SUSTAINABLE STRATEGIC MANAGEMENT AND INNOVATION IN ACCOUNTING EDUCATION: APPLYING THE TECHNOLOGY ACCEPTANCE MODEL

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Abstract

Despite extensive research on the technology acceptance model (TAM), limited attention has been given to how students' perceptions of technology translate into innovative educational outcomes that support sustainable strategic management (SSM). The research aims to examine the effect of perceived ease of use (PEOU) and perceived usefulness (PU) on innovation in accounting education and to further investigate the mediating role of innovation in accounting education in the relation between PEOU, PU, and SSM among accounting students across Bachelor's, Master's, and PhD programs at Tikrit University in Iraq. This research adopts a quantitative research methodology, collecting data in 2025 from a purposive sample of 96 accounting students through a structured survey instrument. The results indicate that PEOU has a positive and statistically significant effect on innovation in accounting education. The analysis revealed that PU has a statistically insignificant effect on innovation in accounting education. The mediation analysis revealed that the relationship between PEOU and SSM is significantly moderated by innovation in accounting education. This study makes an original contribution by empirically integrating the TAM with SSM through the mediating mechanism of innovation in accounting education, an underexplored linkage in prior studies. Practically, the findings suggest that universities should prioritize user-friendly digital tools and innovation-driven pedagogies, such as simulations and sustainability-based accounting projects, to enhance students' engagement and strategic sustainability awareness. By demonstrating how accessible digital technologies foster both educational innovation and sustainability competencies, this research contributes to advancing scholarship at the intersection of technology adoption, accounting education, and sustainable strategy while offering actionable insights for curriculum development.

Keywords: Sustainability, Strategic Management, Innovation, Accounting Management

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1. INTRODUCTION

Sustainability has been considered as a building block for influencing accountability and strategic management with reference to managerial accounting (Alabdullah et al., 2025). In recent times, sustainable strategic management (SSM) has been identified as a vital issue for both theoretical and practical considerations by scholars and practitioners alike, owing to the pressing need to incorporate sustainability into business strategies and decision-making mechanisms and education (Adiatma, 2025). Moreover, during the strategy formulation stage of SSM, environmental and social considerations are given prime importance, while simultaneously satisfying the interests of various stakeholders and environmental sustainability with reference to financial performance. During the strategy implementation stage of SSM, resources are efficiently managed by utilizing innovative accounting technologies by businesses (Egbunike et al., 2014). For instance, environmental management systems (EMS) or corporate social responsibility (CSR) reporting tools help businesses in integrating sustainability strategies during strategic planning. Strategic management accounting has been identified as a forward-thinking approach to help businesses achieve long-term objectives through the collection and analysis of competitive data on costs, markets, and organizational strategies (Chotia et al., 2025).

However, its capability to address sustainability issues is seen as underdeveloped. Since its inception over two decades ago by pioneers such as Kenneth Simmonds and Michael Bromwich (Oboh & Ajibolade, 2017). However, the field of strategic management accounting has been in a state of continuous change to accommodate the needs of strategic management decisions while being restricted by the traditional profit-driven corporate model. The traditional model considers social, ecological, and political factors as externalities rather than as essential components of the strategic management process (Alawattage & Wickramasinghe, 2026). The recent industry analyses, as presented in the McKinsey report on the Technology Trends Outlook (Yee et al., 2024), highlight the potential of digital innovations in changing the way the model of operation is designed in the industry. There is a growing demand for strategic management to be in alignment with global sustainability imperatives in conjunction with the changes in technology (Barbosa et al., 2020). In this regard, it is necessary to adopt tools like corporate governance, environmental management, and CSR as essential components of the strategic management process rather than peripherals. Despite the growing awareness of the importance of management accounting in the strategic management process, the education in management accounting is restricted to a narrow techno-economic model (Bérubé & Gendron, 2022; Boyce et al., 2019). This unyielding focus is limiting the ability of accounting graduates to think critically about social justice and sustainable issues. On the flip side, there is an urgent need to build a sustainable mindset, which includes social, ecological, and ethical factors in strategic decision-making. Alawattage and Wickramasinghe (2026) argue that in order to build sustainable futures, strategy needs to be redefined, moving beyond the hierarchical, profit-maximizing model and toward a "rhizomatic" perspective, which unites the political, the social, the ecological, and the economic. Sustainable innovation is at the center of this transformation. It is defined as "innovation that improves sustainability performance, where such performance includes ecological, economic, and social criteria" (Lopez-Valeiras et al., 2015, p. 3479). Research has proven that sustainable innovations improve organizational performance (Kobayashi et al., 2011), and they offer access to international markets (Wagner, 2008). In fact, Bebbington and Thomson (2013) argue that the integration of sustainable development into management accounting practice and theory is still in its evolutionary stages and that its full potential will be realized by employing boundary-crossing approaches to integrate diverse views.

The primary objective of this research was to investigate the impact of perceived ease of use (PEOU) and perceived usefulness (PU) on innovation in accounting education, and further to investigate the mediating effect of innovation in accounting education between PEOU, PU, and SSM among accounting students.

This research has addressed the crucial research gap with regard to equipping the next generation of accounting professionals with techno-managerial skills and the ability to incorporate sustainability into the process of strategic decision-making. Accordingly, the major research question guiding this study is:

RQ: How do perceived ease of use and perceived usefulness influence sustainable strategic management competencies among accounting students through the mediating role of innovation in accounting education?

The structure of the remainder of this paper is as follows. Section 2 reviews the relevant previous studies as literature and the technology acceptance model (TAM), and presents the study framework. Section 3 explains the methodology. Section 4 provides the empirical results, and Section 5 discusses the findings and their theoretical and practical implications. Section 6 concludes the paper with the limitations and suggestions for future research.

2. LITERATURE REVIEW

2.1. Theoretical background

In parallel with the changes and transformations occurring in economic conditions, businesses are turning to innovative management accounting solutions to better manage their costs and revenues and maintain their competitive advantage (Vărzaru et al., 2022). Furthermore, Ntalamia (2017), Lucas et al. (2013), and Jalaludin et al. (2011) state that businesses should integrate innovative management accounting into their strategies to positively contribute to their perception in society. Indeed, according to Nair and Nian (2017), innovative management accounting is a process that aims to create value and ensure long-term success by supporting the decision-making process. Prior research on this issue has shown that innovation in accounting can assist in the development and improvement of SSM design. Nartey and van der Poll (2021) found that

integrating innovative management accounting into strategies impacts recycling, supply chain management, environmental and social policies, and ensures sustainability by increasing operational efficiency. Lopez-Valeiras et al. (2015) state that innovative management accounting technologies bring new strategies to positively influence organizational performance and offer a sustainable vector to navigate the uncertainties brought about by the economic crisis.

Strategic management literature suggests that businesses can achieve long-term competitive advantage by developing sustainability-focused strategies (Porter & Kramer, 2011). Within the framework of the resource-based view (RBV), SSM supports value creation by positioning environmental and social responsibilities as strategic resources. For example, EMS and CSR practices provide a competitive advantage by strengthening businesses' capabilities (Barney, 1991). Furthermore, dynamic capabilities theory suggests that SSM enables businesses to quickly adapt to changing environmental and social expectations (Teece et al., 1997). The digital transformation in strategic management also requires businesses to develop sustainability-focused decision-making processes using technologies such as data analytics and artificial intelligence (AI) (Yee et al., 2024). Within this framework, SSM allows businesses to track their environmental and social performance with the support of technology and make it consistent with their business strategies. Alawattage and Wickramasinghe (2026) suggest that the incorporation of social justice and ecological concerns in strategic management accounting education provides students with the necessary tools to critically interact with techno-managerial processes and develop a sustainability-oriented mindset. By efficiently utilizing strategic management accounting methodologies, managers can have access to information regarding their business's social and environmental performance, thus enhancing business sustainability performance (Egbunike et al., 2014). Onwuzulike et al. (2024) found that incorporating innovation and sustainability in management accounting education through advanced technology, continuous professional development, and proactive stakeholder engagement enhances competitiveness, robustness, and consistency with sustainable development goals. Therefore, in order to improve environmental results and meet long-term sustainable performance goals, it is crucial to combine green technological innovation with sustainable management practices (Tran et al., 2025).

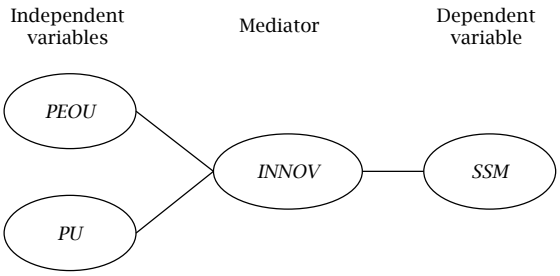
2.2. Technology acceptance model

The TAM was chosen for this study over other theoretical models, such as unified theory of acceptance and use of technology (UTAUT) or UTAUT2, because it is recognized for offering basic information about technology adoption and is known to be applicable in educational settings. TAM, which was first created by Davis (1985), has a solid theoretical foundation that is based on two factors that are intrinsic to the process of adopting technology: "perceived usefulness" and "perceived ease of use" of the technology in a variety of contexts, including educational ones. Due to the ease of use and understanding of TAM, it is possible to use it to study the issue of user acceptance in the context of innovation in accounting education. Apart from the Education field, TAM has been used in a variety of different situations, as described in the literature by Venkatesh and Davis (2000), Venkatesh et al. (2012), Liu and Ma (2024), and many more. This literature demonstrates how it is possible to utilize the model to measure the key elements of innovation in the context of the use of technology. Unlike the majority of the literature that utilized a variety of different models based on the TAM model and extended it to assess the acceptability and adoption of innovative technology in education (Almaiah et al., 2022; Sayaf et al., 2021), the current study is based on a different approach. The model of TAM is utilized in conjunction with the social support theory to assess and manage the factors that may have an impact on the acceptability and adoption of innovation in education for accounting students.

2.3. Study framework

The study framework provides the basic structure for the dependent variable, sustainable strategic management (*SSM*), the mediating variable, innovation (*INNOV*) in accounting education, and the independent variables, namely, perceived ease of use (*PEOU*) and perceived usefulness (*PU*), as presented in Figure 1.

Figure 1. Schematic representation of the adopted study framework



Source: Authors' elaboration.

3. RESEARCH METHODOLOGY

Quantitative method approach was used in the study. The research was conducted in 2025 by using a structured questionnaire that was administered on a purposive sample of 96 accounting students studying Bachelor's, Master's, and PhD levels at Tikrit University in Iraq. The research was analyzed using purposive sampling methods. The experimental phase of this research was conducted over a period of three months in 2025. The analysis of this research was done by using SmartPLS (Version 4), and bootstrapping methods were employed in this research. Structural equation modeling (SEM) is employed in this research for testing the research hypotheses. The questionnaire employed in this research is based on constructs that have been previously validated in other research (Nanjundaswamy et al., 2025; Damerji & Salimi, 2021; Al-Hattami, 2025). The questionnaire is designed in a manner that is suitable for this research. Section A of this questionnaire consists of

three questions that are demographic in nature. Section B of this questionnaire consists of questions that are related to SSM accounting. Section C of this questionnaire consists of questions that are related to TAM constructs PEOU and PU. Section D examined innovation in accounting education (see Appendix).

4. RESEARCH RESULTS

4.1. Data analysis

4.1.1. Demographic profile

As shown in Table 1, 51.0% of the response participants were male, and 48.9% were female. Regarding age, 21.8% of response participants were under 21 years old, 27.0% were between 21 and 25 years old, 39.5% were between 26 and 30 years old, and 11.4% were above 30 years old. In terms of education level, 87.5% held a Bachelor's level, 9.3% held a Master's level, and 3.1% held a PhD level education.

Table 1. Data profiles of respondents

Demographics	*Frequency (No.)*	*Percentage (%)*
Gender		
Male	49	51.0%
Female	47	48.9%
Total	96	100
Age		
Under 21 years old	21	21.8%
21–25 years old	26	27.0%
26–30 years old	38	39.5%
Above 30 years old	11	11.4%
Total	96	100
Education level		
Bachelor's	84	87.5%
Master's	9	9.3%
PhD	3	3.1%
Total	96	100

4.1.2. Reliability and convergent validity tests

The study used Cronbach's alpha, average variance extracted (AVE), composite reliability (CR), and variance inflation factor (VIF) analysis to verify construct validity. Hulland (1999) suggests factor loadings over 0.70. As recommended by Bagozzi and Yi (1988), Hair et al. (2017), and Vinzi et al. (2010). Convergent validity is established when AVE surpasses 0.50, and adequate reliability is shown by CR and Cronbach's alpha values greater than 0.70 (Fornell & Larcker, 1981). Table 2 presents that all constructs, *PU, PEOU*, *INNOV*, and *SSM,* exceeded the suggested thresholds, with AVE values exceeding 0.50, CR values exceeding 0.85, and CA values ranging from 0.811 to 0.902. Strong internal consistency, sufficient convergent validity, and high CR are confirmed by these results, suggesting that the measurement model is reliable and appropriate for additional study.

Table 2. Reliability and convergent validity tests

Constructs	*Cronbach's alpha*	*CR (rho_c)*	*AVE*
PEOU	0.839	0.892	0.675
PU	0.895	0.922	0.705
INNOV	0.902	0.928	0.722
SSM	0.811	0.856	0.505

4.1.3. Discriminant validity

A low correlation between a construct of interest and unrelated constructs is a measure of discriminant validity, which is the extent to which a construct is theoretically and empirically truly separate from other constructs (Heeler & Ray, 1972; Hair et al., 2010). During partial least squares SEM (PLS-SEM) model evaluation, discriminant validity is checked using a set of criteria; the most important is the Fornell-Larcker criterion, which requires that the square root of the AVE for a construct must be larger than its correlation with other constructs (Fornell & Larcker, 1981). Table 3 shows the discriminant validity results. It is clear that the square root of the AVE for all the constructs is larger than the correlation between the constructs. This confirms the discriminant validity. Moreover, the correlation analysis shows a positive and significant relationship between *SSM* and the three variables: *PU, PEOU*, and *INNOV*.

Table 3. Discriminant validity constructs

Constructs	*INNOV*	*PEOU*	*PU*	*SSM*
INNOV	1.000			
PEOU	0.685	1.000		
PU	0.600	0.750	1.000	
SSM	0.605	0.452	0.485	1.000

4.1.4. Explanation of the variance (R^2)

The structural model assessment was performed following the analysis of the measurement model, and all criteria were met. The determination coefficients (R^2) were assessed in order to evaluate the explanatory power of the model. The R^2 values obtained in this study were 0.486 for *INNOV* and 0.366 for *SSM*. This means that 48% of the variance in the mediator variable (*INNOV*) and 36% of the variance in the dependent variable (*SSM*) are explained by the predictor variables, *PEOU* and *PU*. According to the guidelines provided, the R^2 values obtained in this study confirm that it meets the criteria.

Table 4. Goodness of fit

Variables	*R^2*
INNOV	0.486
SSM	0.366

4.2. Hypothesis testing

Table 5 shows the outcome of hypothesis testing, which states that three hypotheses were supported, whereas two hypotheses were not supported. The result indicates that there is a significant and positive impact of *PEOU* on *INNOV*, with $p < 0.001$ and $t = 3.372$. This result supports that *PEOU* has a strong and significant impact on *INNOV*. Conversely, *PU* has a positive but insignificant impact on *INNOV* ($p = 0.255$, $t = 1.140$), which implies that *PU* does not have a significant predictive power on innovation in accounting education. Moving on to the indirect effects, which include the independent variable, mediator, and dependent variable. The result shows that the relationship between *PEOU* and *SSM* accounting

is significantly mediated by *INNOV*, with $p < 0.001$, and $t = 3.301$. However, the relationship between *PU* and *SSM* was found to be insignificantly mediated by *INNOV* ($p = 0.310$, $t = 1.015$), which implies that there is no significant mediating effect in this scenario.

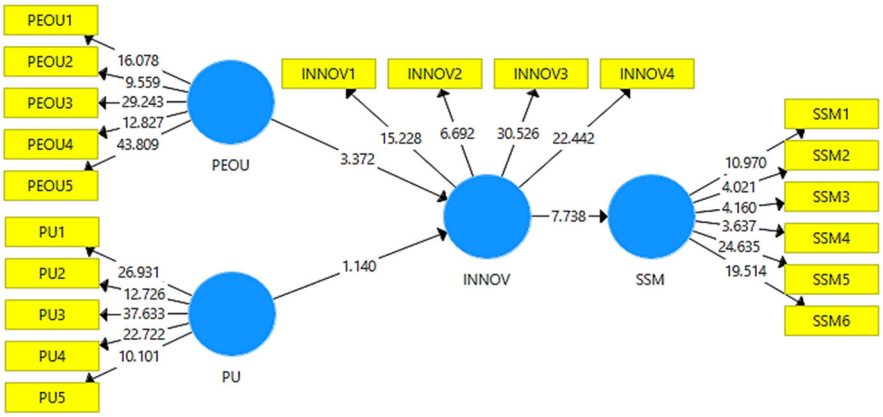
Table 5. Path coefficients

Variables	*Path coefficients*	*T-statistic*	*p-vallue*	*Results*
PEOU → INNOV	0.538	3.372	0.001***	Supported
PU → INNOV	0.197	1.140	0.255	Unsupported
INNOV → SSM	0.605	7.738	0.000***	Supported
PEOU → INNOV → SSM	0.325	3.301	0.001***	Supported
PU → INNOV → SSM	0.119	1.015	0.310	Unsupported

*Note: Sig-levels: *** p < 0.001, ** p < 0.01, * p < 0.05.*

Figure 2 illustrates the results of PLS-SEM analysis, and this shows the level of measurement indicators for each construct and also illustrates the effect of *PEOU* and *PU* on *INNOV*, which, in turn, influences *SSM*.

Figure 2. PLS-SEM study model



Source: Authors' elaboration based on SmartPLS outputs.

5. DISCUSSION

The results of this research offer important implications for how PU and PEOU shape innovation in accounting education and, consequently, SSM. The positive and statistically significant effect of PEOU on innovation ($p < 0.001$; $t = 3.372$) underlines the significance of developing and utilizing user-friendly and intuitive educational technology, systems, and tools. This finding indicates that students of accounting are more inclined to be innovative and adopt innovative learning strategies and innovative approaches to accounting education if they find the technology, system, or tool used for learning easy to understand and use. This finding is aligned with the TAM model, which proposes that user-friendliness has a direct impact on individuals' attitudes towards technology adoption and, as such, leads to innovative learning and innovative approaches to education. On the contrary, the positive and statistically insignificant effect of PU on innovation in accounting education ($p = 0.255$; $t = 1.140$) indicates that students of accounting are not inclined to be innovative and adopt innovative learning strategies and innovative approaches to accounting education if they find the technology, system, or tool used for learning attractive. This implies that the extent of innovation in accounting students is not necessarily related to the perception of the usefulness of the technology. The first explanation for this result is that the perception of usefulness is a more remote factor that is mediated by the PEOU construct. Unless the learning tools used in accounting education are considered easy to use, the perception of usefulness might not be sufficient to foster innovative practices. Furthermore, the results of this study underscore the significance of PEOU in accounting education as opposed to the traditional TAM model that assumes the dominant role of the perception of usefulness in the adoption of innovative practices. The significance of the PEOU construct in the study results is underscored by the mediation results. The results of the study indicate that the ease of use of the learning tools in accounting education fosters innovation in accounting education, which in turn facilitates the integration of SSM practices. This is underscored by the strong mediation effect of the innovation construct in the relationship between PEOU and SSM ($p < 0.001$; $t = 3.301$). It suggests that the incorporation of sustainability concepts in accounting education can be facilitated through the promotion of innovation using easily accessible learning tools. However, the insignificant value of the mediating effect between PU and SSM ($p = 0.310$; $t = 1.015$) suggests the limitation of sustainability through the promotion of innovation, not being fully mediated by PU. Overall, the study contributes to the literature by demonstrating that although both PEOU and PU are important dimensions of technology adoption, stimulating innovation and thereby embedding sustainability into strategic management accounting education relies more heavily on ease of use.

6. CONCLUSION

The study investigated how innovation in accounting education is influenced by PU and PEOU, as well as how innovation in accounting education mediates the relationship between SSM, PEOU, and PU among accounting students. Data from a purposive sample of 96 accounting students were gathered in 2025 using a standardized survey instrument as part of this study's quantitative research methodology. Additionally, the findings showed that PEOU has a statistically significant and favorable impact on innovation in accounting education. Additionally, the data showed that PU's impact on innovation in accounting education is statistically negligible. Innovation in accounting education strongly moderates the connection between PEOU and SSM, according to this mediation study.

This study examines how accounting students' perceptions of educational technologies, specifically, PEOU and PU variables, shape innovation in accounting education and the mediating role this innovation plays in the relationship with sustainable SSM. The findings reveal that PEOU significantly and strongly supports innovation, while PU does not exhibit a statistically significant effect. Furthermore, innovation is found to be a significant mediator in the relationship between PEOU and SSM, while the same relationship is not true for PU. These results suggest that ease of use is a more direct and effective driver of innovation, particularly in the educational context. The study demonstrates that innovation in accounting education plays a significant role in developing sustainability-focused decision-making capabilities in businesses' strategic management processes. PEOU's promotion of innovation will enable businesses to optimize their environmental and social performance by adopting user-friendly technologies. It will also be instrumental in the development of the strategic management field of study in the direction of a stakeholder-oriented and sustainability-driven approach.

The findings also highlight the importance of developing friendly technologies to foster innovation and sustainability in accounting education. In this case, educators and learning institutions can be encouraged to develop friendly technology that does not act as a barrier to the adoption of technology by students. For example, friendly technology can be developed to incorporate interactive simulations, gamification learning, or sustainability-driven case studies that can be instrumental in helping students understand SSM concepts. From a business perspective, the skills can be directly applied to strategic management practices such as EMS and CSR reporting or sustainable supply chain management. For example, friendly technology can be developed for ESG reporting that can be instrumental in helping businesses track their sustainability performance. The purposive sampling technique can be considered a limitation in generalizing the findings. This could be further supported through the use of larger and more diversified samples, such as professional accountants or students from different disciplines, in further alternative research. Additionally, the underlying context or cultural background for the insignificant effect of PU may be further explored. For the field of strategic management, further research may be conducted through the use of case studies or surveys with business managers to further support the findings with regard to the integration of SSM with the strategic planning process. Further alternative theories may also be used to enrich the understanding of these underlying currents.

The study has shown that PEOU indeed plays an important role in the promotion of innovation in the field of accounting education and the integration of SSM practices. The mediating effect of innovation has emphasized the need for user-centered technologies to promote the sustainability mindset in the field of accounting. From a strategic management perspective, these findings suggest that businesses can optimize their environmental and social performance by adopting user-friendly technologies and by achieving a competitive advantage by developing stakeholder-focused strategies.

Despite the significant contributions made by the study, it is not without certain limitations. First, it is important to note that although the study has made significant contributions, it is based on a small sample population, which is comprised of accounting students from a specific university. As a result, it is not generalizable to other university settings and possibly other cultures. Second, it is not easy to establish causality between variables in a cross-sectional survey. Lastly, it is not clear whether common method bias and social desirability bias can be present in self-reported data, and it is not clear whether other factors, which can influence innovation in accounting education, were considered in line with the TAM and SSM.

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APPENDIX. QUESTIONNAIRE

Section A: Demographic data						
Gender	Male					
	Female					
Age	Under 21 years old					
	21–25 years old					
	26–30 years old					
	Above 30 years old					
Education level	Bachelor's degree					
	Master's degree					
	PhD degree					
Section B: Sustainable strategic management accounting						
Statements		***Strongly disagree***	***Disagree***	***Neutral***	***Agree***	***Strongly agree***
1. I believe aligning organizational strategies with international accounting, governance, and reporting standards strengthens global sustainability performance.		1	2	3	4	5
2. I believe incorporating environmental management practices, such as green accounting and carbon reporting, into strategic planning enhances sustainable value creation.		1	2	3	4	5
3. I believe ethical standards and professional codes of conduct should be embedded in strategic decision-making to ensure responsible and sustainable management.		1	2	3	4	5
4. I believe the challenges of Industry 4.0 require organizations to redesign their strategic management approaches to maintain sustainable competitive advantage.		1	2	3	4	5
5. I believe organizations should continuously adapt their strategic management practices in response to regulatory and policy changes to ensure long-term sustainability.		1	2	3	4	5
6. I believe integrating emerging technologies into strategic planning enhances an organization's long-term competitiveness and sustainability performance.		1	2	3	4	5
Section C: Technology acceptance model constructs						
Perceived ease of use (PEOU)						
1. Learning to operate AI systems in accounting or auditing would be easy for me.		1	2	3	4	5
2. I would find it easy to get AI systems to do what I want them to do in accounting or auditing.		1	2	3	4	5
3. My interaction with AI systems in accounting/auditing would be clear/understandable.		1	2	3	4	5
4. I would find AI systems in accounting or auditing to be flexible to interact with.		1	2	3	4	5
5. It would be easy for me to become skillful at using AI systems in accounting or auditing.		1	2	3	4	5
Perceived usefulness (PU)						
1. Using AI technologies would improve my future job performance in accounting or auditing		1	2	3	4	5
2. Using AI technologies in my future accounting or auditing job would increase my productivity.		1	2	3	4	5
3. Using AI technologies would enhance my effectiveness on the job in accounting or auditing		1	2	3	4	5
4. Using AI technologies would make it easier to do my future job in accounting or auditing		1	2	3	4	5
5. I would find AI technologies useful in my future job in accounting or auditing.		1	2	3	4	5
Section D: Innovation in accounting education						
1. I often use digital accounting tools in new and creative ways to solve accounting problems		1	2	3	4	5
2. The use of digital tools enables us to develop innovative accounting solutions		1	2	3	4	5
3. Experimenting with new accounting technologies improves my work/studies.		1	2	3	4	5
4. Using digital accounting technologies enhances my ability to innovate in my field.		1	2	3	4	5