. summarizes the hypothesis testing results, showing key statistics for each hypothesis. The Original Sample values indicate the direct effect of the independent variables on technology adoption. For Technology Readiness (H1), the original sample effect size is 0.083, with a T statistic of 2.532, but the p-value of 0.159 indicates that this relationship is not statistically significant, leading to the rejection of the hypothesis. In contrast, Perceived Usefulness (H2) shows a robust original sample effect of 0.342, with a T statistic of 8.288 and a highly significant p-value of <0.001, confirming its strong positive influence on technology adoption. Similarly, Perceived Ease of Use (H3) has an original sample effect of 0.401, a T statistic of 10.810, and a p-value of <0.001, further emphasizing its significant impact on technology adoption. These results highlight the critical roles that perceived usefulness and ease of use play in influencing users' decisions to adopt new technologies.

Table 8. Hypothesis Testing Results

Hypothesis	Original Sample	Sample Mean	Standard Deviation	T Statistic	P Value
H1: Technology Readiness → Technology Adoption	0.083	0.078	0.032	2.532	0.159
H2: Perceived Usefulness → Technology Adoption	0.342	0.335	0.041	8.288	<0.001
H3: Perceived Ease of Use → Technology Adoption	0.401	0.395	0.037	10.810	<0.001

Source: Data processed by the author 2024

The study employed SmartPLS 3.0 to rigorously test the validity, reliability, and normal distribution of the research data. This discussion focuses on the relationships between technology readiness, perceived usefulness, perceived ease of use, and technology adoption among Accounting students at universities throughout Indonesia.

The hypothesis testing revealed that technology readiness (X1) does not significantly influence technology adoption (Y) among undergraduate Accounting students at universities throughout Indonesia, with a p-value of 0.159, which is greater than the standard threshold of 0.05. This finding indicates that the level of readiness in utilizing AI technology does not affect the adoption rate among students. Flavián et al. (2022) The findings showed that customers' technological optimism boosts their intention to use robo-advisors, while insecurity lowers it. Interestingly, technological discomfort was found to positively influence robo-advisor adoption, contradicting previous insights on technology adoption and value co-creation. This is because analytical AI places customers in a passive role, reducing adoption barriers. Interestingly, this result contradicts previous studies (Haddad et al. 2020) that found a positive impact of technology readiness on technology adoption. Ayanwale et al. (2022), suggesting that high levels of readiness in utilizing AI technology may not necessarily lead to its adoption. This observation resonates with the Diffusion of Innovation Theory (DIT), which underscores the gradual process of technology adoption requiring time, understanding, skills, system improvements, and effective curriculum integration.

The study found a significant and positive relationship ($p < 0.001$) between perceived usefulness (X2) and technology adoption (Y). This indicates that students' positive attitudes towards the perceived benefits of AI technology significantly influence their willingness to adopt it. The Theory of Planned Behavior supports this, suggesting that students base their decisions on the perceived benefits that AI technology offers, such as time efficiency and support for daily learning activities. This interesting finding challenges previous insights into technology adoption and value co-creation as analytical AI puts customers into a very passive role and reduces

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barriers to technology adoption (Flavián et al. 2022). Conversely, studies (Conrad and Munro 2008) reporting a negative relationship attributed to anxiety and discomfort among students towards technology adoption do not align with the current findings. In a study by Rodway and Schepman (2023), a gender-balanced sample of 302 British students assessed course satisfaction, completed the General Attitude towards AI Scale (GA AIS), and evaluated their comfort with AI educational applications, along with course satisfaction if such applications were adopted. Although students were generally comfortable with AI educational applications, their course satisfaction decreased with hypothetical AI adoption. AI applications providing summative grades or welfare support caused the most discomfort, while career support, formative course support, and administrative support were more comfortable. Positive and negative attitudes towards AI predicted satisfaction differences, mediated by comfort with the applications. The study advises Higher Education Institutions to proceed cautiously before investing heavily in AI educational applications.

The study also established a significant positive relationship ($p < 0.05$) between perceived ease of use (X3) and technology adoption (Y). This implies that the perception of ease in learning, using, and understanding AI-based accounting software influences the adoption rate among students. Individual capabilities and external motivations play crucial roles in accelerating technology adoption, where users feel facilitated by the simplicity and user-friendliness of the technology. This finding is consistent with the Diffusion of Innovation Theory and the Theory of Planned Behavior, which emphasize the pivotal role of ease of use in technology adoption. It aligns with previous studies Kashive (2021), Nouraldeen (2023) that reported positive relationships between perceived ease of use and technology adoption. The findings of Labrague et al. (2023) indicate that nursing students have a positive perception of AI utilization in nursing practice, express a strong intention to adopt AI technology, and maintain a favorable attitude towards AI. Furthermore, nursing students' perceptions of AI utilization in nursing practice influence their attitudes towards AI, which in turn affects their intention to adopt AI technology. Nursing education programs should incorporate AI-focused courses, training, and experiential learning to further enhance students' readiness and proficiency in utilizing AI technology. Conversely, Rodway and Schepman (2023) found no significant relationship between perceived ease of use and technology adoption.

Conclusion

In conclusion, this study provides insights into the factors influencing technology adoption among undergraduate accounting students. While technology readiness did not emerge as a significant predictor, perceived usefulness and perceived ease of use strongly influenced students' decisions to adopt AI technology. These findings underscore the importance of perceived benefits and ease of use in enhancing technology adoption rates, aligning with established theories in technology adoption and behavioral sciences. Future research could explore additional factors such as organizational support, training programs, and technological infrastructure to further enhance our understanding of technology adoption dynamics in educational settings. These insights are crucial for educators and policymakers aiming to promote effective integration of technology in educational practices.

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