تحليل تأثيرات تكنولوجية الذكاء الإصطناعي على موثوقية مهنة المحاسبة والبحث العلمي

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ملخص البحث:

أصبحت تكنولوجية الذكاء الاصطناعي خلال الفترة السابقة وهذه الفترة منتشرة على نطاق واسع في جميع أنحاء العالم ، وتم استخدامها في مختلف المجالات وخاصة العلمية منها ، حيث تساعد هذه التكنولوجية وخاصة في مجال التعليم والبحث العلمي الدارسين والباحثين على الاستفادة من هذه التقنيات في التعليم الذاتي واستخلاص المعلومات من مصادرها المختلفة ، إلا أن ذلك يمكن أن يكون كافياً في بعض المجالات العلمية دون غيرها بالنسبة للعملية التعليمية ، إما في مجال البحث العلمي فإن ذلك يحتاج إلى أهمية تحديد مصدر المعلومات المستمدة من هذه التقنية في المجالات البحثية وبما يحقق الأمانة العلمية ، ويعزز الشفافية والمصداقية التي يجب أن يلتزم بها الباحث العلمي. من هنا كان الهدف الأساسي لهذه الدراسة هو تحليل تأثيرات تكنولوجيا الذكاء الاصطناعي على موثوقية مهنة المحاسبة من خلال نظرية القيد المزدوج ، والجوانب النظرية للمحاسبة والبحث العلمي ، وأهمية هذه التكنولوجيا في رفع وصقل المهارات العلمية والبحثية من خلال استخدام ذلك في تنمية أساليب التعليم لديهم ، وكذلك إلهامهم بالعناوين البحثية المميزة ، وسرعة الحصول على المعلومات وتحليلها. ولتحقيق ذلك تم توزيع استبانة على طلاب قسم المحاسبة جامعة طرابلس الأهلية بليبيا ، لاستطلاع آرائهم حول تأثيرات هذه التكنولوجية على موثوقية البحث العلمي ، إضافة إلى استخدام هذه التقنية في إحدى المقررات الدراسية المحاسبية من خلال توجيه ووضع عدد من التساؤلات النظرية والعملية تمثلت في إدراج مجموعة من العمليات المحاسبية البسيطة والمعقدة ، استخدمت الدراسة الرزمة الإحصائية للعلوم الاجتماعية (SPSS) لتحليل البيانات التي تم جمعها من عينة مكونة من 50 مشاركاً. توصلت الدراسة الى مجموعة من النتائج أهمها إن استخدام هذه التكنولوجية كانت لها إجابات صحيحة ودقيقة فيما يتعلق بالإستفسارات النظرية ، وكذلك فيما يختص بالمعالجات المحاسبية للعمليات والأحداث المالية ، أما بالنسبة

لأهميته في البحث العلمي فتمثلت في أنها تعمل على حفظ الوقت وتوفير كميات هائلة من المعلومات النصية من مصادر مختلفة كالأوراق البحثية أو المقالات ، وعلى الرغم من ذلك فإن المشاركون أشاروا إلى أن هناك صعوبة في اكتشاف ما إذا كان هذا مكتوباً بواسطة الذكاء الاصطناعي أو بواسطة الإنسان نفسه. وبناءً على هذه النتائج فقد أظهر الطلاب المعرفة بمثل هذه التقنيات عملياً وتأثيرها على كيفية إجراء المعالجات والممارسات المحاسبية النظرية منها والعملية ، إضافة إلى كيفية الاستفادة منها في البحث العلمي بشكل مسؤول وأخلاقي ، ويتطلب من طلاب العلم في المرحلة الجامعية وما بعدها وكذلك الباحثين الاستمرار في استخدام أدوات الذكاء الاصطناعي المختلفة من أجل تنمية مهارات التعليم الذاتية لديهم ، وكذلك الإشارة إلى مصدر هذه المعلومات بأوراقهم البحثية هل هي نتائج الذكاء الاصطناعي أم من خلال مصادر أخرى وذلك لإظهار سمة النزاهة والشفافية والمصداقية ، ونتيجة لذلك فقد أوصت الدراسة أعضاء هيئة التدريس ، المختصين وصناع القرار بوزارة التعليم العالي ، وكذلك دور النشر بالاستفادة من هذه التقنيات في مجالات التعليم والبحث العلمي لمواكبة التطورات المتسارعة في بيئة العمل.

الكلمات الافتتاحية : الذكاء الاصطناعي، نظرية القيد المزدوج ، نظرية المحاسبة ، البحث العلمي.

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Analyzing the impact of Artificial Intelligence Technology on the Reliability of the Accounting Profession and Scientific Research

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Abstract

Artificial intelligence (AI) technologies have rapidly proliferated across numerous fields, particularly in education and scientific research. These technologies offer substantial benefits by enabling self-directed learning and facilitating access to diverse information sources. However, their reliability

and ethical application in academic research remains a subject of concern, particularly regarding the accuracy, credibility, and transparency of information derived from AI systems. In scientific research, however, it is important to identify the source of information derived from this technology in research areas, ensuring academic integrity, enhancing the transparency and credibility that scientific researchers must adhere to. Hence, the primary objective of this study was to examine the impact of AI technology on the reliability of accounting profession throughout the double entry theory, theoretical aspects of accounting and scientific research, and the importance of this technology in enhancing and refining scientific and research skills by using it to develop teaching methods, as well as inspiring students with distinctive research titles and the speed with which they can access and analyze information. To achieve this, a questionnaire was distributed to accounting students at University of Tripoli Alahlia in Libya to survey their opinions on the impact of this technology on the accuracy of accounting processes according to the double-entry theory, validity of theoretical aspects of accounting, and reliability of scientific research. The study also used this technology in an accounting course by posing a number of theoretical and practical questions, including a set of simple and complex accounting operations. The study used the Statistical Package for the Social Sciences (SPSS) to analyze data collected from a sample of 50 participants. The study reached a number of results, the most important of which was that the use of this technology provided correct answers to the theoretical inquiries, and on the double entry theory. The same was true for more complex accounting treatments. Its importance in scientific research lies in its ability to save time and provide vast amounts of textual information from various sources, such as research papers or articles. However, participants indicated that it was difficult to determine whether the text was written by artificial intelligence or by humans. Based on these results, students demonstrated practical knowledge of such technologies and their impact on how to conduct theoretical and practical accounting practices and processes, in addition to how to benefit from them in scientific research in a responsible and ethical manner. Undergraduate and postgraduate students,

as well as researchers, are required to continue using various AI tools to develop their self-learning skills, and to indicate the source of this information in their research papers, whether it is the results of AI or through other sources, in order to demonstrate integrity, transparency and credibility. As a result, the study recommended that faculty members, specialists and decision-makers at the Ministry of Higher Education and publishing houses benefit from these technologies in the fields of education and scientific research to keep pace with the rapid developments in the work environment.

keywords: Artificial Intelligence, Double entry theory , accounting operations, and scientific research

1. **Introduction**

Artificial intelligence (AI) technologies have rapidly evolved and gained widespread attention at recent years, especially after the introduction of large language models such as ChatGPT. These tools have attracted significant interest in academic and educational settings due to their ability to generate coherent and contextually relevant content across various domains. As AI continues to transform the way people interact with technology, its integration into education and research has become a central topic of debate. Many researchers found that, in the recent years and future, intelligent machines will replace or enhance human capabilities in many areas. Artificial intelligence is the intelligence exhibited by machines or software. It is the subfield of computer science. Artificial Intelligence is becoming a popular field in computer science as it has enhanced the human life in many areas (Erduran and Levrini, 2024; Yusef; Pervin and Gonzalez, 2023). In higher education, institutions are increasingly adopting AI to enhance learning experiences, facilitate self-directed education, and provide broad access to information. However, concerns have also emerged regarding data privacy, ethical use, and the authenticity of AI-generated content. In fields like accounting there are some drawbacks, including the potential replacement of essential social interactions between teachers and

students and concerns regarding privacy issues and ethical use of data. Furthermore, research by Bettayeb; Talib; Altayasinah; and Dakalbab (2024), carried out that, numerous benefits of chatGPT, such as the opportunity for students to investigate AI technology, personalized assistance, and improved learning experiences. Moreover, advantages such as enhance learning and enhance information accessibility are identified. Nevertheless, ethical consideration and biases in AI models are also highlighted. ChatGPT enhances student engagement by offering personalized responses, prompt feedback, rapid access to information, resulting in enhance learning outcomes and the growth of critical thinking abilities. Ethical considerations and safeguards, including user education, privacy protection, human supervision, and stated guidelines, are essential for responsible use. The integration of ChatGPT transformers the role of educators from content delivery to assistance and guidance, thereby fostering personalized and differentiated learning. Educators have to consider ethical considerations while monitoring student usage in order to facilitate this transformation. As a result of spread distribution of AI, Large Language Models (LLMs) have already employed in the academic world, its used in various academic and non-academic tasks, including summarizing literature, formal and informal speech writing, and generating ideas. Mizanur; Terano; Nafizur; and Saidur (2023), pointed out that, for the initial idea generation for academic scientific research, ChatGPT could be an effective tool. However, in the case of literature synthesis, citations, problem statements, research gaps, and data analysis, the researchers might encounter some challenges. Therefore, in these cases, researchers must be cautious about using ChatGPT in academic research. Considering the potential applications and consequences of ChatGPT, it is a must for the academic and scientific community to establish the necessary guidelines for the appropriate use of LLMs, especially ChatGPT, in research and publishing. Many benefits can generate from ChatGPT especially in the scientific field, as summarizing, completing, and editing text; creating references, bibliography and citations (Osama; and Afridi, 2023). As well as, generate outlines, abstracts, and introductions. Although the widespread

research on AI in different areas, there is a weakness in ensuring the integrity and credibility of written research. On the same line of that, universities as the main pillar in the process of the redesign of accounting education, and update of the curriculum in the field as the main measure to be undertaken(Valeriu, Mihail, Daniel, Dorel, 2024). It is imperative to point out that ChatGPT cannot provide text with proper citations to research papers and sources.

2. Research Problem

Artificial intelligence, with its various tools, has generated increasing interest among academic leanerers and researchers. Many academics from various scientific disciplines have raised numerous concerns and issues, particularly those related to the automate teaching and research processes and their benefits, accreditation of using these tools in academic learning, writing and publications in scientific research, in addition to the extent of their reliability and effectiveness in increasing researchers' productivity (Salvagno, Taccone and Gerli, 2023; Yusef, Pervin, Gonzalez, 2023). Additional to Any artificial intelligence tool helps in accomplishing many tasks, whether research or educational, such as tool of generative pre-trained transformer, ChatGPT, is a chatbot that could serve as a powerful tool in teaching and scientific writing. ChatGPT is a so-called large language model (LLM) that is trained to mimic the statistical patterns of language in an enormous database of human-generated text combined from text in books, articles and websites across a wide range of domains. ChatGPT can assist scientists with material organization, draft creation and proofreading, making it a valuable tool in research and publishing (Farhat; Sohail and Madse, 2023). Furthermore, ChatGPT has considerable power to advance academia and librarianship in both anxiety-provoking and exciting new ways. However, it is important to consider how to use this technology responsibly and ethically, and to uncover how we, as professionals, can work alongside this technology to improve our work, rather than to abuse it or allow it to abuse us in the race to create new scholarly knowledge and educate future professionals (Lund; and wang, 2023). Despite the many

advantages offered by artificial intelligence in various fields of university education, there are differences in some specializations, especially accounting, as this science is based on accounting principles and standards, procedures and accounting treatments that are primarily based on the theory of double entry with its two sides, debit and credit. Therefore, the use of these tools in this field requires us to directly apply some financial operations to ensure the quality of that, in addition to that it has the potential to transform scientific communication, but concerns have been raised about its impact on the integrity of research and the role of human researchers. Based on that, the main question arising what's the effects of AI on the reliability of accounting processes and scientific research.

To addressing that, the following sub-questions carried out as follow:

I. Does AI have a role in instilling confidence in the accuracy of accounting processes according to the double-entry theory?

II. Does AI have a role in instilling confidence in the validity of theoretical aspects in accounting?

III. Does AI have an impact on the reliability of scientific research in accounting?

3. Research Hypotheses

I. There is an influence of AI on increasing confidence in the accuracy of accounting processes according to the double-entry theory.

II. There is a potential enhance of artificial AI on confidence in the validity of theoretical aspects of accounting.

III. There is an effect of AI on the reliability of scientific research in accounting.

4. Research Objectives

I. Identifying the influence of AI on the accuracy of accounting processes according to the double-entry theory.

II. Identifying the potential enhances of AI on confidence in the validity of theoretical aspects of accounting.

III. To explore the effects of AI on the reliability of scientific research in accounting.

5. Research Importance

The importance of the research lies in emphasizing the advantages of AI applications in the accounting education, and scientific research due to their effective role in various other sciences, as well as emphasizing the extent of the reliability of these technologies in accounting treatments accuracy, theoretical aspects of accounting, and crucial significant of these technologies in the field of scientific research.

6. Research Limits

The study was limited to surveying accounting students' opinions on the use of artificial intelligence techniques, by directly inquiring from these applications about some financial operations, as well as the theory using Chat-GPT 3.5 technology, in addition to the reliability of these techniques in the field of scientific research.

7. Research Methodology:

This research includes a questioners distributed to accounting students after using chat-GBT in class room to emphasize degree of accreditation and reliability on the accuracy of accounting processes according to the double-entry theory, a potential enhance of it on confidence in the validity of theoretical aspects of accounting, and explore its potential impact on the reliability of scientific research in accounting. Based on that, questioners were distributed to have their opinions about its effectiveness on practical, theoretical in the field of accounting and accreditation on scientific research in accounting.

7.1. Data Collection Tool: This study relied on a questionnaire to collect information from the study sample in order to test the study hypotheses and achieve its objectives. This method is considered one of the most widely used methods in scientific research.

7.2. Questionnaire Presentation: the questionnaire included statements related to the study topic, which is analyzing the impact of AI technology on the reliability of accounting education and scientific research, to achieve the objectives of this study was classifying the questioner to:

First Section: included personal information as current study level, experience in accounting, currently using AI, and which AI tools using.
Second section: AI and double entry theory.
Third section: AI and accounting theory, and fourth section: AI and scientific research.

7.3. Study Community and Sample: The study community represented Tripoli National University, and as for the researched sample, it represented the students of the Accounting Department. 50 questionnaires were distributed to the study sample using direct distribution to the participants in the questionnaire. This was after using AI techniques in the field of accounting through multiple inquiries about the accounting treatments of financial operations and events according to the double-entry theory, and inquiries about the theoretical aspects related to the various accounting foundations and methods related to the theoretical aspect of accounting, in addition to the reliability of using these techniques in the field of scientific research.
7.4. Statistical Data Analysis: To facilitate the analysis process and after the final collection of the questionnaire forms, the collected data was compiled and entered into SPSS, which is considered one of the most important statistical programs used in conducting statistical analyses of all kinds.
The following statistical treatments were used: percentages, frequencies, statistical averages, standard deviations; Cronbach's alpha coefficient, simple regression to test the research hypothesis and most of the question in the questionnaire was used the five-point Likert scale to measure the degree of the research sample's responses to the questionnaire statements, as this scale is considered one of the most common and accurate scales. It provides the sample members with a set of items and asks them to express their opinion in expressing the degree of their agreement or support for them, also different scales were used to measure the sample’s opinions, depending on the nature of each question, as shown in the questionnaire.
7.5. Validity and Reliability of the Study Tool:

A. Validity of the Study Tool: It refers to the ability of the study tool to measure what it was designed for or the characteristic to be measured.

B. Reliability of the Study Tool: The validity and reliability of the research tool were tested and measured by using Cronbach's Alpha coefficient to ensure the overall stability of the questionnaire and the degree of internal consistency between its phrases, where a rate of 60% for the Alpha coefficient is statistically acceptable. It is noted from the following table that all the percentages of the interviewees were higher than the mentioned rate, which indicates that all the questionnaire items have high reliability rates.

7.6. Description and analysis of the results of the practical study:

A. Measuring the reliability of the questionnaire: By using Cronbach's alpha coefficient to measure the overall stability of the questionnaire and the overall consistency of its phrases, the value of Cronbach's alpha coefficient and the validity coefficient for all the phrases were as follows:

Table (1)

Cronbach's alpha scale.

Items	Variable name	Cronbach's alpha	Validity
1 - 6	Artificial Intelligent and Double-Entry Theory	% 75	% 86.6
7 - 17	Artificial Intelligent and Validity of theoretical aspects in accounting	% 66.4	% 81.4
18 - 27	Artificial Intelligent and Reliability of Scientific Research in Accounting.	% 71.6	% 84.6
1 - 27	Total	% 66.4	% 81.4

Source: SPSS output

From the previous table, we note that the Cronbach's alpha coefficient for the questionnaire as a whole reached 0.664, which is an acceptable and appropriate reliability coefficient for scientific research purposes, which means that the questionnaire has a degree of internal reliability, as the

Cronbach's alpha reliability coefficient is considered acceptable if it exceeds (0.60).

7.6.1. Description and analysis of the questionnaire:

First: Statistical description of the research variables according to the respondents background of the research sample:

1. Distribution of the sample members according to current student level

Table (2)

Results of the distribution of the study sample according to the current level of students

	Frequency	Percent	Valid percent	Cumulative percent
Valid 7	18	% 36	% 36	36.0
8	32	% 64	% 64	64.0
	50	% 100	% 100	100.0

It is clear from Table (2) that 36 % of the research sample in the level 7, and 64 % of those who was in level 8.

2. Distribution of the sample members according to student experience

Table (3)

Results of the distribution of the study sample according to the student's experience

	Frequency	**Percent**	**Valid percent**	**Cumulative percent**
Valid 0 – 2 Years	**0**	**0**	**0**	**0**
3 – 5 Years	**50**	**% 100**	**% 100**	**100.0**
More than 5 Years	**0**	**0**	**0**	**0**

Table (3) shows that all the respondent's experience had 3 to 5 years of experience in the field of study. This reflects that the sample being surveyed has the experience that qualifies it to answer the questionnaire questions.

3. Distribution of the sample members according to current using AI

Table (4)

Results of the distribution of the study sample according to current using AI

	Frequency	Percent	Valid percent	Cumulative percent
Valid Yes	50	% 100	% 100	100.0
No	0	0	0	0
Not Sure	0	0	0	0

As the result of analysis about using of artificial intelligence, table (4) showed that, all the sample study using AI technology.

4. Distribution of the sample members according to using AI tools

Table (5)

Results of the distribution of the study sample according to using AI tools

	Frequency	Percent	Valid percent	Cumulative percent
Valid Robotic Process Automation	0	0	0	0
Machine Learning for Forecasting	0	0	0	0
AI Chat-bots or Virtual assistants	50	% 100	% 100	100.0
Intelligent OCR for invoice processing	0	0	0	0
Others	0	0	0	0

As the result showed in table (4), % 100 of the sample's study was using AI Chat-bots or virtual assistants.

Second: Research hypotheses testing: according to the research question and objectives, the following hypotheses were formulated:

First hypothesis: There is an influence of AI on increasing confidence in the accuracy of accounting processes according to the double-entry theory.

Second hypothesis: There is a potential enhance of AI on confidence in the validity of theoretical aspects of accounting.

Third hypothesis: There is an effect of AI on the reliability of scientific research in accounting.

Firstly: testing of the first hypothesis: there is an influence of AI on increasing confidence in the accuracy of accounting processes according to the double-entry theory.

Table (6)

Results of a simple regression analysis related to the artificial intelligence and double entry theory

Model	R	R Square	Adjusted R Square	Std. error of estimate
1	0.933	0.870	0.867	1.699

Table (7)

ANOVA results related to the artificial intelligence and double entry theory

Model	Source of Variance	Sum of Squares	ANOVA df	Mean Square	F	Sig
AI and double entry theory	Regression	929.874	1	929.874	321.785	0.000
	Residual	138.708	48	2.890		
	Total	1068.582	49			

It is clear from the data contained in Table (6) and Table (7) that the research sample agrees that AI has an influence on the double entry theory, as the correlation coefficient (R) reached 0.933 at the 0.000 level, which is less than the (0.05) level, and the square of the correlation coefficient (R2) reached 0.870, and this percentage explains the impact of the AI on increasing confidence in the accuracy of accounting processes according to the double-entry theory, which amounted to 87 %, and this leads to the acceptance of the hypothesis by the research sample.

Secondly: Testing of the second hypothesis: there is a potential enhance of AI on confidence in the validity of theoretical aspects of accounting.

Table (8)

Results of a simple regression analysis related to the artificial intelligence and validity of theoretical aspects of accounting

Model	R	R Square	Adjusted R Square	Std. error of estimate
1	0.511	0.261	0.245	1.591

Table (9)

ANOVA results related to the artificial intelligence and theoretical aspects of accounting

Model	Source of Variance	Sum of Squares	ANOVA df	Mean Square	F	Sig
AI and theoretical aspects of accounting	Regression	42.925	1	42.925	16.942	0.000
	Residual	121.617	48	2.534		
	Total	164.542	49			

Table (8) and Table (9), showed that the research sample agrees that artificial intelligence has a potential enhance on respondents confidence in the validity of theoretical aspects of accounting, as the correlation coefficient (R) reached 0.511 at the 0.000 level, which is less than the (0.05) level, and the square of the correlation coefficient (R2) reached 0.261, and this percentage explains the potential enhance of the AI on confidence in the validity of theoretical aspects of accounting, which amounted to 26.1 %, and this result means that, the second hypothesis accepted by the research sample.

Thirdly: Testing of the third hypothesis: there is an effect of AI on the reliability of scientific research in accounting.

Table (10)

Results of a simple regression analysis related to AI and reliability of scientific research in accounting

Model	R	R Square	Adjusted R Square	Std. error of estimate
1	0.184	0.034	0.014	3.644

Table (11)

ANOVA results related to the artificial intelligence and reliability of scientific research in accounting

Model	Source of Variance	Sum of Squares	ANOVA df	Mean Square	F	Sig
AI and reliability of scientific research in accounting	Regression	22.22	1	22.22	1.673	0.202
	Residual	637.462	48	13.28		
	Total	659.682	49			

As the result of analysis about the effect of AI on the reliability of scientific research in accounting, table (10) and table (11), showed that the research sample disagree with that AI has an effect on the reliability of scientific research, as the weak of correlation coefficient (R) just reached 0.184 at the 0.202 level, which is more than the (0.05) level, and the square of the correlation coefficient (R2) reached only, 0.014 and this percentage explains no effect of the artificial intelligence on the reliability of scientific research in accounting, which amounted to 1.4 %, and this means that, the third hypothesis unaccepted by the research sample.

8. Results and Recommendations

Firstly: Results

1. AI has an effect on the accuracy of accounting operations based on the double-entry theory.
2. AI has an influence on enhancing the credibility of theoretical aspects in accounting.
3. AI has no impact on the reliability of scientific research in accounting.

Secondly: Recommendations

1. It is recommended to integrate artificial intelligence technology into accounting education as one of the teaching tools due to its positive effects on double entry theory.
2. Attempting to reach a state of integration and interaction between the technological of artificial intelligence and accounting and auditing field.
3. As a result, the study recommended that faculty members, specialists and decision-makers at the ministry of higher education and publishing houses benefit from these technologies in the fields of education and scientific research to meet the demands of a fast-paced work environment.

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Questionnaires

Analyzing the Impact of Artificial Intelligence Technology on the Reliability of Accounting Education and Scientific research

Section A: Respondents Background

Q1. What is your current student level?

Semester

Q2. Your Experience in Accounting:

a. 0-2 Years

b. 3-5 years

c. More than 5 Years

Q3. Are you currently using any Artificial Intelligence (AI)- powered tools in your accounting processes?

a. Yes

b. No

c. Not Sure

Q4. Are (AI) tools currently integrated into your financial operations?

a. Robotic Process Automation (RPA)

b. Machine Learning for Forecasting

c. AI Chat-bots or Virtual assistants

d. Intelligent OCR for invoice processing

e. Other (Please Specify):……..

Section B: AI and Double entry theory

Q1. Which accounting areas in your study are most affected by AI? (Select all that apply).

a. Bookkeeping

b. Financial Reporting

c. Auditing

d. Taxation
e. Payroll
f. Budgeting and Forecasting

Q2. To what extent do you agree with the following statement, " AI enhances the efficiency of double entry bookkeeping"

a. Strongly Agree
b. Agree
c. Neutral
d. Disagree
e. Strongly Disagree

Q3. How has AI influenced error detection in double entry accounting?

Phrases	Greatly Improved	Somewhat Improved	No Significant Impact	Worsened	Not Sure
AI influenced error detection in double entry accounting					

Q4. How familiar are you with the use of AI AI in accounting?

Phrases	Not at All Familiar	Slightly Familiar	Moderated Familiar	Very Familiar	Expert Level
familiar are you with the use of AI AI in accounting					

Q5. Does AI challenge the foundational logic of the double entry system (i.e., for every debit, there must be a credit)?
a. Yes – AI alters the traditional logic
b. No – AI supports and automates it
c. Not Sure

Q6. In your experience, how does AI affect the accuracy of ledger entries (debits and credits)?
a. Significantly Increase Accuracy
b. Slightly Increase Accuracy
c. No Impact
d. Decrease Accuracy
e. Not Applicable

Q7. Do you believe AI will eventually replace human accountants in double entry tasks?
a. Yes
b. No

c. Partially
d. Not Sure

Q8. To what extent do you agree with the following statement, " AI supports the consistency and integrity of the double entry accounting systems"?

Phrases	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
AI supports the consistency and integrity of the double entry accounting systems					

Q9. Has AI improved the automation of the double entry recording process (e.g, auto – posting journal entries)?

Phrases	Yes, Significantly	Yes, Somewhat	No Noticeable change	Not Sure
AI improved the automation of the double entry recording process				

Q10. In your experience, does AI correctly apply the double entry rule (i.e., every debits must equal a credit)?

Phrases	Always	Most of the time	Occasionally	Rarely	Not Sure
AI correctly apply the double entry rule					

Q11. Which financial operations have seen the greatest impact from AI in terms of double entry accuracy? (select all that apply)

a. General Ledger Management
b. Accounts Payable / Receivable
c. Asset Management
d. Pay roll Processing
e. Financial Statement Preparation
a. None

Q12. How has AI affected the following aspects of double entry financial operations?

Phrases	No Impact	Low impact	Moderate impact	impact	High Impact

12.1. Speed of transaction recording					
12.2. Accuracy of Journal entries					
12.3. Detection of double entry errors					
12.4. Real – Time financial reporting					

Q13. What are the key benefits of using AI in financial operations under double entry systems?

a. Increased Accuracy
b. Time and Cost Efficiency
c. Fraud and Anomaly Detection
d. Consistent Compliance
e. Better Internal Controls
a. Other, ……

Section C: AI and The theoretical aspects of accounting

Q1. To what extent do you agree that AI challenges the assumptions of traditional accounting theory (i.e., going concern, materiality)?

Phrase	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
AI challenges the assumptions of traditional accounting theory					

Q2. Does the automation of accounting processes through AI affect your confident in the objective of accounting theory?

Phrase	Yes, It increase confidence	No, It decrease confidence	No, It has no effect	Not Sure
AI affect your confident in the objective of accounting theory?				

Q3. In your opinion, does AI enhance or undermine the theoretical foundation of accounting (such as the conceptual framework and accounting principles)?

Phrase	Strongly undermines	Somewhat undermine	No impact	Somewhat enhances	Strongly enhances

AI enhance or undermine the theoretical foundation of accounting					

Q4. Would you support updating accounting theories to better reflect AI – driven decision – making and automation?

Phrase	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
AI enhance or undermine the theoretical foundation of accounting					

Q5. How confident are you in the relevance and validity of current accounting theories?

Phrase	Not confident	Slightly confident	Moderately confident	Very confident	Completely confident
Relevance and validity of current accounting theories?					

Q6. Do you believe that accounting theory should evolve as AI becomes more integrated into accounting practice?

Phrase	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Relevance and validity of current accounting theories?					

Section D: AI and Scientific Research

Q1. Are you familiar with AI technologies used in scientific research?

Phrases	Yes	No	To some extent
familiar with AI technologies used in scientific research			

Q2. Have you used AI tools (i.e., chat GPT, Data analysis software, Machine Learning, etc) in your research activities?

Phrases	Yes	No	Occasionally
Used AI tools used in your research activities			

Q3. If yes, in which research stages have you used AI (check all that apply)?

Phrase	Literature review	Data collection	Writing and editing	Data analysis	Modeling and simulations	Peer review support	Other
Which research stages have you used AI							

Q4. To what extent do you agree with the following statements?

Phrases	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
4.1. AI improves the efficiency of scientific research processes					
4.2. AI enhances the quality and accuracy of research outcomes					
4.3. AI facilitates interdisciplinary and innovative research					
4.4. AI may lead to over – dependence and reduce critical thinking					
4.5. AI could raise ethical or bias concerns in research					

Q5. What do you consider the main benefits of AI research (select all that apply)?

Phrase	Faster data processing and analysis	Automated writing and summarizing	Enhanced prediction and modeling	Writing and editing	Better access to information	Personalized research assistance	Other
The main benefits of AI in							

research							

Q6. What challenges do you associate with using AI in research (select all that apply)?

Phrase	Lack of technical skills	Ethical concerns (i.e., data privacy, plagiarism)	Inaccuracy or hallucination of information	Limited access to advanced AI tools	Overreliance automated tools	Other
Challenges associate with using AI in research						