

**The Effect of Digital Asset Recognition on The Accuracy of Auditors’
Opinion: An Experimental Study**

Samar Fathy Abd El-Gawad Soliman*

(*)**Samar Fathy Abd El-Gawad Soliman** :Lecturer Assistant in Egyptian Institute of
Alexandria Academy for Management and Accounting

Email: samar.nawar@eia.edu.eg

Abstract

The purpose of this paper is to analyze and examine the effect of digital asset recognition on the accuracy of auditors' unqualified and qualified opinion on financial statements. **To achieve this purpose**, the research will address the definition of digital assets, digital assets from a financial accounting perspective, the accuracy of auditors' opinion, and analysis of the effect of digital asset recognition on the accuracy of auditors' opinion.

To test the research hypotheses, the researcher will depend on a 1+ (2*1) experiment. The sample used in the current study consists of 84 auditors selected from accounting offices in Egypt. **The research concludes that** the recognition of digital assets do not have a significant effect on the accuracy of Egyptian auditors' unqualified opinion on financial statements, but has a significant effect on the accuracy of Egyptian auditors' qualified opinion on financial statements.

Keywords: Digital asset; Accuracy of Auditors' Opinion; Unqualified and Qualified opinion.

أثر الاعتراف بالأصول الرقمية على دقة رأي مراقبي الحسابات: دراسة تجريبية

يهدف البحث إلى دراسة واختبار تأثير الاعتراف بالأصول الرقمية على دقة الرأي النظيف والمتحفظ لمراقب الحسابات في القوائم المالية. وتتمثل حدود البحث في دراسة واختبار تأثير الاعتراف بالأصول الرقمية (فقط) على دقة الرأي النظيف والمتحفظ لمراقب الحسابات في القوائم المالية. لذا تم استبعاد المتغيرات المستقلة الأخرى بخلاف الاعتراف بالأصول الرقمية مثل سمعة مراقب الحسابات وخبرته، وحجم المكتب، كما تم استبعاد الأنواع الأخرى لرأي مراقب الحسابات مثل الرأي النظيف مع لفت الانتباه والرأي المعاكس. سيعتمد الباحث على دراسة تجريبية. يتكون مجتمع الدراسة من مراقبي الحسابات العاملين بمكاتب المحاسبة بمصر. وبلغ عدد مراقبي حسابات العينة ٨٤ مراقب حسابات. وقد توصل البحث إلى أن الاعتراف بالأصول الرقمية لا يؤثر معنوياً على دقة الرأي النظيف لمراقب الحسابات، بينما يؤثر معنوياً على دقة الرأي المتحفظ.

1- Introduction:

Digital assets are one of the most important applications of blockchain technology. "Digital assets" means, literally, "assets that are available in digital format and have a monetary value." In the dictionary, "digital assets" are any data gathered, stored, or organized in a digital form, such as digital currencies, digital images, videos, etc. (Farooqui et al., 2022). Recent years have seen an increasing growth in the number and types of digital assets (Jackson & Luu, 2023). Digital assets are categorised into two types; digital currencies/crypto currencies/ coins, and digital tokens (Jackson & Luu, 2023; PWC, 2022).

Moreover, digital assets affect the accuracy of auditors' opinion. Hsieh (2021) indicated that the different nature of crypto assets makes it difficult for auditors to obtain sufficient and appropriate audit evidence for audits of crypto assets, which negatively affects the auditor's ability to detect material misstatements and the accuracy of his opinion. Also, In this context, the Harrast et al., (2022) study studied the risks associated with cryptocurrencies and concluded that some of these risks have a higher probability of occurrence or impact than others. For example, this study indicated that possessing a private key by unauthorized persons has the greatest impact on financial statements because a private key is a secret number known only to the person who created it and allows its holder to access cryptocurrencies on the blockchain. Losing or Stealing this key could prevent access to or use of the cryptocurrency, which poses a significant risk and results in staggering losses for the company. Several studies (Susila, 2024; Teichmann & Falker, 2021; Mabunda, 2018) indicated that cryptocurrencies facilitate financial crimes such as money laundering, terrorist financing, and corruption because they are not supervised by a trusted official body, in addition to allowing anonymity.

Therefore, **the research problem** can be expressed in how to answer the following question practically; Does digital asset recognition significantly affect the accuracy of auditors' unqualified and qualified opinion compared with non-recognition?

The objective of this research is to analyze and examine the effect of digital asset recognition on the accuracy of auditors' unqualified and qualified opinion on financial statements.

The importance of the research can be traced back to its alignment with the research that focused on improving the accuracy of auditors' opinion. In addition, there is a significant scarcity of Egyptian research concerned with studying digital asset recognition and its impact on the accuracy of auditors' unqualified and qualified opinion. **Despite the many research motives**, the most important of them is narrowing the research gap in this field, in addition to finding practical evidence about the existence of the relationship between digital asset recognition and the accuracy of auditors' unqualified and qualified opinion.

The limitation of the research is to study and test the effect of digital asset (only) recognition on the accuracy of **auditors' unqualified and qualified opinion on financial statements**. Therefore, the other types of opinion such as unqualified opinion with additional paragraph, Adverse Opinion and Disclaimer of Opinion are beyond the scope of the research. In addition, the other variables that affect the accuracy of auditors' opinion (such as reputation, continuing professional education, rotation, and expertise) are beyond the scope of the research.

The remainder of this paper will be organized as follows: Section 2 discusses prior literature related to the definition of digital assets, digital assets from a financial accounting perspective, and the effect of digital asset recognition on the accuracy of auditors' opinion and derives the hypotheses. Section 3 discusses the research methodology and design. Section 4 presents the experimental results and conclusion.

2- Literature review and hypotheses development:

2-1 Definition of Digital Assets:

With regard to the definition of digital assets from a professional perspective, the European Financial Reporting Advisory Group (EFRAG) has defined digital assets as "a digital representation of value or contractual rights that is created, transmitted and stored on distributed ledger technology (DLT), such as blockchain" (IASB, 2019). **This definition is agree with the Securities and Exchange Commission's (SEC, 2019)**, where SEC has described a digital asset as "an asset that is issued and transferred using blockchain technology, such as virtual currencies, coins, and tokens (Guseva, 2020). **In the same context**, PWC (2019) defined cryptographic

assets as a transferable digital representation designed in a way that prohibits their copying. It is also considered a means of exchange similar to cash to provide access to blockchain-based products or services.

Regarding the definition of digital assets according to academic studies, Jackson & Luu (2023) defined it as anything that is digitally stored, uniquely identifiable, and can be used by organizations to generate value. **In the same context,** Farooqui et al. (2022) and AUDU (2023) defined digital assets as any data that is gathered, stored, or organized in digital form, such as digital documents, movies, audio content, and any other form that is stored electronically on computers, just like cryptocurrencies.

Digital assets are categorised into two types; Digital currencies/Crypto currencies/Coins and digital tokens (Jackson & Luu, 2023; PWC, 2022). (A) **Digital currencies** are a type of virtual digital currencies that act as a medium of exchange via the Internet, has no physical form, stored electronically in the blockchain (Jackson & Luu, 2023; PWC, 2022; Thornton, 2018; Thornton, 2016). (B) **Tokens**, on the other hand, could be further categorized based on their functionality and characteristics into (1) asset-backed tokens, (2) utility tokens, and (3) security tokens (Jackson & Luu, 2023; Hsieh, 2021; PwC, 2019).

2-2 Digital Assets from a Financial Accounting Perspective:

2-2-1 Accounting for Digital Assets as Cash:

To determine whether digital assets can be classified as cash, you must know whether they meet the definition of cash according to IFRS. The International Accounting Standard IAS7 defines cash as “cash on hand and demand deposits.” International Accounting Standard IAS 32 (Financial Instruments: Presentation) paragraph AG3 also indicated that currency (cash) is “a financial asset because it represents a medium of exchange, and therefore it is the basis for measuring all transactions and recognizing them in the financial statements.

2-2-2 Accounting for Digital Assets as Inventory:

International Accounting Standard IAS 2, Paragraph No. 6, defines inventory as assets (a) held for sale within the ordinary activity of the entity, (b) in the production stage to become salable, or (c) in the form of materials or supplies to be consumed in the production process or rendering of services (Abojeib, 2018). IAS 38 also clarifies that it excludes from its scope intangible assets that are held by an entity for sale in the ordinary course of

business, and such intangible assets are therefore classified as inventory under IAS 2 (IASB, 2019).

2-2-3 Accounting for Digital Assets as Financial Assets:

International Accounting Standard IAS 32, paragraph No. 11, defines a financial instrument as “any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.” The standard also defined a financial asset as any asset that is either (a) cash, (b) an equity instrument of another entity, or (c) a contractual right to receive cash or another financial asset from another entity or to exchange financial assets or financial liabilities with another entity on terms that are more beneficial to the entity, or (d) a contract that will or may be settled in the entity’s own equity instruments. According to this definition, the Australian Accounting Standards Board believes that cryptocurrencies are not a financial instrument, because they do not meet the definition of a financial instrument (AASB, 2018).

2-2-4 Accounting for Digital Assets as an Intangible Assets:

The International Accounting Standard IAS38 defines an intangible asset as “an asset of an identifiable non-monetary nature that does not have a physical existence” (IASB, 1998). In light of this definition, there are three conditions for an asset to be recognized as an intangible asset, which are: (1) identifiable, that is, it can be separated from the entity and sold, transferred, exchanged, or rented; (2) non-monetary; and (3) does not have a physical existence. Accordingly, digital assets meet the definition of intangible assets because they are non-monetary items according to the IAS32 and IAS7 standards. They are also identifiable in that they can be sold and exchanged, and they lack physical existence (AASB, 2018; PWC, 2016).

The researcher concludes from the previous studies that there is agreement that digital assets meet the definition of an asset, but the difference appears in the classification of this asset: whether it can be considered cash, a financial asset, an inventory, or an intangible asset. It is clear from the above that the closest classification of digital assets is intangible assets.

2-3 Accuracy of Auditors' Opinion:

The audit report is the final stage of the audit process, in which the auditor assesses the fairness of financial statements based on financial accounting standards and issues his opinion. Users of financial statements, such as government entities, shareholders, etc., depend on the results of audit reports

to make decisions (Zakaria et al., 2021; Arens et al., 2017). Accuracy of auditors' opinion refers to the auditor's opinion based on sound judgment in light of compliance with the relevant auditing standards, the Code of Ethics, and professional conduct (El Araby, 2022).

According to (Krishna & Nadya, 2020; Reschiwati et al., 2019; Dmytrenko, 2019; ISA 700; ISA 701; ISA 705; ISA 706; ISA 570), audit opinion consists of five types, namely: (1) Unqualified Opinion; (2) Unqualified Opinion with additional paragraph; (3) Qualified Opinion; (4) Adverse Opinion; (5) Disclaimer of Opinion. **In the current research**, we will focus on unqualified opinion and qualified opinion because it is difficult for auditors to obtain sufficient and appropriate audit evidence for audits of digital assets, which negatively affects the auditor's ability to detect material misstatements and then the accuracy of unqualified and qualified opinion, specifically. These difficulties make these two types of opinions more relevant when studying the effects of digital assets on audit outcomes.

(1) Unqualified Opinion:

Regarding ISA 700, the auditor issues an unqualified opinion if the following conditions are met:

- 1- The financial statements are prepared, in all material respects, in accordance with the applicable financial reporting framework.
- 2- whether sufficient appropriate audit evidence has been obtained.
- 3- If the scope of the audit process includes all of the entity's financial statements and disclosure notes.
- 4- If the auditor meets all general standards.

(2) Qualified Opinion:

The auditor should express a qualified opinion if:

- A. The auditor obtained sufficient appropriate audit evidence that there are material misstatements but not pervasive in the financial statements.
- B. There are no material restrictions on obtaining evidence.

2-4 The Effect of Digital Asset Recognition on Accuracy of Auditors' Opinion:

Hsieh (2021) indicated that the different nature of crypto assets makes it difficult for auditors to obtain sufficient and appropriate audit evidence for audits of crypto assets, which negatively affects the auditor's ability to detect material misstatements and the accuracy of unqualified and qualified opinion. Also, In this context, the Harrast et al., (2022) study studied the

risks associated with cryptocurrencies and concluded that some of these risks have a higher probability of occurrence or impact than others. For example, the study indicated that possessing a private key by unauthorized persons has the greatest impact on financial statements because a private key is a secret number known only to the person who created it and allows its holder to access cryptocurrencies on the blockchain. Losing or Stealing this key could prevent access to or use of the cryptocurrency, which poses a significant risk and results in staggering losses for the company. Several studies (Teichmann & Falker, 2021; Mabunda, 2018) indicated that cryptocurrencies facilitate financial crimes such as money laundering, terrorist financing, and corruption because they are not supervised by a trusted official body, in addition to allowing anonymity.

It is clear that there is a paucity, within the limits of the researcher's knowledge, in the studies that examined the effect of digital asset recognition on accuracy of auditors' opinion, which represents a motivation to test this relationship in the present study and derive the first hypothesis of the research as follows:

H1: Digital asset recognition has a significant effect on the accuracy of Egyptian auditors' opinion on financial statements.

the researcher will test this hypothesis by dividing it into two sub-hypotheses as follows:

H1a: Digital asset recognition has a significant effect on the accuracy of Egyptian auditors' unqualified opinion on financial statements.

H1b: Digital asset recognition has a significant effect on the accuracy of Egyptian auditors' qualified opinion on financial statements.

3- Research Methodology:

To achieve the objective of the research and then test its hypothesis, the researcher will depend on an experimental study. The researcher will present the following: The **objectives** of the experimental study, the **population and sample** of the research, the **research model**, description and measurement of variables, research tools and procedures, statistical analysis tools, finally the results of experimental study. This is as follows:

3-1 Experimental study objectives:

The experimental study aims to test research hypotheses in Egyptian business and professional practice environments to find practical evidence of the validity of the relationship under study.

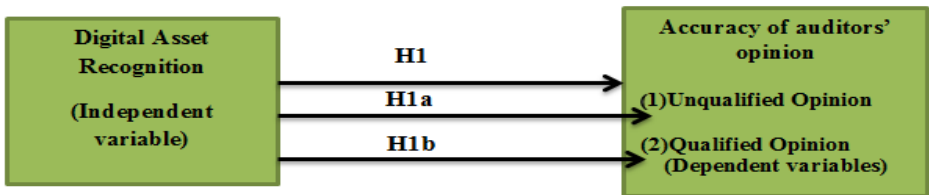
3-2 Population and Sample Selection:

The population of the study consists of auditors in accounting offices in Egypt. The sample was 84 auditors selected from this population.

3-3 Research Model & Measurement of Variables:

3-3-1 Research Model:

The hypotheses of the research show that the **independent variable** is digital asset recognition, while the **dependent variable** is the accuracy of auditors’ opinion. According to these variables, the research model is as follows:



3-3-2 Measurement of Variables:

3-3-2-1 Independent Variable: Digital Asset Recognition

Digital Asset Recognition refers to any data gathered, stored, or organized in digital form, such as digital documents, movies, audio content, and any other form electronically stored on computers, just like cryptocurrencies, and recognized in financial statements. It is measured as a dummy variable that takes the value (1) if the client has digital assets, (0) otherwise (AUDU, 2023; Farooqui et al., 2022).

3-3-2-2 Dependent Variable: Accuracy of auditors’ opinion

Accuracy of auditors’ opinion refers to the auditor's opinion based on sound judgment in light of compliance with the relevant auditing standards and the Code of Ethics and professional conduct. It is measured as a dummy variable that takes the value (1) if the auditor gives right opinion regarding financial statements containing digital assets, and (0) otherwise (El araby, 2022; Reschiwati et al., 2019).

3-4 Experimental study tools and procedures:

Regarding the experimental study tools, the researcher will rely on hypothetical cases of a telecommunications company supported by a set of questions and experimental treatments to collect observations by Personal

interviews and analyze them statistically to test the research hypotheses (Badawy, 2021; Ibrahim & Badawy, 2018). When designing the experimental cases, the researcher will explain some technical terms to make them more obvious.

Regarding the experimental study procedures, the researcher will depend on some prior studies, such as Badawy (2021) and Ibrahim & Badawy (2018) in designing the cases and questions. The experimental cases will include three sections, as follows:

The first section: includes a set of technical terms related to the accuracy of the auditor's opinion and digital assets.

The second section: Contains hypothetical cases, which include summarized financial statements for one of the telecommunications companies listed on the Egyptian Stock Exchange.

(a) The first hypothetical case: financial statements contain traditional intangible assets such as goodwill, and do not contain any material misstatement and there is no uncertainty.

(b) The second hypothetical case: financial statements contain digital assets as a virtual intangible asset, and do not contain any material misstatement and there is no uncertainty.

(d) The third hypothetical case: financial statements contain digital assets as virtual intangible assets, and there are material misstatements but not pervasive. These experimental cases are distributed to a group of auditors and asked to express their opinion on the financial statements.

3-5 Experimental Task and Design:

To test the effect of recognizing digital assets on the accuracy of the auditor's opinion on the financial statements, a $1 + (2 * \backslash)$ experiment was designed as follows:

Independent Variable		
Digital Assets	<ul style="list-style-type: none"> • No material misstatement • No uncertainty 	Opinion type 2
	<ul style="list-style-type: none"> • Material misstatement • Not Pervasive 	Opinion type 3
No Digital Assets	1	

Thus, the experiment contains seventeen treatments, as follows:

Treatment No. 1: There are no digital assets, and the auditor is asked to express his opinion on financial statements that do not contain any material misstatement and there is no uncertainty.

Treatment No. 2: There are digital assets, and the auditor is asked to express his opinion on financial statements that do not contain any material misstatement and there is no uncertainty.

Treatment No. 3: There are digital assets, the auditor is asked to express his opinion on financial statements that contain material misstatements but not pervasive.

To test the research hypotheses, the following comparisons were made between the experimental treatments:

Comparison No. 1: [1]*[2+3] **To test the first hypothesis (H1).**

Comparison No. 2: [1]*[2] **To test the first hypothesis (H1a).**

Comparison No. 3: [1]*[3] **To test the first hypothesis (H1b).**

4.The Results of Experimental Study:

This section aims to present the statistical results related to reliability and validity of data and hypotheses testing.

4-1 Reliability Test:

The researcher will conduct the **Cronbach's Alpha** test to measure reliability. This parameter takes values ranging from zero to one. If the coefficient is equal to one, this means that there is stability in the data, and if this coefficient is equal to zero, this means that the data is not stable. The increase in the value of Cronbach's alpha indicates an increase in the stability and credibility of the data. The researcher conducted a reliability test using the statistical program SPSS. The test result in Table No. (1) showed the reliability of the data, as the coefficient of **Cronbach's Alpha** is **.558** which exceeded **50%**.This means that we can rely on these responses with 55.8% which is quite good in the social sciences research.

Table (1) Reliability Test Results

	Cronbach’s alpha	No. of items
All sample	55.8%	3

4-2 Sampling adequacy and Validity tests:

To test the sampling adequacy and discriminant validity, we relied on Bartlett’s Sig. = 0.000 and the KMO statistic = 0.582, **which** exceeded **50%** (Table 2). This refers to the validity of the study sample.

**Table (2) Validity Test Results
KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.582
Approx. Chi-Square		23.739
Bartlett's Test of Sphericity	Df	3
	Sig.	.000

4-3 Normality Test:

The Kolmogrov-Smirnov test was conducted to find out whether the study population follows the normal distribution or not, in order to determine whether parametric or non-parametric tests will be used. We learned whether this distribution follows the normal distribution or not (Aslam, 2019). The results of this test showed that the P-Value value was equal to (0.000) for all variables, i.e. less than the significance level (5%) (Table 3), which means rejecting the null hypothesis (which states that the population of the study follows the normal distribution) and accepting the alternative hypothesis (which states that the population of the study does not follow the normal distribution). Accordingly, the researcher will rely on **nonparametric tests** to test the research hypotheses.

(Table 3)Tests of Normality

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
FIRST	.528	84	.000	.356	84	.000
SECOND	.438	84	.000	.581	84	.000
THIDR	.455	84	.000	.557	84	.000

a. Lilliefors Significance Correction

4-4 Hypotheses testing:

The first main hypothesis (H1) aimed to test whether digital asset recognition has a significant effect on the accuracy of Egyptian auditors’ opinion on financial statements. This hypothesis was tested by dividing it

into sub-hypotheses, and the following are the results of testing these sub-hypotheses separately:

The first sub-hypothesis test (H1a) aimed to test whether digital asset recognition has a significant effect on the accuracy of Egyptian auditors' unqualified opinion on financial statements. In this regard, the researcher relied on the sign nonparametric test for two non-independent samples to conduct binary comparisons and determine whether there is a difference between the median of the accuracy of Egyptian auditors' opinion in treatment (1) and treatments from (2). The sign test results as shown in Table 4; indicates that there are no significance differences between the median of accuracy of unqualified opinions, where p-value more than 5%, which mean that the recognition of digital asset do not effect on the accuracy of Egyptian auditors' unqualified opinion on financial statements. **This result can be explained** by that the digital assets might be immaterial in the context of the financial statements, meaning that even if there are minor issues with their recognition or valuation, they do not affect the overall financial picture.

(Table 4) Sign Test

P-Value	No Digital asset recognition – Digital asset recognition (unqualified opinion)
Exact Sig. (2-tailed)	.804

The second sub-hypothesis test (H1b) aimed to test whether digital asset recognition has a significant effect on the accuracy of Egyptian auditors' qualified opinion on financial statements. Sign test was used to test the significance differences between the median of accuracy of Egyptian auditors' opinion in treatment (1) and (3). The sign test results as shown in Table 5; indicates that there are significance differences between the median of accuracy of modified unqualified opinions, where p-value less than 5%, which mean that the recognition of digital asset effect on the accuracy of Egyptian auditors' unqualified opinion on financial statements. **This result can be explained by** that Accounting standards for digital assets in many countries are still under development, so in the absence of accounting standards for digital assets, auditors may be unable to determine the best way to recognize digital assets in the financial statements. This ambiguity may lead to a qualified opinion if the auditor is unable to ascertain the correct accounting treatment for digital assets.

(Table 5) Sign Test

P-Value	No Digital asset recognition – Digital asset recognition (qualified opinion)
Exact Sig. (2-tailed)	.018

5- conclusions:

The objective of this paper is to study and investigate the effect of digital asset recognition on the accuracy of auditors' unqualified and qualified opinion on financial statements. Further, the study question is whether digital asset recognition has a significant effect on the accuracy of auditors' unqualified and qualified opinion compared with non-recognition?. Based on a sample of 84 auditors selected from accounting offices in Egypt.

Regarding The first sub-hypothesis test (H1a), the researcher found that the recognition of digital assets does not have a significant effect on the accuracy of Egyptian auditors' unqualified opinion on financial statements on financial statements. In the second sub-hypothesis test (H1b), the researcher found that the recognition of digital assets has a significant effect on the accuracy of Egyptian auditors' qualified opinion on financial statements.

6- Research recommendations and future research opportunities:

In light of the research objectives, problem, and conclusions, the research recommends that accountants and auditors should be interested in developing their skills in recognizing digital assets from a financial accounting perspective and their effect on auditors' opinions.

Regarding the proposed research areas, the most important of them are the following: (a) The effect of recognition of digital assets on the accuracy of Egyptian auditors' unqualified opinion with additional paragraph opinion on financial statements, (b) The effect of recognition of digital assets on the accuracy of Egyptian auditors' adverse opinion with additional paragraph opinion on financial statements.

References:

- Abojeib, M. (2018). Establishing the financial reporting of cryptocurrency in light of existing International Reporting. *Opción journal*, 34(16), 620-637.
- Arens, AA., Elder, RJ., Beasley, MS., & Hogan, CE. (2017). **Auditing and Assurance Services: An Integrated Approach**, 15th Edition, Upper Saddle River, New Jersey: Prentice Hall.
- Aslam, M. (2019). Introducing Kolmogorov–Smirnov tests under uncertainty: an application to radioactive data. *ACS omega*, 5(1), 914-917.
- AUDU, S. I. (2023). Digital Currency and its Challenges on audit Practice. *Journal of International Technology and Information Management*, 22(4), 1-10.
- Badawy, H. A. E. S. (2021). The Impact of Assurance Quality and Level on Cybersecurity Risk Management Program on Non-Professional Egyptian Investors' Decisions: An Experimental Study. *Alexandria Journal of Accounting Research*, 5(3).
- Dmtrenko, I. N. (2019). The influence of factors on the modification of the final opinion of the auditor in the official report: from standards to practice. *IJASOS-International E-journal of Advances in Social Sciences*, 5(13), 111-123.
- El araby, M. A. (2022). **The impact of operational characteristics of firms on the accuracy of the auditors' opinion of the Central Auditing Organization and private accounting offices**. (Master dissertation, Alexandria University).
- Farooqui, M. O., Sharma, B., & Gupta, D. (2022). Inheritance of digital assets: Analyzing the concept of digital inheritance on social media platforms. *Novum Jus*, 16(3), 413-435.
- Guseva, Y. (2020). A conceptual framework for digital-asset securities: Tokens and coins as debt and equity. *Maryland Law Review*, 80, 166-213.
- Harrast, S.A., McGilsky, D. & Sun, Y.T. (2022). Determining the inherent risks of cryptocurrency: A survey analysis. *Current Issues in Auditing*, 16(2), A10-A17.
- Hsieh, S.F. (2021). **Three essays on cryptocurrency** (Doctoral dissertation, Rutgers University-Graduate School-Newark).

Ibrahim, A., & Badawy, H. (2018). Effect of Audit Quality on Non-Professional Investors' Decisions: Experimental Evidence from Egypt. *International Journal of Accounting Research*, 6(2), 1-14.

International Accounting Standards Board (IASB). (2019). Holdings of Cryptocurrencies.

<https://www.ifrs.org/content/dam/ifrs/supportingimplementation/agenda-decisions/2019/holdings-of-cryptocurrencies-june-2019>.

Jackson, A. B., & Luu, S. (2023). Accounting For Digital Assets. *Australian Accounting Review*.106 (33), 302-312.

Krishna, K. & Nadya, F. (2020). The Effect of Independence, Integrity, Professionalism, and Professional Skepticism on the Accuracy of Giving Audit Opinion (The Case of Audit Board of the Republic of Indonesia). *Advances in Economics, Business and Management Research*, 127, 5-10.

Mabunda, S. (2018). Cyber-laundering and the future of corruption in Africa. *Journal of anti-corruption law*, 2(2), 214-233.

PricewaterhouseCoopers (PWC). (2019). **Cryptographic assets and related transactions: accounting considerations under IFRS**. Available at: <https://www.pwc.com>.

_____ . (2022). **Digital Assets – an emerging trend in capital markets**. Available at: <https://www.pwc.com>.

Reschiwati, R., Christina, M.C.L.M.M. & Meo, L. (2019). Accuracy of Audit Opinion: Factors that Influence it. *Journal of Accounting Research, Organization and Economics*, 2(3), 218-231.

Securities, U. S., & Exchange Commission. (2019). Framework for “investment contract” analysis of digital assets. US Securities and Exchange Commission, Available at: <https://www.sec.gov/files/dlt-framework.pdf>.

Susila, M.E. (2024). Cryptocurrency and its Nexus with Money Laundering and Terrorism Financing within the Framework of FATF Recommendations. *Novum Jus*, 18(2), 249-277.

Teichmann, F.M. & Falker, M.C. (2021). Money laundering via underground currency exchange networks. *Journal of Financial Regulation and Compliance*, 29(1), 1-14.

Thornton, G. (2018). IFRS Viewpoint: Accounting for Cryptocurrencies—The Basics. *Grant Thornton International*. Available at: <https://www.grantthornton.global.com>.

_____. (2016). Digital, Virtual and Cryptocurrencies: Issues and Accounting Risks. *Grant Thornton International*. Available at: <https://www.grantthornton.global.com>.

Venter, H. (2018). Digital currency—A case for standard setting activity. **A perspective by the Australian Accounting Standards Board (AASB)**. Available at: <https://www.ifrs.org › ap2d-digital-currencies-paper>.

Zakaria, A., Khumaira, A. R. A. C., Utamingtyas, T. H., Purwohedi, U., & Indriani, S. (2021). Accuracy in Giving an Audit Opinion: Government Internal Auditors' Perspectives. *Calitatea*, 22(184), 40-48.

