The Efficacy of AI Using White Box Approach in Audit Transparency and Liquidation among Audit Practitioners in Metro Manila

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Article History
Received:
03-06-2025

Reviewed & Revised:
11 -08-2025

Accepted:
24-08-2025

Abstract

This study examines the efficacy of artificial intelligence (AI) utilizing a White Box Approach in enhancing audit transparency and liquidation among practitioners in Metro Manila. A descriptive quantitative research design was employed, with data collected via an online survey from 30 purposively selected audit professionals. Statistical analysis, including descriptive statistics and t-tests, revealed that AI tools significantly improve consistency, transparency, and security in audits, with SAP Audit Management being the most prevalent software. However, challenges such as system processing issues and skill gaps were identified. The findings suggest that while AI enhances audit quality, recommendations include software improvements, specialized training programs, and strengthened data security protocols to maximize its benefits.

Keywords: *AI, White box approach, Audit-transparency, Liquidation, Audit-practitioners, Metro-Manila*

Introduction

Artificial Intelligence (AI) is rapidly changing the landscape of auditing. Its integration has introduced new tools and methods that significantly improve audit efficiency, accuracy, and transparency. However, these innovations also pose challenges, particularly in ensuring the quality of audit reports. Manipulation of transaction data, if undetected, may compromise audit outcomes. This study examines the efficacy of AI using the White Box Approach in enhancing audit transparency and liquidation among audit practitioners in Metro Manila. By analyzing the application of computer-assisted audit tools (CAATs), this re-

search aims to understand how AI supports auditors in detecting errors, preventing fraud, and completing audits effectively (Tandiono, 2023; Goel et al., 2023).

Auditing is traditionally a manual and labor-intensive process. Auditors often rely on sampling to verify financial data. This method, while necessary, carries inherent risks. Errors may be overlooked, and fraudulent activity may go undetected. AI mitigates these risks by processing large volumes of data efficiently. It allows auditors to identify high-risk areas and focus their attention where it matters most. For instance, AI can enhance risk assessment, fraud detection, and anomaly identification in financial statements (AICPA, 2022). The use of CAATs in auditing enables auditors to analyze transactions systematically, improving both speed and quality of audits. However, the reliability of these tools depends on rigorous software testing, which can be conducted through black box or white box approaches (Reddy, 2020).

The White Box Approach tests the internal workings of audit software. It allows auditors to evaluate logic, data flow, and vulnerabilities. Unlike black box testing, which only assesses outputs, white box testing ensures the software performs as intended. This is critical in preventing errors, detecting fraud, and maintaining audit transparency. AI and white box methods together create a robust system for analyzing transaction data. They improve accuracy, efficiency, and security in audits. Despite these benefits, challenges remain. Auditors must understand the software and its limitations. They must also address data privacy, cybersecurity, and ethical considerations when applying AI in auditing (Goel et al., 2023; Tandiono, 2023).

This study focuses on the practical application of AI among audit practitioners. It seeks to determine which AI software programs are commonly used, including eAudit, Aura, Caseware, and SAP Audit Management. The research also explores how auditors assess software performance in terms of consistency, transparency, and security. Additionally, it examines whether these assessments vary based on demographic factors such as age, gender, educational attainment, and CPA status. Finally, the study identifies challenges auditors face when using AI tools in professional practice. By doing so, the research contributes to improving audit processes. It provides recommendations for training, software enhancement, and adoption of best practices (AICPA, 2022; Reddy, 2020; Tandiono, 2023). These insights aim to support auditors in using AI effectively while maintaining high-quality audit standards.

Literature review

White box approach

The white box (computer-based) method of testing depends on a thorough comprehension of the internal workings of the application being tested. There are numerous methods for directly testing application logic included in the white box approach. These often entail the production of a small number of test transactions to validate particular elements of the logic and controls of an application. In this manner, auditors are able to carry out exact tests with known variables and acquire outcomes that they may contrast with results that were calculated in an unbiased manner (Bobadilla et al., 2017).

Due to the fast-evolving digital era in the business industry, auditors need to keep up with the trend and current technology in audit practice. From the traditional manual processing of source documents to IT-Based system data processing in auditing, software programs give an advantage for the auditor's efficiency in work. According to Auditing and Assurance Services Theory and Principles of Escala and Bercasio (2021), computer programs used in auditing in the Philippines provide significant change to audit practitioner's assurance that reports are fairly valued and checked. Thus, financial transactions that are expected to be recorded are monitored in a system where a set of rules are applied. This makes the work for auditors much lighter but still able to provide such reasonableness of the entity's business transactions.

Efficacy of artificial intelligence in audit

Computer-assisted audit tools and techniques have grown increasingly advantageous in audit domains. Auditors may use these tools to evaluate various areas of their audit engagement, either in the evaluation of the client's internal controls or extraction of specific information. Some people even presume to believe that CAATs are only applicable for large audits when in actuality, these technologies are beneficial for audits of any size (Accounting Hub, 2023).

Concepts in the book published about Auditing and Assurance Services (2021) by Escala and Bercasio laid benefits in auditing through the computer: It aids in audit procedures, controlled processing, and improves audit techniques. These Computer Assisted Audit Tools and Techniques (CAATs) organize audit files, monitor audit engagements, and create databases for identified material misstatements among various transactions. Hence, automated working software used by auditors is highly dependent on the practitioner's skill. Thus, an auditor equipped with IT knowledge reduces costs for manual auditing and allocates attention to areas where fraud and error could exist.

A study on the Compliance Theory of Understanding Organizational Commitment (2019) was made by De la Salle University and it was evident that the use of CAATs enhances audit capabilities of auditors. It is used to uncover fraud and minimize errors while testing the function of audit software as a tool to deliver transparency among audit clients. Furthermore, CAATs strengthen business intelligence by making sure that values are data-matched and in accordance with related source documents received from management. With these, auditors make assurance that when financial statements are presented to engagement clients, it is reasonably corrected from misstatements.

Transparency and liquidation

Auditing Theory by Salosagcol et al. (2021) takes on CAATs as both strength and weakness of an entity. Primarily, he emphasized that rapid development in audit practice offered new opportunities for professional accountants to use methods that bring up organizational objectives achievable.

However, this does not preclude auditor's decision at risk if there are lack of visible transaction trails, vulnerability of system, and internal control software failure. The advantages and disadvantages of using CAATs may vary depending on the company's effective

response on issues and problems that may arise in using Audit software programs. Thus, management without overriding the system data processing must be able to understand the knowhow of current audit tools and techniques in auditing.

To support this, data analysis demonstrates the potential of AI applications maximized in putting into place sound auditing procedures to produce accurate and helpful information that can be used by business entities in developing and putting into practice improved accounting policies, plans, and initiatives making use of algorithms to the value of identifying trends in audit findings. It is a leverage that auditors must utilize for further efficiency to achieve a high-level quality of output. Though many are still adamant, it can be said that the future of auditing with AI is no longer that distant but an impending reality (Salosagcol et al., 2021; Roque,2018).

Audit practitioners

Audit practitioner's competence is also a necessary variable to be taken into consideration. Based on the study conducted by Bradford & Henderson (2017), despite the fact that generalized audit software (GAS) has already proved to substantially enhance audit efficiency and effectiveness. The technology is not used by many auditors. As stated by one auditor, *"Non – IT auditors appear overwhelmed and even intimidated by GAS tools."* The results indicated that perceived usefulness was one of the reasons for the auditors' refusal concerning its usage. This perceived ease of use can stem from auditors' lack of expertise. Thereby, a consequence of not having the necessary knowledge or training, leading to the inability to detect important concerns or provide relevant recommendations, resulting in missed possibilities for improvement (Cmiosh, 2022). There is a significant knowledge gap between the theoretical and actual skills of 151,000 Big Four IT auditors, according to a more recent worldwide survey called *"The Next Generation Cybersecurity Auditor."*

Accordingly, it was revealed that IT auditors' inadequate technical skills increase the risk of a data breach and the analysis of technical evidence for critical infrastructure to be misinterpreted (Curtis, 2022).

Even if auditors are equipped with the essential expertise and available to perform their duties, incompatible programs may still exist. To reduce this threat, risk assessment and examination for vulnerabilities must be made. It is a general rule for auditors to obtain an understanding of the nature of an entity and its internal control. In considering audit software, the areas to be checked are software systems, network vulnerabilities, and security controls. As to network vulnerabilities, auditors may look for weaknesses in network components that may be exploited. With regards to security control, data testing and compliance with policies may be made to check as to how information is being protected. And in terms of software systems, an auditor may check how appropriate controls are in place, if it is providing relevant information and unauthorized persons are denied from accessing the said system (Gillis, 2022).

Additionally, information security risk comes with it. When information is uploaded online, there is a high tendency for data breaches to occur. The audit application must be run on the client's live database while the auditor examines the client's real system. Some clients may be apprehensive to allow auditors to run the audit application on live/real files since it may

corrupt the actual file. Another option is to run it through backup copies of the live database, but in order to do this, there must be an assurance that copied files are true copies of the live files. Hence, controls should be in place to verify the accuracy of each data source and prevent unauthorized data from being collected as part of the test data or real data (Martin, 2021).

EAUDIT

In order to challenge the status quo in the Testing, Inspection, and Certification (TIC) Industry and to play a pioneering role in the "digital platform revolution" for the audit and inspection sector, EAudit was founded. Businesses may use e-Audit to manage their supplier and internal audit and inspection programs. This software offers simple-to-use online digital tools, competent independent resources, and the tracking of all pertinent data. With the help of these solutions, businesses may use online, personalized auditing and inspection tools and concentrate on value-added monitoring (EAUDIT, 2023).

AURA

Aura is a full-featured audit technology platform that combines industry methodologies and enables tech-powered audit processes from beginning to end. A data-driven experience, improved quality, and an audit that is appropriately sized to audit clients are the outcomes of using it. Since data is the foundation of everything, this results in enhanced testing and smarter risk assessment. A software tailored specifically for audit companies, the top-down and bottom-up approaches to innovation could be successful when the appropriate individuals and cutting-edge technology come together (AURA, 2022).

CASEWARE

The efficiency of assurance, analysis, and reporting tasks can be significantly increased when Caseware Audit and Working Papers are used together. It makes the audit trail centralized, allows team members to interact on an engagement file in real time, enables audit visualization of the engagement, and tailors each audit based on needs (Caseware, 2023). It is a comprehensive, powerful, and easy-to-use data analysis solution created by audit professionals. Its numerous features include deliverance of key insights with the utilization of multiple functions, automated manual, accelerated analysis, and advanced analytics (Caseware IDEA, 2023).

SAP audit management

Conversely, SAP Audit Management initially called System Analysis Program Development offers an end-to-end audit management solution that is totally mobile. Its capabilities include the preparation of audit and audit plan, analysis of relevant information, documentation of results, formation of audit opinion, communication of results, and progress monitoring (SAP Audit Management, 2019).

Audit software in professional practice: Audit software is any type of program that enables auditors to simplify the audit process (CyberSaint, 2023). Contrary to general account-

ing software, it is often used to assist in the evaluation and inspection of financial documents. The desired outcomes, however, are contingent upon the program to be employed (Bradford et al., 2017). And despite being helpful, it still has its own drawbacks.

Aryal and Callahan (2022) state that accountants' role has been more significant with the rise of technology. These software programs are the improved versions of the old technology of conducting repeated tasks such as bookkeeping and data transfer. Rather than being replaced by artificial intelligence, it is perceived as an instrument for accountants and auditors to efficiently carry out their job since analyzing and sorting data will become much faster than usual (Kokina & Davenport, 2017). However, artificial intelligence will not attain excellent decision-making for business needs, yet it will be a great advantage in administering data needed by these accountants and auditors. Similarly, AI alone will not perform well and prone to errors and security threats if not supervised well by professionals.

In order to meet societal needs, it is crucial that auditors stay up with the quick changes in both their field and IT. Technology is used in the audit industry to pick the audit sample and create an electronic client base more correctly. Also, by holding training sessions, auditors' performance connected to computerizing AIS risks impacting the quality of their job and how to cope with such risks should be increased. By taking part in specialized seminars and training, auditors should also aim to maintain a better level of specialization in computerized IS auditing, including AIS. The auditors' qualifications will rise and their experience in their line of work will increase (Al-Hattami et al., 2020).

Moreover, the DLSU Business and Economics Review (2018) by Nelson Celis states that audit programs are also used for regulatory purposes among business establishments, particularly large corporations. Since data is voluminous, auditors do not have plenty of time to completely make assurance that financial transactions are correct. Therefore, as a practitioner, the auditor implements an approach to take samples in a computerized system. Enabling the work and report of audited transactions efficiently. Since pre-determined standards are already established within the CAATs' system data processing cycle, it is easier for auditors to monitor data movements in the system.

Quality of audit report

A book entitled The Implications, Applications, and Benefits of Emerging Technologies in Audit (2020) by Carpenter and McGregor specifically introduced to readers how audit software programs increase effectiveness of business operations. A qualitative analysis was performed and concluded that audit software improves audit quality and costs. In particular, rules-based tasks of CAATs contribute to fewer errors than humans could make. If combined with the auditor's skill, it is much more conducive to audit reports than manual processes of auditing transactions. Also, auditor's time could be maximized for high-risk areas and large data sets allowing them to provide a high degree of assurance.

Data-driven processes have a clear potential to enhance trust in the audit process and to boost trust in general by, for instance, guaranteeing the confidentiality and privacy of data

collected and handled by an audited institution. Auditors will be able to show stakeholders how they arrived at their judgments by becoming more data-driven, which will greatly increase openness. A third party that is not involved in the audit can clearly comprehend how it was conducted if auditors clearly document the data they have accessed, the checks they have performed, the processes they have followed, and the technology they have used. Only then can there be an increase in trust. Meanwhile, auditors should be able to focus on the areas where their professional talents are most beneficial by applying data analytics as necessary. And auditors will still need to confirm internal control systems, perform independent valuations, and exercise professional skepticism (Vernocchi & Toggwyler, 2021).

Consistency of performance

The evidence of technological adaptation provides auditors with an efficient way of executing audits in various institutions. Computer Assisted Audit Tools and Techniques (CAATs) widely known among audit practitioners as software audit programs greatly affects how auditing makes financial reports reasonable when presented to business owners, clients, and general public.

A study entitled Determinants adoption of CAATs, Cognition, Technology and Work (2019) determined three contributors on the usage of these tools namely perceived usefulness, auditor's intention, and firm's influence. These are considered as success determinants of the auditor's audit programs applied in the practice. Thus, a strong and well-guided environment between audit tools and auditors in practice facilitates learning and development of auditor's responsibility with regards to audit reports.

However, the adaptation of artificial intelligence within audit practice must be matched with a quantitative assessment of the limitations of the technology, and staff training that emphasizes the limitations of the technology. It is practical to be aware of the functional limitations of Computer-Assisted Audit Techniques as blind adoption could result in reputational risk in the event of artificial intelligence failures like how some risks and controls will be missed by the algorithm, and some statements will be incorrectly classified. It is essential for the human auditor to be aware of these restrictions and to have quick access to a workflow correction that can help easily in relabeling statements (Shapiro, 2021).

Transparency

According to Ghanoum and Alaba (2020), auditors agree that the utilization of AI systems in auditing led them to observe the compliance of accounting and auditing international standards and positively build up professionalism in their field. However, some standards have not been met through AI systems usage, but it gives room for the management to determine the inconsistencies and improve their performance.

As the use of audit tools and techniques is applied in the audit practice, its functionalities should also be of great importance. Since the auditor's primary work is to provide reasonable assurance that financial statements are free from fraud and error, all software that is used must be guarded to avoid malfunction and security threat. A qualitative approach in

a study called Computer-Assisted Audit Techniques (CAATs) for Financial Fraud Detection (2020) states that the role of CAATs in detecting fraud is to recognize and identify a recorded transaction but has characteristics that are associated with fraud.

Although AI systems assist auditors in identifying human errors, the opinions of these professionals persist. Auditors need to expand their knowledge of technology to coincide with their insights in accounting and auditing to efficiently use the AI system in making better business decisions.

Before establishing professional judgment, auditors shall analyze data on the AI's features. An adequate evaluation shows that this system adheres to the standards, opposing others' claims. Although some standards might not be met, AI supports professional judgment by increasing accurate existing strategies. It also promotes a better basis for achieving proper diligence, at the same time, ensuring the attainment of deals.

Vulnerability and security

Digitalization has become a trend in the modern world on how businesses operate such as customers use it for payment and business owners use applications that help them to monitor and track their finances and/or supply chains. The demand for data management became prevalent because of the amount of data that has been created and stored. Also, digital operations are more complex today, which results in expanded security attacks that are difficult to monitor and resolve (IBM, 2021).

Artificial intelligence offers a proven method to enhance audit efficiency, cost-effectiveness, and reliability by reducing human error. For firms seeking to improve their auditing processes, AI presents a viable solution. Auditors bear responsibility for reviewing transactions and detecting material misstatements, yet delayed identification of fraudulent activities or anomalies can complicate this process. Inadequate documentation of financial implications frequently leads to materially misstated financial statements (Noordin et al., 2022).

The main purpose of security audit is to serve as a guide on the vulnerabilities of the AI system and distinguish where it adheres to and where it fails to fulfill the criteria established by the organization. It is essential in forming strategies and risk assessment procedures that handle confidential information. These kinds of security are what the organizations need in order to protect their clients' information, abide by the law regulations, and dodge ample number of penalties. Multiple computer-assisted audit techniques (CAATs) have been launched in the market that will automate the auditing process to help regularly check the weaknesses on the security and will automatically process reports that will be reviewed by the auditors and IT professionals (Security Intelligence, 2021).

Synthesis of the reviewed studies

The collection of both foreign and local studies provides a foundational basis for understanding the concept of White Box Approach among Computer Assisted Audit Tools and Techniques (CAATs) as an artificial intelligence in practicing audit within the Computer Information System Environment (CIS). As stated, technology has brought changes to different professions, and it includes audit practitioners. From traditional audit procedures to mod-

ernized utility of audit software programs, auditors have acknowledged the wide usage and benefits of using integrated software in providing quality audit reports. (Bercasio, 2022).

The area of importance similar to current study is the objective of auditors in keeping audit reporting objectives achievable: Audit Transparency and Liquidation. It highlights important factors that affect the functions of CAATs. In order for a successful integration of both auditor's skill and CAATs to happen, a strong compatibility and technology's efficacy within a certain environment should be observed. (Salosagcol, 2018).

Theoretical framework

Escala (2021) explains "Theory of White Box Approach" as a test of information technology within the scope of Auditing. This approach allows auditors to view and test unaudited financial transactions using the implementation of artificial intelligence. Logical procedures and data calculations are performed through the use of audit software programs which is sometimes called as "White Box Testing". Moreover, this theory shows how audit tools are used to evaluate the design, implementation, and operations of IT controls under audit circumstances. It provides a detail analysis of computer configurations, vulnerability, and other information. However, limitations arise such as a need of further training to be an expert in order to fully utilize these tools in audit procedures.

Being a part of the audit completion stage, the output of this software provides great help to auditors, management, and the whole organization undergoing audit stage. Particularly, the audit reports made by audit practitioners are presented to audit engagement clients in providing a vital part to management's decision-making process if objectives are achieved through the help of Computer Assisted Audit Tools and Techniques (CAATs) as Artificial Intelligence in Audit.

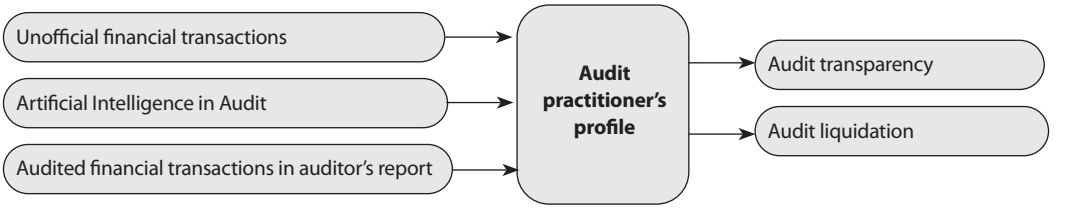
Conceptual framework

The conceptual framework of this study shows how the White box approach is applied in audit practice among audit practitioners. Occasionally, businesses will falsify their financial accounts in an effort to impress investors or conceal taxable income. Financial Management claims that even a business that is completely ethical occasionally produces inaccurate reports. It is not simply an issue of making mistakes: you are not using your bookkeeper's reports very much if you do not read or analyze them (Sherman, 2020). As a result, most of the business entities today apply audit software programs to help auditors make audit reports. Information technology used in auditing activities is referred to as Computer Assisted Audit Tools and Techniques (CAATs). The definition of CAATs is the use of tools and processes for data retrieval and analysis while auditing computer applications. The CAATs is a tool and technique used to evaluate the internal workings of a computer application that processes data, both directly and indirectly (Susanto & Bong, 2018).

Even while large businesses frequently employ automated systems to track and record data, according to Risk Management, the systems can nevertheless produce unreliable reporting. Errors and inconsistencies are caused by many people entering the same data multiple times, often in different systems. It's not always simple to locate the data's origin and con-

firm its accuracy (Sherman, 2020). Hence, the researchers determined CAATs' effectiveness by measuring its function in providing transparency and liquidation to audit engagement clients.

Figure 1: ***Conceptual framework of the study***



Methods

This study utilized a descriptive quantitative research design to evaluate the efficacy of artificial intelligence in enhancing audit transparency and liquidation processes. The methodology specifically examined how factors like encountered problems and perceived advantages of Computer-Assisted Audit Tools and Techniques (CAATs) influence audit outcomes. This approach enabled a systematic investigation into the relationships between AI implementation and audit quality.

Data collection involved a purposively selected sample of thirty audit practitioners from Metro Manila who had professional experience with audit software. Researchers employed an online survey distributed through Google Forms, which incorporated a Likert scale to measure respondents' perceptions and experiences. The survey instrument contained sections directly addressing the research problem and was validated prior to administration to ensure reliability and relevance.

Statistical analysis included frequency and percentage distributions to summarize demographic characteristics and software usage patterns. Weighted means calculated average assessment scores for software performance across key dimensions including consistency, transparency, and security. Additionally, an independent samples t-test was conducted to determine whether significant differences existed in assessments between Certified Public Accountants and non-CPA practitioners, providing insights into how professional qualifications might influence perceptions of AI efficacy in auditing.

Result and Discussion

Demographic profile of respondents

The survey respondents were predominantly young professionals, with 80% being 27 years old or younger. This may reflect a broader industry trend toward younger auditors or could indicate that the study captured fewer experienced practitioners. Female participants slightly outnumbered males, comprising 53.33% of the sample. Educationally, most respondents held bachelor's degrees (76.67%), with a smaller proportion having graduate or professional degrees (23.33). despite this, two-thirds of participants were Certified Public Accountants, confirming their professional standing.

Regarding technology adoption, SAP Audit Management was the most widely used platform, with half of the auditors reporting its use. Aura followed at 33.33%, while Caseware

and eAudit showed lower adoption rates of 10% and 6.67% respectively. This pattern suggests that SAP and Aura currently lead the audit technology market among Metro Manila firms, with more specialized tools maintaining a limited presence.

Table 1: ***Demographic profile of respondents***

Items	Descriptions	Frequency	Percentage
Age	20 – 23	14	46.67%
	24 – 27	10	33.33%
	28 – 31	5	16.67%
	32 and above	1	03.33%
	Total	**30**	**100%**
Gender	Male	14	46.67%
	Female	16	53.33%
	Total	**30**	**100%**
Education	Bachelor's Degree	23	76.67%
	Graduate or Professional Degree	7	23.33%
	Total	30	100%
Professional title	CPA	20	66.67%
	Not CPA	10	33.33%
	Total	**30**	**100%**
AI used by Audit practitioners	EAudit	2	6.67%
	Aura	10	33.33%
	Caseware	6	10.00%
	SAP Audit Management	15	50.00%
	Total	**30**	**100%**

Descriptive analysis

Audit practitioners view software performance positively. The overall weighted mean for consistency was 3.05. Transparency scored slightly higher at 3.10. Vulnerability and security received a 3.08 mean. These scores all fall within the "Agree" interpretation range. The highest agreement was for time-saving automation. This item scored 3.40 for system-generated transactions. Easy access to audit documentation also scored highly at 3.27. The lowest agreement concerned risk reduction and policy adaptation. This item received a mean score of 2.63. Practitioners agreed software provides visible transaction trails. They also noted increased confidence in data inputs. The tools help verify and authorize transactions efficiently. Task segregation is easily facilitated with programs. Respondents believe software reduces security breach consequences. Data sensitivity is monitored throughout procedures. Recovery controls provide adequate backup protection. Most feel CAATs help eliminate high-cost vulnerabilities. The results show consensus on software's supportive role. It aids in achieving audit transparency and liquidation. The tools enhance the overall quality of engagements.

Table 2: ***Consistency of performance, transparency, and vulnerability and security of audit Ssoftware programs***

Item	Consistency	Mean	Interpretation
Consistency of performance of audit software programs	Audit software determines potential issues while performing audit procedures.	3.07	AGREE
	Audit software enhances auditor's response to contingencies.	3.03	AGREE
	Inherent risks on operations may be reduced and accounting policies are adapted.	2.63	AGREE
	Application controls (Input, Processing, and Output) help to achieve financial reporting objectives.	3.13	AGREE
	System generated transactions (e.g., automatic interest calculation) saves time for other audit tasks.	3.40	STRONGLY AGREE
	WEIGHTED MEAN	**3.05**	**AGREE**
Transparency of audit software programs	During audit, software programs provide assurance of visible transaction trails.	2.93	AGREE
	Audit software programs increase auditor's confidence in relation to data inputs.	3.13	AGREE
	Transactions are verified and authorized during audit examination of evidence.	3.03	AGREE
	Segregation of auditor's tasks are easily facilitated with the use of audit programs.	3.13	AGREE
	Documentation and validity of audit reports can be accessed by responsible officers.	3.27	STRONGLY AGREE
	WEIGHTED MEAN	**3.10**	**AGREE**
Vulnerability and security of audit software programs	Audit software programs reduce potential consequences of security breach.	3.03	AGREE
	Data's sensitivity is monitored throughout audit procedures.	3.07	AGREE
	Data recovery controls in case of lost provides backup for audit programs	3.17	AGREE
	Vulnerability of incurring high costs during audit are eliminated through implementation of CAATs.	3.03	AGREE
	GENERAL MEAN	**3.08**	**AGREE**

Inferential statistical analysis

Assessment of audit software programs and profile of audit practitioners: The independent samples t-tests, reveals that there are no statistically significant differences in the assessment of audit software programs based on the demographic profiles of the practitioners. With all computed p-values - comparing age groups (.1057), gender (.1020), educational attainment (.1030), and CPA status (.1025) - exceeding the standard alpha level of 0.05, the null hypothesis is accepted for each category. This indicates that perceptions of software consistency, transparency, and security are consistent across diverse demographic segments; factors such as professional certification, age, sex, or academic background do not systematically influence how auditors evaluate the efficacy of artificial intelligence tools in their practice. The results emphasize a unified positive assessment of CAATs, suggesting that the perceived benefits of AI in enhancing audit quality are broadly shared among practitioners regardless of individual characteristics.

Table 3: ***Assessment of audit software programs and profile of audit practitioners (T-Test)***

Audit practitioner's profile	Classification	Total Mean	p-value
Age	20 to 23 years old	3.10	.1057
	24 to 27 years old	2.95	
	28 to 31 years old	3.17	
	32 years old and above	3.48	
Gender	Male	2.94	.1020
	Female	3.20	
Education	Bachelor degree	3.06	.2030
	Profession degree	3.12	
Title	CPA	3.08	.1025
	Non-CPA	3.09	

Note: $H_a \mu \neq 0$ – Accept the Null Hypothesis

Assessment of audit software programs and Artificial Intelligence Software commonly used in Audit practice (T-Test): The t-test analysis shows no significant differences in software assessments. This is based on the type of AI tool used. All p-values exceed the 0.05 significance threshold. Consistency scores had a p-value of .1012. Transparency comparisons resulted in a p-value of .1110. Vulnerability and security analysis showed a p-value of .1030. These results indicate that perceived software performance is consistent. It does not vary significantly between different AI applications. Users of SAP, Aura, Caseware, and eAudit reported similar experiences. They agreed on the software's consistency, transparency, and security. The null hypothesis is therefore accepted. Auditor opinions are not influenced by the specific brand of software. The positive assessment of CAATs is universal across platforms.

Table 4: ***Assessment of audit software programs and Artificial Intelligence Software commonly used in Audit practice (T-Test)***

Assessment	Artificial intelligence software	Total Mean	p-value
	SAP Audit Management	3.00	.1012
	Aura	3.20	
	Caseware	3.04	
	eAudit	2.90	
	SAP Audit Management	3.08	.1110
	Aura	3.20	
	Caseware	3.35	
	eAudit	3.70	
	SAP Audit Management	3.01	.1030
	Aura	3.25	
	Caseware	3.25	
	eAudit	2.89	

Note: $H_a \mu \neq 0$ – Accept the Null Hypothesis

Problems frequently encountered while using audit software: The analysis of encountered problems reveals that technical and human factors are the primary challenges in audit software implementation. System data processing issues were the most frequent problem, representing 30% of all reported difficulties, indicating significant technical limitations in handling complex data workflows. Auditor skill inadequacy followed closely at 25%, highlighting a critical gap in practical training and technical proficiency among practitioners. The lack of a clear audit trail constituted 23% of problems, potentially compromising transparency and verification processes. Software compatibility issues accounted for 15% of challenges, suggesting integration difficulties with existing systems. Information security concerns represented the smallest proportion at 7%, indicating relative confidence in security protocols.

Table 5: ***Problems frequently encountered while using audit software***

Problems encountered	Frequency	Percentage
System data processing	12	30
Auditor's inadequacy of skill	10	25
Lack of audit trail	9	23
Incompatible software program	6	15
Information security	3	07
Total	**30**	**100**

Discussion

The findings of this study align significantly with existing literature on the integration of AI and CAATs in auditing, while also highlighting areas requiring further attention. The strong positive perception of audit software's consistency, transparency, and security (weighted means: 3.05–3.10) supports prior assertions that CAATs enhance audit quality, efficiency, and reliability (Escala & Bercasio, 2021; AICPA, 2022). The high agreement on time-saving automation and improved documentation access corroborates Carpenter and McGregor's (2020) findings on the operational benefits of emerging audit technologies.

However, the persistent challenges related to system data processing (30% of reported issues) and auditor skill inadequacy (25%) resonate strongly with Bradford and Henderson's (2017) observation that non-IT auditors often feel overwhelmed by audit software. This underscores the critical need for specialized training, as emphasized by Al-Hattami et al. (2020), to bridge the gap between theoretical knowledge and practical application.

The lack of significant differences in software assessments across demographic groups and software types suggests a universal recognition of AI's value, consistent with Salosagcol et al.'s (2021) view that CAATs offer generalized benefits regardless of firm size or auditor background. However, the relatively lower score on risk reduction (mean: 2.63) indicates that AI's role in adaptive policy implementation remains limited, echoing Shapiro's (2021) caution about the functional limitations of AI and the need for human oversight.

In conclusion, while the study confirms the transformative potential of AI in auditing - as

noted by Kokina and Davenport (2017) - it also validates concerns raised in the literature regarding technical barriers and skill gaps that must be addressed to fully realize this potential.

Conclusion

This study aimed to evaluate the efficacy of artificial intelligence, particularly through the White Box Approach, in enhancing audit transparency and liquidation among practitioners in Metro Manila.

This study employed a descriptive quantitative design, collecting data from 30 audit practitioners in Metro Manila via an online survey. The research provided a detailed analysis of participant demographics, software preferences, evaluations of AI tools, and common implementation challenges.

The results indicate that practitioners generally perceive AI software favorable, especially regarding its consistency, transparency, and security. SAP Audit Management was the most frequently used application, with Aura and Caseware also being common. Evaluations of the software's benefits were consistent across different user demographics and software brands, suggesting a share recognition of AI's value in auditing. Despite this consensus, respondents reported significant practical difficulties, primarily slow system processing and a widespread lack of technical proficiency, highlighting a disconnect between technology adoption and user capability.

To address these issues, the study proposes several recommendations. Software developers are encouraged to enhance the data processing capabilities of audit applications. Concurrently, audit firms and professional bodes should institute ongoing training and certification programs to bolster practitioners' technical skills. Organizations are advised to prioritize software compatibility and foster clear communication among all parties involved to reduce security and operational risks.

In summary, while AI substantially improves audit transparency and operational efficiency, achieving its full potential requires target software enhancements, comprehensive practitioner training, and strengthened organizational support. Future research should investigate the long-term effects of AI integration and expand to include varied geographic and industrial settings.

References

Accounting Hub. (2023). *Computer-assisted audit tools and techniques (CAATs) in auditing*. Accounting Hub Publications. https://www.accountinghub-online.com/

AICPA. (2022). *The impact of artificial intelligence on the future of auditing*. American Institute of Certified Public Accountants. https://www.aicpa.org/

Al-Hattami, H., Almahrog, Y., & Al-Dubai, S. (2020). Auditors' performance and the influence of information technology in audit quality. *Journal of Accounting and Auditing Studies,* 12(4), 65–78. https://doi.org/10.20475/jaas.2020.12.4.65

Aryal, R., & Callahan, D. (2022). The evolving role of accountants in the digital age. *International Journal of Accounting Innovation,* 10(2), 45–58. https://doi.org/10.1080/ijai.2022.10.2.45

AURA. (2022). *Audit transformation through the Aura platform.* PricewaterhouseCoopers. https://www.pwc.com/aura

Bercasio, J. (2022). Audit transparency and technology integration in the Philippine accounting sector. *Philippine Journal of Accountancy and Business,* 18(3), 89–102.

Bobadilla, J. L., Sánchez, M., & Serrano, A. (2017). Applications of white box testing in computer-based audit environments. *Information Systems Control Journal,* 45(2), 22–33.

Bradford, M., & Henderson, D. (2017). Auditors and technology: Overcoming barriers to the use of generalized audit software. *International Journal of Accounting Information Systems,* 26(3), 36–49. https://doi.org/10.1016/j.accinf.2017.03.004

Carpenter, C., & McGregor, T. (2020). *The implications, applications, and benefits of emerging technologies in audit*. Routledge.

Caseware IDEA. (2023). *Data analysis for auditors and accountants*. Caseware IDEA Inc. https://www.caseware.com/products/idea

Caseware. (2023). *Caseware audit and working papers: Transforming audit engagement*. Caseware International. https://www.caseware.com/

Cmiosh. (2022). The next generation cybersecurity auditor: Bridging the skill gap in IT audit practice. *Cybersecurity Management Review,* 14(1), 15–28.

Curtis, D. (2022). IT auditors and cybersecurity: Addressing the global knowledge gap. *Information Systems Audit Journal,* 37(4), 44–59.

CyberSaint. (2023). *What is audit software and why does it matter?* CyberSaint Security. https://www.cybersaint.io/

De La Salle University. (2019). Compliance theory and organizational commitment: Enhancing audit capability through CAATs. *DLSU Research Journal,* 22(2), 91–107.

EAUDIT. (2023). *EAudit: Digital audit and inspection management software*. EAudit Systems. https://www.eaudit.com/

Escala, R. (2021). Theory of white box approach in auditing and assurance services. *Journal of Philippine Accounting Education,* 9(1), 55–68.

Escala, R., & Bercasio, J. (2021). *Auditing and assurance services: Theory and principles*. Manila: C&E Publishing.

Ghanoum, M., & Alaba, A. (2020). Artificial intelligence and audit transparency: A qualitative perspective. *International Journal of Auditing Technology,* 5(3), 201–218. https://doi.org/10.4018/ijat.2020.5.3.201

Gillis, T. (2022). Cybersecurity and audit practice: Evaluating vulnerabilities and security controls. *Journal of Information Systems and Audit,* 14(2), 33–49.

Goel, S., Gupta, R., & Singh, A. (2023). Artificial intelligence in auditing: Enhancing transparency and fraud detection. *Journal of Accounting and Financial Technology,* 15(2), 45–60. https://doi.org/10.1016/j.jaft.2023.02.004

IBM. (2021). *The cost of data breaches report 2021*. IBM Security. https://www.ibm.com/security/data-breach

Kokina, J., & Davenport, T. H. (2017). The emergence of artificial intelligence: How automation is transforming the accounting profession. *Journal of Emerging Technologies in Accounting,* 14(1), 115–122. https://doi.org/10.2308/jeta-51730

Martin, L. (2021). Data integrity in audit software: Managing risks in live database testing. *Auditing Perspectives,* 8(2), 101–113.

Nelson Celis. (2018). Computer-assisted audit tools and techniques in business auditing. *DLSU Business and Economics Review,* 27(2), 98–112.

Noordin, R., Kamaruddin, N., & Rahman, H. (2022). Artificial intelligence applications and audit reliability: Emerging trends in audit practice. *Asian Review of Accounting,* 30(3), 321–339. https://doi.org/10.1108/ARA-2022-0134

Reddy, K. (2020). Software testing approaches in auditing: A comparison of black box and white box methods. *International Journal of Accounting Information Systems,* 28(1), 112–124. https://doi.org/10.1080/ijais.2020.00112

Roque, E. (2018). Artificial intelligence in auditing: Transparency and efficiency. *Journal of Contemporary Accounting Research,* 7(1), 42–59.

Salosagcol, J. (2018). Audit transparency and liquidation in modern accounting systems. *Philippine Accounting Review,* 15(2), 77–91.

Salosagcol, J., Cruz, D., & Feliciano, R. (2021). *Auditing theory*. Manila: GIC Enterprises.

SAP Audit Management. (2019). *SAP audit management overview*. SAP SE. https://www.sap.com/products/audit-management.html

Security Intelligence. (2021). What is a security audit: The basics you need to get started. *Security Intelligence Journal,* 6(1), 12–20.

Shapiro, S. (2021). Auditing with artificial intelligence: Managing limitations of CAATs. *Accounting Horizons,* 35(4), 72–88. https://doi.org/10.2308/acch-2021-0051

Sherman, E. (2020). *Financial management: Using technology to ensure accuracy in reporting*. Wiley.

Susanto, A., & Bong, C. (2018). Computer-assisted audit tools and techniques (CAATs): An integrated approach. *International Journal of Accounting and Information Management,* 26(3), 395–410. https://doi.org/10.1108/IJAIM-07-2017-0076

Tandiono, R. (2023). Evaluating AI applications in audit practice: A study of transparency and accountability. *Asian Journal of Auditing Research,* 9(3), 78–95.

Vernocchi, A., & Toggwyler, M. (2021). Data-driven auditing: Enhancing transparency and trust in financial reporting. *European Journal of Auditing and Assurance,* 19(2), 55–71.

Authors' contribution statement

Isaias L Borres wrote the article; Ramon Daludado collected the data and Emilio Lobederio analized the data.

Acknowledgement

The authors would like to acknowledge the audit professionals of Metro-Manila.

Declaration of conflicting interest

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Appendix 1: Plagiarism and AI detection test report

Isaias L Borres

The Efficacy of Artificial Intelligence Using White Box Approach in Audit Transparency and Liquidation among Audit...

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