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Expectation Gap: the Story of the Auditor's Necessary and Impossible Mission

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Abstract

The expectation gap, the gap between what the public expects from auditors and what auditors can deliver, is a key issue. This gap can call into question the trust necessary for contemporary societies to function.

After providing a historical overview to help understand the issues and the development of the "expectation gap" concept, the article shows the mechanisms by which auditors are subjected to contradictory or incompatible pressures and paradoxical injunctions that can lead to such gaps. It then describes the ways and means of reducing the expectation gap: essentially, guaranteeing the independence of auditors and extending the tasks entrusted to them so that they can better contribute to defending the public interest. In this second area, the case of sustainability auditing is special, given its great complexity, the great diversity of stakeholders and their expectations, and the ability of a new profession, "sustainability auditor", to respond, which is "bubbling up".

These reflections are based on historical and documentary research, dealing with international standards, European law and its impact on French and Romanian accounting law, as well as secondary analysis of various reports and official documents.

Key words: *expectation gap; audit; auditors; statutory auditors; auditing standards; audit directive; sustainability directive;*

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Introduction

> *"All that remained was to elect the two financial auditors, responsible for presenting a report on the balance sheet to the meeting and thus checking the accounts provided by the directors: a delicate and useless function, for which Saccard had appointed Mr Rousseau and Mr Lavignière, the former completely subservient to the latter, the latter tall, blond, very polite, always approving, consumed with the desire to join the board later, when his services would be appreciated"*[1].
>
> E. Zola, *Money*, 1891

We live in a world largely inherited from the industrial revolution of the 19th century. It would not have been possible without a combination of three factors: the development of engineering sciences, the invention of the legal status of business corporation (société anonyme) to bring together a large number of people and a large volume of capital to carry out major projects or works (maritime trade, railways, trans-oceanic canals, oil exploration, etc.), and accounting to manage extensive organisations (networks, groups, etc.) and create an active financial market to drain savings. The evolution of capitalism, and in particular its profound transformation in the second half of the twentieth century and the beginning of the twenty-first, with the transition from industrial capitalism to financial capitalism, has reinforced the collective fear of excesses, because without control, "Money has great power: it opens all doors and spoils all laws"[2].

It quickly became necessary to combine the production of accounts with a mechanism whereby an independent third party, the auditor, provides a guarantee by giving an assurance on the exchanges of financial information between the public or private capital providers and the managers. This process has developed at different speeds and in different ways from one period to another and from one country to another. It was not without its difficulties, as the excerpt from Émile Zola's novel above shows.

The principle of auditing by an independent third party has long existed in the public sector[3] due to the remoteness of activities over a vast territory and the volume of business. It was therefore necessary to delegate a significant amount of power. For example, Charlemagne (date of birth unknown - died 814) had his *missi dominici* (seigniorial envoys) who travelled the length and breadth of his empire to control his vassals and, in particular, the levying of taxes. There were usually two of them, which was a primitive form of joint auditing[4] as we know it today. Later, Prince Matei Basarb (1588-1654), the prince of one of the two Romanian principalities at the time, introduced the "visterie" (treasury) audit, which historians attest to as a form of public finance control.

Whether in a private company or a public organisation, the principle is always the same: as soon as power is delegated, there is necessarily an inspectorate responsible for monitoring the directives of the central authority and, when it comes to finance, for monitoring financial flows, checking their traceability and thus reducing the asymmetry of information. Transparency is at the heart of good governance.

From time immemorial, but even more so since the 19th century, there has been an *expectation gap*[5], a gap between the aspirations and expectations of the state or capital providers and the auditors or statutory auditors or *commissaires-censeurs* as they used to be called. They have evolved considerably, as a result of changes in the

[1] Translated by the authors

[2] I. Slavici, I., (1906) *Mara,* Ed. Institutului de Arte Grafice "Luceafărul", Budapesta, p. 349.

[3] The term "public sector" is not entirely appropriate, as the accounts of the State and the personal accounts of the monarch were one and the same. There was therefore no separation between the public and private assets of the king or emperor.

[4] In France, today, in official texts, we speak of *commissaires aux comptes* (statutory auditors) but in business life, often of auditeurs (auditors). We will use both expressions indistinctly in the case of France, but the word auditor in the case of Romania and also in the international context. In Romania, the chartered accountant may also carry out financial and accounting audit activities (see Ordinance no. 65 of 19 August 1994, updated in 1995, art. 6 (c), concerning the organisation of the chartered accountancy activity).

[5] In the remainder of this article, we will systematically use the expression *expectation gap*, which is customary in the professional world, rather than its translation into national languages, which would be *écart* (in French) or différence/"diferență" (in Romanian) between users' expectations and the services actually provided by the auditors.

realities of the world of public and private finance, the evolution of the players and their interests, and the representations that the various players have made of this reality.

We will begin with a historical presentation of the *audit expectation gap* in two countries, France and Romania. Indeed, understanding the 'life' of a concept in its temporal and spatial context enables us to better understand its ins and outs. We will then look at how listeners are at the centre of paradoxical injunctions that can be dangerous for them. Finally, in the third part, we will present ways and means of giving auditors back the possibility of creating the confidence necessary for our societies to function, without limiting ourselves to the economic aspects, in particular with the sustainability audit.

1. The *expectation gap* at the centre of a chaotic history of auditing

A little history helps us to understand the dialectical relationship between audit and business. For the most part, we will draw on the history of this relationship in France and Romania.

The existence of asymmetric information between a principal and an agent is not a recent discovery. In Mesopotamia, more than 2,000 years before Christ, when the owner of a herd entrusted its care to a shepherd, it was necessary to devise a written system to secure the information at the origin of the "invention" of accounting[1]. Indeed, it was necessary to avoid any dispute over the number of animals making up the herd in order to pacify the agency relationship, which was not theorised until much later, by Jensen and Meckling in 1976. But in Mesopotamia, there was no such thing as auditing.

England was the first country in the world to pass a law requiring a financial audit to protect shareholders against the interests of directors in 1845[2]. This is hardly surprising, given that England is the home of the financial capitalism associated with the industrial revolution of the 19th century. Indeed, distrust was the order of the day, as Adam Smith wrote in 1776 in his *Inquiry into the Nature and Causes of the Wealth of Nations:* "The directors of these sorts of companies being stewards of other people's money rather than of their own, they can hardly be expected to exercise that exact and solicitous vigilance which partners often exercise in the handling of their funds".

In France, the introduction of a statutory audit came later. But practice had preceded the law. For example, the Compagnie des Indes had a corps of "inspectors" - what we now call internal auditors - as early as 1723[3]. It was not until the law of 23 May 1863 creating the *société à responsabilité limitée* (limited liability company) and then the law of 24 July 1867 creating the *société anonyme* (joint-stock company) that there was a legal audit carried out by *commissaires*[4] (statutory auditors). France's aim was to create a legal framework favourable to industrial development comparable to that of England, which had adopted the *Joint Stock Companies Act* in 1844 and the *Limited Liability Act* in 1855.

Such concerns were also evident in the public sector. Under the impetus of Jean-Baptiste Colbert (1619-1683), who denounced the embezzlement of funds by Nicolas Fouquet (1615-1680), continuing the practices of Cardinal de Mazarin (1602-1661), Minister of Finance under King Louis XIV (1638-1715), the Kingdom of France undertook to reform its administration, particularly the most sensitive area, that of public finance. This led to the creation of the Chambers of Audit in France, which were merged by Napoleon in 1807 into a single body, the *Cour des Comptes*. This led to the institutionalisation of statutory audit and its integration into a rigorous bureaucratic system, the so-called "French bureaucracy".

Inspired by the French experience, in 1864 the United Principalities of Wallachia and Moldavia passed the law creating the Romanian High Court of Audit, the first institution with auditing powers. However, its achievements in terms of controlling public finances fell far short of citizens' expectations. Thus, the conclusions of a critical analysis of the activity of the High Court of Audit, carried out in 1922, show that it demanded a posteriori control of budget execution, with an obligation to regularise the accounts three years after the end of the financial year. In practice, the delays were so great that the reports were only of historical interest. For example,

[1] Degos, J.-G., (1998), Histoire de la comptabilité. Paris, PUF, p. 7 & s.

[2] Olatunde, S. P., (2023), Fraud and the Audit Expectation Gap, Honors Thesis, Georgia Southern University, p. 8.

[3] Bensadon, D., Praquin, N. & Touchelay, B. (2016), *Dictionnaire historique de comptabilité des entreprises*, Villeneuve d'Ascq, Presses universitaires du Septentrion, p. 37.

[4] *Ibid*, p. 36.

the first budgets of the High Court of Audit were regularised 24 years late[1].

After the First World War and in particular after the constitution of Greater Romania, following the Union of 1918, the Romanian institutional system underwent profound changes. The reorganisation of the administrative and financial system was the subject of a legislative package in 1929, including the law for the reorganisation of the High Court of Accounts, inspired this time by Belgian and Italian laws. The Parliament of the time hoped that this new law would "regenerate the country's morals, prevent citizens' money from being used for purposes other than those in the general interest of the Romanian State and nation[2]". Its practical application was problematic, for reasons linked to organisational deficiencies, the large volume of work and the lack of independence of its activity, to which were added, from 1940 onwards, new constraints on the management of public money generated by the war.

Under the French Third Republic, France was the scene of numerous financial scandals, the most important of which were the Panama Canal scandal[3] in 1889 and the Stavisky affair in 1934. It was in response to these events that the decree-law of 8 August 1935 was passed. It radically altered the role of the *commissaires* by introducing the following provisions[4]:

- incompatibility with salaried employment or family ties with directors;
- prohibition on receiving remuneration other than that related to the audit engagement;
- respect for professional secrecy;
- obligation to disclose offences to the public prosecutor;
- penalising the dissemination or confirmation of misleading information by the auditor;
- in the event of a public offering, the obligation to appoint an auditor from a list drawn up by the Court of Appeal and the institution of joint auditing.

But the statutory audit was introduced before there was a set of accounting standards which, in France, were adopted at the time of reconstruction, after the Second World War and therefore in a different context, with the General Chart of Accounts (PCG) of 1947, revised in 1957 and 1982 and then modified over time, with the latest edition dating from 2023.

Taken together, these measures considerably reduced what was not yet known as the *expectation gap*. However, the profession remained poorly organised, even though the Institute of Chartered Accountants in Scotland, the oldest in the world, was created in 1854 and the Institute of Chartered Accountants in England and Wales in 1880.

The post-war years, the 50s and 60s, were marked in France by two opposing movements: the decline of a largely state-run economy, inherited from the *Resistance* during WW2 and the doctrine of General de Gaulle[5], and the increasing financialization of large companies that had not been nationalised. Against this backdrop, the law of 24 July 1966 considerably changed the role of the statutory auditors. From being mere agents of the shareholders, they also became the custodians of a public service mission addressed to all stakeholders. The independence of the auditor was strengthened and access to the profession was made conditional on passing high-level professional examinations organised by the Ministry of Justice. The decree of 12 August 1969 established the Compagnie Nationale des Commissaires aux Comptes, which is overseen by the Ministry of Justice and has disciplinary powers over its members, who have a monopoly on the practice of statutory auditing.

In France, after the return to power of a Socialist government in 1981 following ten years of liberalism, the partnership concept of the company came back into favour. It was also defended by the followers of General de Gaulle. The company is a place where value is created, but also where the value created is shared fairly between the providers of capital, employees and third

[1] Curtea de Conturi a României, (2004), *Istoria Curții de Conturi a Romaniei*, Ed. Evenimentul românesc, p. 131.

[2] *Idem*, p. 139.

[3] On this subject, see the following two novels: E. Zola, *L'argent* (*op. cit.*) and Ledouble, D., (1997), *Le Temps d'un Canal*, Paris, Favre.

[4] Bensadon *et al, op. cit.* p. 37.

[5] The economy was to be a mixed one, with a strong public sector capable of a long-term vision and in charge of structural investments, within the framework of a plan, and a private sector to serve the immediate needs of consumers. This model has met with success, particularly in the nuclear and aeronautical sectors, but also with failure, as in the case of the calculation computor plan. In the field of defence, public-private cooperation is the preserve of the "military-industrial complex" in the United States and, to a certain extent, in China.

parties (suppliers, customers, the State)[1]. It must be accountable for its management to all stakeholders. As a result of the high number of company closures, many of which involved relocating their activities, sometimes with dramatic social consequences, the Act of 1st March 1984 strengthened the public service remit of statutory auditors by introducing a warning procedure to prevent company failures.

The end of the Second World War and the arrival of communism completely changed the institutional landscape in Romania. The abolition of the High Court of Audit in 1948 was almost self-evident, as the existence of an independent institution to control the communist administration was incompatible with the way in which a centralised state functioned, as the sole owner of the national patrimony, as both decision-maker and controller. The responsibilities of the Court of Audit were divided between the Financial Control Department of the Ministry of Finance and the Accounting Departments of Public Entities. A quarter of a century later, the Superior Court of Financial Control was created, which took over the control responsibilities of the Ministry of Finance. However, it had jurisdictional and preventive control powers, which differentiated it from the Ministry of Finance. In this centralised system, controlled by the Communist Party, the expectations to be met were those of a single party and an omnipresent state. Historians believe that, despite the limitations of the political system at the time, this institution played an important role in managing the country's assets and limiting fraud.

The internationalisation of economies, especially from the 1990s onwards, and the crisis of confidence following the collapse of Enron, led to new legislative and regulatory developments. In France, the *loi de sécurité financière* (LSF [Financial Security Act]) of 1 August 2003 anticipated European Directive 2006/43 on statutory audit by creating an independent oversight body, the *Haut Conseil du Commissariat aux Comptes* (H3C)[2], and adopting the International Standards on Auditing (ISA) produced by the International Auditing and Assurance Standards Board (IAASB).

In the 90s, Romania was once again in turmoil, as the fall of the Communist regime generated an unprecedented ideological, political, structural and functional rupture and marked the greatest economic transition of our times. This "revenge on history" generated immense hope and well-justified expectations on the part of the "public" for new leaders. Successive governments, charged with managing the historic process of moving from a system based on communist doctrines to a system of liberal democracy, found themselves faced with enormous tasks, often lacking the necessary know-how and resources. They had to act under time pressure to cope with the imperatives of the complex paradigm shift of a long process of "deconstruction" and "refoundation" at all levels of society. This was also the case for financial institutions. For example, the Superior Court of Financial Control ceased to operate in 1990, and in 1992 the Romanian Court of Audit was re-established, with the task of "exercising control over the manner in which the financial resources of the State and the public sector are constituted, administered and used"[3]. Internal audit and preventive financial control were regulated in 1999[4], by a Government Ordinance which set out the framework for their exercise, their objectives and, indirectly, the expectations placed on them. After joining the European Union, Romania aligned itself with European requirements in this area.

Today, France and Romania, like all EU countries, are facing a new challenge for auditors, in response to a new *expectation gap*, the audit of sustainability information, which we will see later. So, there is more to this story than meets the eye. But it has shown us that auditing is still a confidence-building technique rooted in the state of society. The gap between what the audit provides and what is expected of it is therefore a socially constructed reality.

We will now look at the *expectation gap* and the tensions it reflects.

[1] On this subject, see the technique of "overall productivity surplus accounts": Burlaud & Simon, 2003, p. 310 et seq. and Burlaud, A. & Dahan, L., 1985.

[2] In 2024, the H3C became the High Audit Authority (H2A) to reflect the extension of its remit beyond accounts to include sustainability reporting.

[3] Romanian Constitution (1991), art. 139.

[4] *Ordonanta nr. 119 din 31 august 1999 privind auditul intern şi controlul financiar preventiv* (Government Emergency Ordinance on Internal Audit and Preventive Financial Control).

2. The expectation gap: a paradoxical injunction and a challenge for auditors

In order to better understand the challenge, we will define the two expressions *expectation gap* and paradoxical injunction.

2.1. Definition of the expectation gap

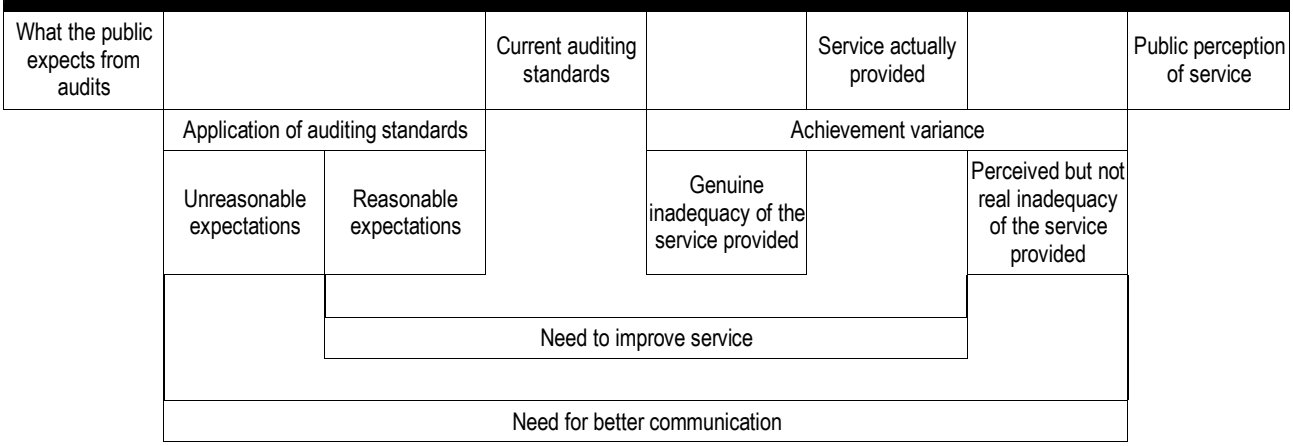
The gap between what users expect from auditors' reports and what auditors produce is, as we have seen, as old as the audit function itself. The public wants assurance, to be reassured in order to have confidence. In our context, for the sake of brevity, we will call it the *expectation gap* or *audit expectation gap* (AEG). While the fact is old, the expression is recent. It is attributed to Liggio in a 1974 article[1]. It was officially adopted by the American Institute of Certified Public Accountants (AICPA) in a 1978 report[2]. This gap is defined as the difference between the levels of expected performance as envisaged by the independent accountant and by the user of the financial statements.

The gap is indeed a difference in perception. It involves three players: the auditors, the standard-setter and a more vague category, the public or users. Being subjective, deviations are difficult to measure, but their components can be identified. Liggio identifies three of them:

- the auditor does not do what is expected of him or her because the service provided is perceived as inadequate;
- auditing standards do not allow the auditor to satisfy public demand;
- the public demand is unreasonable because it goes beyond what an auditor can do. For example, a survey in the United States showed that 70% of companies wanted auditors to provide absolute assurance, which is obviously not possible[3].

In 1988, the Canadian Institute of Chartered Accountants (CICA)[4] supplemented Liggio's definition as presented in **Diagram no. 1**.

Diagram no. 1. Definition of the audit expectation gap, according to the CICA



Source: Own projection

The CICA introduced two new categories of publicly perceived differences relating to standards:

– reasonable expectations, which implies that standards can better meet the needs of the public and that it is therefore possible to reduce this gap;

[1] Liggio, C. D., (1974), "The Expectation Gap: The Accountant's Waterloo", *Journal of Contemporary Business*, n° 3, pp. 27-44.

[2] AICPA. (1978). *Report, conclusions and recommendations of the Commission on Auditors' Responsibilities (Cohen Commission)*. New York.

[3] Jedidi, I., (2013), *Contribution à la compréhension de "l'*expectation gap*" en audit. PhD* thesis, Université Paris-Dauphine, p. 186.

[4] CICA, (1988), *Report of the commission to study the public's expectations of audits*. CICA, p. 18.

– unreasonable expectations that the standard-setter cannot meet.

This message is therefore addressed to the standard-setter, whereas Liggio's message was essentially addressed to the auditors.

The Association of Chartered Certified Accountants (ACCA) introduced in 2019 a different definition of the *audit expectation gap* which is analysed in three gaps[1], as presented in **Diagram no. 2**.

Diagram no. 2. Definition of the audit expectation gap, according to ACCA

Knowledge gap		Achievement variance		Variance
What the public thinks listeners are doing	What listeners actually do	What listeners are expected to do	What the public wants listeners to do	
Deviation from audit expectations				

Source: Own projection

This diagram shows that the knowledge gap, the difference between what the public thinks auditors do and what auditors actually do, can be reduced by better communication. The auditors should then give more details of the controls carried out and their limitations in[1] their report.

The achievement gap, the difference between what auditors actually do and what they are supposed to do, is the responsibility of the oversight body, in France the Haut Conseil du Commissariat aux Comptes (H3C), now the Haute Autorité de l'Audit (H2A), and in Romania the Authority for Public Supervision of the Statutory Audit Activity (ASPAAS).

The evolution gap, the difference between what auditors are supposed to do and what the public wants auditors to do, is the responsibility of the law maker. In this way, as we saw earlier in the historical section, the legislator can give the auditors new responsibilities in response to a politically admissible request from the public. We shall see that this is still the case today in Europe with the audit of sustainability information[2].

The various definitions, of which we have selected the most institutional, show that the *audit expectation gap* is a social fact and that perception is contingent. However, they remain imprecise insofar as they refer to the public, whereas the public is made up of different categories of users of auditors' reports, with particular interests that may be divergent. But they all show that by integrating the providers of capital into the wider public, the auditor is no longer just an intermediary in the agency relationship between the providers of capital and the managers. The game is played by at least three parties: the auditors, the standard-setters and the public. Paradoxical injunctions arise from the interplay between these three categories of players who experience different frustrations.

2.2 Definition of the concept of paradoxical injunction

The double bind is a situation known since ancient times in Sophocles' play *Antigone* (441 BC), which depicts the conflict between the legal order and the divine order, the law of men and the law of God. The double bind was theorised much later by Gregory Bateson, an American anthropologist and psychologist, in 1956 at the Palo-Alto School in California in connection with the study of schizophrenia. Schizophrenia is a situation in which a person is subjected to two contradictory or incompatible pressures. Here are a few examples to help you understand the concept.

If a superior says to a subordinate: "Be spontaneous", there is a paradoxical injunction. The subordinate receives an order which he must obey.

[1] ACCA, p. 12.

[2] See Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 on the *publication of sustainability information by companies.*

But on the other hand, spontaneity is the result of a decision taken freely, and therefore outside of any hierarchical obligation. You can certainly feign spontaneity, but you can't act spontaneously under threat. Another example of a paradoxical injunction is to say "Be autonomous". The "victim", in this case the subordinate, is faced with an impossible choice, unless he quits his job. In effect, he is being told not to take orders because he is autonomous. Generally speaking, the dual constraint leads to a blockage in action and communication, as the victim is faced with the absurdity of the choice. Fortunately, as Olivier Fournout writes[1], "a system of paradoxical injunctions can never be completely satisfied. It is, by definition, always precarious, always in crisis, always out of balance".

In what way is the auditor subject to a double constraint? On the one hand, they are appointed and paid by their clients, which, whether we like it or not, creates a relationship of dependence. On the other hand, they act in the public interest as part of a public service mission, which may lead them to act against their client's interests by reporting a negative assurance on the financial statements or by revealing criminal acts. To arbitrate this conflict and break the deadlock, a third 'authority' is needed: the legislator or the standard-setter, who will provide a framework for the auditor's work and give him an obligation of means (to comply with the standards) rather than an obligation of result (to satisfy the client *versus* the public). This makes a considerable difference in terms of liability.

2.3 Audit expectation gap and paradoxical injunctions: the main situations experienced by auditors

Auditors and the public are asking questions that call into question the credibility of the mission. Can a professional accountant in public practice or an accountancy firm defend the public interest? Is its judgement based on standards or on its professional judgement? Should these standards be laid down by the profession or by the legislator? How can a balance be struck between the social demands made on auditors and their concern not to take risks?

2.3.1 Why entrust the defence of the public interest to private individuals?

First, let's clarify the vocabulary. Should we talk about the general interest or the public interest? Without having a conceptual definition, the notion of general interest refers to the common interests of the various individuals who make up a society, the needs of the population, or according to the Declaration of the Rights of Man and of the Citizen, "public necessity". Scientists unanimously agree that the general interest can only be defined at a very high level of abstraction. The concept is not defined either in national legislation or in European law, which refers instead to activities/services of general interest. As Professor D. Truchet states, the notion of general interest is "the *Leitmotif* of legislation and case law in European law. The general interest is everywhere, 'colonised' in increasingly legal and political areas (...) an object shrouded in mystery, whose contours remain undefined (...), is what we would call in chemistry an unstable element. It depends on the circumstances of time, place and political choices"[2]. Similar assessments can be found in Romanian doctrine, such as that of Professor D. C. Dănişor, who considers that "from a legal point of view, the general interest has no content. It is not something (...) It is a formal and insubstantial reality. The interest is 'general' not because it is superior to individual interests, but because it is accessible to anyone at any time. It is availability, not superiority, that makes it general"[3].

In conclusion, the definition of "general interest" is a functional notion, not a conceptual one[4]. The conceptual imprecision of the "general interest" and its "plasticity" are not defects, but qualities that make it valuable for applying a rule to increasingly diverse factual situations. It is in tune with the gradual shift in our legal systems towards a system of values: it adds legitimacy to legality"[5]. The concepts of "general interest" and "public interest" are

[1] Fournout, O., (2022), *Le nouvel héroïsme*, Paris, Presses des Mines, p. 16.

[2] Truchet, D (2021). *Droit administratif*, 9th edition, Puf, Paris, p. 361.

[3] Dănişor, D.C (2015). Garantarea disponibilității interesului general-limită a restrângerii exercițiului libertăților. *Revista de ştiințe juridice*, nr. 1, p. 111.

[4] Truchet, D (2017), La notion d'intérêt général : le point de vue d'un professeur de droit, *Legicom*, 2017/1 (n° 58), p. 5 - 11.

[5] *Ibid.*

often synonymous and interchangeable. It is therefore the concept of public interest that will be used here, as this term is used in all the laws and regulations applicable to audit engagements and auditors.

The history of auditing has its origins in what is now known as agency theory, whereby the auditor is at the service of the providers of capital. A contractual conception of the company, the partnership contract, logically corresponded to the use of a natural or legal person to examine the accounts in the sole interest of the partners. The audit was therefore a private matter between contracting parties. But we have seen that the mission now extends to other stakeholders, sometimes without any contractual link with the company, with concerns that are not necessarily limited to the financial dimension, grouped together under the term "public interest".

The question of defending the public interest entrusted to private individuals does not arise in the public sector. Auditing is entrusted to an independent jurisdiction, made up of magistrates, the Cour des Comptes and the Chambres Régionales des Comptes in France. Defending the public interest is at the heart of their missions. Over the last two decades, however, we have seen a privatisation of auditing in the public sector, with local authorities[1], universities, hospitals, etc. being required to have their accounts audited by auditors in public practice. But we are only dealing here with the *expectation gap* affecting auditors in the private sector.

In Romania, the Court of Audit was stripped of its jurisdictional function in 2003[2], when the Constitution was revised, and this function was entrusted to the ordinary courts.

2.3.1.1 The public interest in international standards

The IFRS conceptual framework does not mention the public interest but does provide a list of stakeholders. "Other parties, such as regulators and members of the public other than investors, lenders and other creditors, may also find general purpose financial reports useful. However, those reports are not primarily directed to these other groups."[3] Unsurprisingly, coming from the IASB, capital providers therefore have priority.

The foreword to the IAASB Handbook states that the role of the International Federation of Accountants (IFAC) is to serve "the public interest by working with its member organizations to help ensure a skilled, knowledgeable, and ethical workforce of professional accountants around the world; by contributing to the development of sustainable private and public sector organizations; and by supporting strong international financial markets and economies."[4] The *Handbook* states that the professional accountant must act in accordance with the public interest[5].

2.3.1.2 The public interest under European law

The concept of European public interest appeared in European accounting law with Regulation 1606/2002 on the application of international accounting standards. Article 3(2) states that "international accounting standards may be adopted only (...) if they are in the European public interest (...)". By international standards, we mean IFRSs. This condition is therefore essential, but it is not defined. Some people can live with it. For example, the Report from the Commission to the European Parliament and the Council on the evaluation of Regulation n° 1606/2002 on the application of international accounting standards notes that "some stakeholders considered that it would be helpful to be more specific about what European public good encompasses while others considered that the term is generic enough to have meaning and allows flexibility in practice"[6].

Taken out of context, the notion of European public interest can be extremely broad. Here, however, it is a question of contributing to the smooth functioning of the capital market. Accounting standardisation, by ensuring the comparability of financial statements[7], must protect investors and preserve confidence[8]. In the case of accounting standardisation, the public interest must be

[1] *Loi organique relative aux lois de finances* (LOLF) of 1st August 2001.
[2] Romanian Constitution, (2003), art. 140, §. 1.
[3] IFRS *Conceptual Framework*, (2018), § 1.10.
[4] International Auditing and Assurance Standards Board (IAASB), (2020), *Handbook of International Quality Control, Auditing, Review, Other Assurance, and Related Services Pronouncements*. p. 47.
[5] *Ibid.*, p. 47, § A2.
[6] 2015 Report, p. 9.
[7] Regulation 1606/2002, recital 1.
[8] *Ibid.,* recital 4.

considered, as the regulation currently stand, in a restricted sense.

While there is agreement that macro-economic stability is a component of the public interest, from an operational point of view, the European Court of Justice is the only body empowered to interpret European Union regulations[1], while the European Financial Reporting Advisory Group (EFRAG) only has an advisory role. However, the Court has not yet been called upon to rule on this issue[2]. It should be noted that the very (too?) general nature of the concept of European public interest makes it an argument of last resort for possibly rejecting an IFRS standard[3].

2.3.1.3 The public interest under French law

The contractual vision of the company, a network of contracts according to the agency theory, which originated in the Civil Code, is largely tempered by a more recent institutional vision in the Commercial Code. The higher interest of the company, for example its survival, may conflict with the common interest of the shareholders insofar as it takes into account the interests of all the stakeholders. Thus, "the interest of the company is at the heart of the two offences of misuse of company assets and credit on the one hand and misuse of power on the other, both of which generally punish the fact that a company director makes use of company assets or credit, or of powers, contrary to the interest of the company and in his personal interest (...)"[4]. "In the absence of a legal definition, the corporate interest (...) remains a sort of (...) soft concept whose definition is left to the sovereign appreciation of judges combined with doctrinal positions".[5]

Although the offence of misuse of corporate assets was created in France in 1935, it was virtually not punished until the 1960s, reflecting a change in the way companies were represented that is very clearly reflected in the development of the *Code des entreprises en difficulté*. For example, a ruling by the Criminal Division of the *Court de Cassation* on 5 November 1963 held that "the offence of misuse of company assets was created not in the interests of the partners but to protect the company's assets in the interests of the company[6] itself and third parties"[7]. More recently, the Court of Appeal of Caen ruled on 2 February 2006 that "the interests of the company as an economic and legal entity (...) are specific and do not necessarily coincide with those of the partners"[8].

Another notion, close to that of public interest, could be that of public order introduced by article 6 of the Civil Code. But it is not further defined, except insofar as it is associated with "good morals". This is a long way from economic issues and the auditors' remit.

2.3.1.4 The public interest under Romanian law

In Romanian law, the public interest is referred to using different terminology (general interest, national interest, social interest or public utility) and with varying degrees of generality, depending on the normative act.

Thus, according to article 135(2) of the Basic Law, "the State is the guarantor and defender of the general interest by ensuring, *inter alia*, the protection of national interests in economic, financial and foreign exchange activities (...), the exploitation of natural resources, in accordance with the national interest, etc."[9]. According to some authors, this is a "descriptive-expository definition of the legal concept of general interest, using terminology that is obviously economic in nature"[10]. The Civil Code also refers to the nation of public interest, but only to contrast it with private interest, in the context of the exercise of the right of ownership[11]: "every legal person must have an independent organisation and its own patrimony, assigned to the realisation of a lawful and moral purpose, in accordance with the general interest"[12].

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[1] Accounting Regulatory Committee (2016): *Non-Paper of Commission Services DG FISMA. European public good.* http://ec.europa.eu/finance/company-reporting/docs/committees/arc/2016-06-27-european-public-good_en.pdf

[2] *Ibid.*

[3] Louis KLEE & Isabelle CHAMBOST (2009): La régulation comptable européenne : de l'articulation de l'expertise et du politique. *Comptabilité Contrôle Audit,* May, p. 18.

[4] Yvonne MULLER (2016): "RSE et intérêt social" *in La RSE saisie par le droit. Perspectives internes et internationales.* Ed. A. Pedone, p. 227.

[5] *Ibid.* p. 228.

[6] The term "company" is used here to refer to the legal entity constituted by the business.

[7] *Ibid.* p. 228.

[8] *Ibid*. p. 230.

[9] Romanian Constitution (2003), art. 135, § 2, b & d

[10] Clipa, C., (2019), "Noțiunea de interes public, între definiții juridice şi speculații economice", *Revista Romana de Drept Privat* no. *1/2019*

[11] *Codul civil* (2009), *actualizat*, art. 602.

[12] *Idem*, art. 187.

Some organic laws are more precise and explicit regarding the concept of public interest. Thus, according to Law 554 of 2 December 2004 on administrative disputes, "legitimate public interest" refers to the rule of law and constitutional democracy, the guarantee of citizens' fundamental rights, freedoms and duties, the satisfaction of the community's needs and the fulfilment of the public authorities' remit[1] . Other legislative acts refer to the public or general interest, without defining it, but by evoking, depending on the specific context, activities of general interest. For example, Law 2019 of 2015 defines as activities of general interest "any activity in the economic, cultural, artistic, social, educational, scientific, health, sport, housing, environmental protection, preservation of traditions, etc. fields". Without being in contradiction, all these texts shape a certain image of the public interest, but each does so using different language.

In the context of our study and given the responsibility of the auditing profession towards the public interest, it is worth recalling the meaning given by the Code of Ethical Conduct for Financial Auditors in Romania, according to which the public interest is a common good: "the good of the community of people and institutions that a financial auditor serves"[2].

In conclusion, if the financial and sustainability information published by companies is similar to a "public good" in the sense of E. Ostrom[3], one might logically have thought that the control of this information should be entrusted to a "Court of Audit for companies" responsible for defending the public interest, in the same way as the Courts of Audit responsible for public organisations. But no country has adopted this solution in favour of a hybrid form of defending the public interest. The partners or shareholders are free to choose an auditor on the market, they can put them out to competition and issue invitations to tender, but they must be members of a regulated profession under the supervision of the public authorities. The main difference with the *Cour des Comptes* is that the latter has a monopoly, it has jurisdictional powers and its interventions are free of charge for the audited entity. For this last reason, plus the weight of history, the Court of Audit model cannot be transposed to the private sector.

This hybrid solution, combining the freedom of the market and the use of a regulated profession, is a compromise response to a paradoxical injunction: the auditor must defend the public interest even though he is appointed and paid by his client. Arthur Andersen, the world's largest audit firm, was implicated in 2001 in the bankruptcy of one of its major clients, Enron, because it had been guilty of a little too creative accounting, and suffered such damage to its reputation that it disappeared within a few months[4]. An auditor's reputation is his main asset.

2.3.2 What balance should be struck between the application of standards and professional judgement?

In other words, should we obey or think? So posed, the question calls for a simple answer. But it is not[5].

Let's compare two statements:

"Any natural or legal person who is a merchant **must book** all movements affecting the assets and liabilities of their business[6].

and

"The objective of general purpose financial reporting is to provide financial information about the reporting entity that is useful to existing and potential investors, lenders and other creditors in making decisions relating to providing resources to the entity"[7].

We can see that we are in two different worlds with two opposing conceptions of the law. The first, strengthened by the legitimacy conferred by its source, the vote of Parliament, does not have to justify the choices made. The law is prescriptive. The second, whose legitimacy can

[1] *Legea 554/2004 contenciosului administrativ, art. 2, § 1 - r*

[2] *Codul privind conduita etica a auditorilor financiari,* p. 8, http://www.evcont-audit.ro uploads consulted on 20 March 2024

[3] See: Burlaud, A. & Pérez, R., (2012), La comptabilité est-elle un "bien commun?", *Comptabilité, société, politique. Mélanges en l'honneur du professeur Bernard Colasse,* Paris, Economica, pp. 216-233.

[4] See: Colasse, B., (2012), *Les fondements de la comptabilité.* Paris, Éditions La Découverte, pp. 101-104. See also: Sauviat, C., (2003), "Deux professions dans la tourmente : l'audit et l'analyse financière", *Actes de la recherche en sciences sociales*, volumes 1-2, no. 146-147, pp. 21-41.

[5] This § 2.3.2 makes extensive borrowings from Burlaud, A. & Niculescu, M., (2016), "Un drept contabil care face appel la raționamentul profesional: o amenințare sau o oportunitate pentru profesia contabilă?" *Audit Financiar* no. 144, December, pp. 1267-1276.

[6] French Commercial Code, art. 123-12.

[7] IFRS, *Conceptual Framework*, § 1.2.

be challenged[1], is justified on the grounds of its usefulness. The law is interpretative because, since this concept is perfectly subjective, an authority will have to be designated whose **professional judgement** will enable a decision to be made. In the ecosystem of international accounting standards, this will of course be the professional accountant. His intervention will be all the more decisive in that the IASB has clearly opted for standard-setting based on principles, which must therefore be interpreted, as opposed to standard-setting based on rules.

What is professional judgement? It is an "operation consisting in forming an opinion, in cases where certain knowledge cannot be attained".[2] More specifically, in the context of the accounting profession, it can be defined as follows: "The ability of a member of a profession to assess a situation without knowing all its elements with certainty and to choose an acceptable course of action where professional standards allow latitude. (...) The exercise of professional judgement requires the member of the profession to make an objective and prudent analysis, based on his or her experience and knowledge (including knowledge of his or her own limitations) and an awareness of his or her responsibility towards those who suffer the consequences."[3]

At the heart of these two definitions is uncertainty, which is a threat to both the preparer of the accounts and the auditor. The professional accountant must make forecasts (e.g. calculating the present value of future cash flows), translate intentions (e.g. classifying securities as equity investments or investments for impairment) and assess risks (e.g. calculating a provision), in other words give a simplified yet 'true and fair' view of a reality that is only incompletely and uncertainly known.

If uncertainty concerns the context of the action, it also concerns the outcome of the judgement made by the professional. In the legal field, for example, decisions are never perfectly predictable and, as a result, generally involve an appeal procedure. But while there is a personal element in the judgement, personal judgement should not be confused with professional judgement. The former is freer than the latter, which is based on a set of rules and standards adopted by a profession. Uncertainty is reduced by social pressure. "We are well aware that we are not masters of our own judgements; that we are bound and constrained. It is the public conscience that binds us[4].

More specifically, with regard to auditors, the concept of professional judgement is mentioned 14 times in the International Ethics Standards Board for Accountants (IESBA) Code of Ethics for Professional Accountants. In the Fundamental Principles (§ 112), with regard to objectivity, it is stated: "A professional accountant shall comply with the principle of objectivity, which requires an accountant to exercise professional or business judgment without being compromised by:

(a) Bias;

(b) Conflict of interest; or

(c) Undue influence of, or undue reliance on, individuals, organizations, technology or other factors."

The Audit Directive does not use the concept of professional judgement but implicitly addresses it in relation to independence. "Member States shall ensure that, when carrying out a statutory audit, a statutory auditor or an audit firm, and any natural person in a position to directly or indirectly influence the outcome of the statutory audit, is independent of the audited entity and is not involved in the decision-taking of the audited entity"[5]. Professional judgement also requires technical competence. "Member States shall ensure that, when the statutory audit is carried out by an audit firm, that audit firm designates at least one key audit partner. The audit firm shall provide the key audit partner(s) with sufficient resources and with personnel that have the necessary competence and capabilities to carry out his, her or its duties appropriately."[6]

[1] See on this subject: Burlaud, A. & Colasse, B. (2010): "Standardizarea contabilă internațională: reîntoarcerea politicului?", in *Audit Financiar*, January, pp. 3 -to 11 and February, pp. 10 -to 15.

[2] Lalande, A., (1983): *Vocabulaire technique et critique de la philosophie*, Paris, PUF, p. 548. See also: Burlaud, A. & Niculescu, M. (2016), "Un drept contabil care face appel la raționamentul profesional: o amenințare sau o oportunitate pentru profesia contabilă?" *Audit Financiar* no. 144, December, pp. 1267 - 1276.

[3] Ménard, L. *et al* (2004), *Dictionnaire de la comptabilité et de la gestion financière.* CICA, OEC, CNCC, IRE, p. 931.

[4] Durkheim, E., (1911), *Jugement de valeur et jugement de réalité*. http://kieranhealy.org/files/misc/durkheim-jugements-text.pdf, p. 6.

[5] Audit Directive, art. 22, § 3.

[6] *Ibid.* art. 24b, § 1.

In France, according to the Code of Ethics for Statutory Auditors[1], auditors "may only accept or continue a statutory audit engagement if they can justify that their professional judgement, the expression of their opinion or the performance of their engagement are not affected". The Code of Ethical Conduct for Romanian Financial Auditors requires the auditor to "possess specific skills, obtained through training and education" and to "adhere to a common code of values and conduct... He must provide professional services with due care, competence and conscience, and has a permanent duty to maintain his professional knowledge and skills at the level necessary to ensure that a client or employer receives a competent professional service based on the latest practices, legislation and techniques"[2].

If professional judgement has become so important, a source of prestige and power but also a source of risk for auditors, it is because of the development of accounting law. Largely produced by professionals, applied by professionals, inaccessible to the general public because of the technical nature of the subjects dealt with, and autonomous, it is logical that this new law should give professional judgement a place of choice in the implementation and interpretation processes. Moreover, professional judgement enables a global law to adapt to local situations, to give shape to a necessary *glocalisation* (globalisation + localization).

We are therefore seeing the development of a form of "legal self-management", self-regulation and self-discipline under the aegis of professional organisations that cooperate with the States but dominate them in technical matters. Sovereignty is shared, "which implies a contradiction in terms"[3]. In the absence of political legitimacy, IFAC and IASB have acquired substantive legitimacy (control over the technical content of standards) and procedural legitimacy (the right to comment on exposure drafts of standards).[4] All that remains is for legislators to validate the standards and, if necessary, to use the coercive powers of governments to enforce them. This was the case with the adoption of IFRS by Article 4 of EC Regulation 1606/2002 of 19 July 2002 *on the application of international accounting standards* and the adoption of International Standards on Auditing (ISA) by article 26 of Directive 2006/43/EC of 17 May 2006 *on statutory audits of annual accounts and consolidated accounts*.

How can the possibility of exercising professional judgement affect the *gap expectation*? The answer is not simple.

On the one hand, the extension of the field left to the auditor's appreciation and judgement is necessary because of increasingly complex regulations. While prescriptive accounting law, made up of simple, general rules, such as the General Chart of Accounts (PCG) in France or, in Romania, the General Chart of Accounts, corresponds perfectly to the needs of millions of VSEs and SMEs, as far as multinational groups are concerned, the complexity of legal arrangements and financial products, and the fact that they are present in multiple jurisdictions, require standardisation based on common principles that must be applied locally on the basis of reasoning. This is where professional judgement comes in. It reduces the *expectation gap* by seeking a relevant response to a given situation. Substance *over* form. This approach has its supporters: it enhances the value of the accounting profession, which can thus demonstrate a skill for which it has a monopoly.

On the other hand, responding to *gap expectations* by seeking relevance rather than regularity, i.e. compliance with a rule, is a source of risk from which the profession seeks to protect itself. To do this, it is standardising procedures in order to transform an obligation of result, which opens the way to disputes, into an obligation of means that can be more easily satisfied by following a commonly accepted audit approach, in accordance with "good practices". The burden of proof is then easier to meet. The auditor's report, which is also standardised, opens up all possible safeguards by referring to "moderate level assurance", the lowest level of assurance, or "reasonable assurance"[5], the highest level of assurance, which does nothing to reassure the public, who are

[1] Annex 8-1 of Book VIII of the French Commercial Code, regulatory part, art. 19-II.

[2] *Codul privind conduita etica a auditorilor financiari*, p. 8 and 10, http://www.evcont-audit.ro, consulted on 20 January 2024

[3] Frydman, B. (2000), "Le droit, de la modernité à la postmodernité". *Réseaux*, n° 88-90, p. 71.

[4] See on this subject: Burlaud, A. & Colasse, B., *op. cit*.

[5] See the definition of these two terms in: International Auditing and Assurance Standards Board, (2022), *Handbook of International Quality Management, Auditing, Review, Other Assurance, and Related Services Pronouncements*, p. 11, https://ifacweb.blob.core.windows.net/publicfiles/2023-10/IAASB-2022-Handbook-Volume-1.pdf

looking for an impossible total assurance, thereby increasing the *expectation gap*.

Once again, therefore, the auditor is faced with a paradoxical injunction: to satisfy a social demand by giving priority to relevance, a vague and subjective concept that is often mentioned[1], but never operationally defined in international accounting law, or to limit his civil and criminal liability by hiding behind procedures that are as standardised as possible and very vague commitments as to results, such as moderate or reasonable assurance. Finding the right balance is a matter of professional judgement...

2.3.3 The audit between self-regulation and the legislator?

If we are to think about self-regulation, as opposed to regulation by public authorities, we first need to think about the vocabulary.

Most authors talk about self-regulation. The *Dictionnaire de l'Académie française* defines regulation as follows: "The act of controlling and correcting the variable data of a system or phenomenon in order to bring them into line with a standard, to maintain their equilibrium value (...) By extension: control of an activity or a complex system with the aim of ensuring that it functions properly and guiding its development (in this usage, regulation is opposed to regulation legislation, which is general, prior, impersonal and permanent). A regulatory authority is one of the institutions entrusted by the State with the task of ensuring this control".[2] The institution in question is, in our case, in France, the High Audit Oversight Authority (H2A) and we must therefore distinguish between regulation and regulation legislation.

The same dictionary defines self-regulation as follows: "Regulation of a machine or function without outside intervention. The self-regulation of blood pressure".[3] Alain Rey adds: "The notion of self-regulation corresponds to the principle of the thermostat and cybernetic machines".[4]

In everyday language, self-regulation is usually used to refer to self-regulation, but this is a poor translation of *self regulation, i*.e. regulation produced by the auditors for the auditors. We will therefore use the term self-regulation. This term is also used in economic and legal language in Romania.

The question now is who should decide the rules governing auditors' practice. There are two opposing models: either self-regulation or regulation by public interest representatives.

Historically, the Anglo-Saxon tradition corresponds to the first model. In the United Kingdom, for example, a Royal Charter delegates to professional bodies the task of organising the accountancy profession in the broad sense, the *chartered accountants*, who are responsible for regalian functions, essentially the production of standards and disciplinary powers, and for activities such as initial and continuing training education. Of course, this model has its advantages. Producing auditing standards requires specialised technical skills that only professionals can have. They have substantial legitimacy to translate "good practice" into standards. But there is one major *caveat*: the possibility of a real or apparent conflict of interest. Isn't a professional organisation more concerned with the interests of its members than with the public interest?

Continental Europe has a more centralised tradition and entrusts professional organisations only with the functions of leading and defending the profession, while standard-setting and initial training education generally remain the prerogative of the State[5]. This is the case in France with the Compagnie Nationale des Commissaires aux Comptes (CNCC), created in 1969 under the supervision of the Ministry of Justice, and in Romania with the Camera Auditorilor Financiari din România (CAFR) under the supervision of the Ministry of Finance[6]. This model also has its advantages: the standards emanate from a representation of the nation and are therefore better able to satisfy the public interest and reduce *gap expectations*. Political legitimacy is unquestionable, which in legal matters is not negligible. The other side of the coin is that

[1] The word "relevance" or "relevant" appears 95 times in the IFRS conceptual framework. Cf: Burlaud, A. & Niculescu, M. (2015), "Informația non-financiară: o perspectivă europeană". *Audit Financiar*, June, pp. 102 - 112.

[2] https://dictionnaire-academie.fr/article/A9R1374

[3] https://www.dictionnaire-academie.fr/article/A9A3294

[4] Rey, A., (dir), (2000), *Dictionnaire historique de la langue française*, Paris, Dictionnaires Le Robert, p. 1881.

[5] As far as initial training education is concerned, the State generally delegates this activity to the universities.

[6] See: Accountancy Europe, (2019), *Organisation of the public oversight of the audit profession in Europe. State of affairs after the implementation of the 2014 audit reform. Survey results*, p. 30 & 70. https://accountancyeurope.eu/wp-content/uploads/2022/12/180319_Organisation-of-the-Public-Oversight-of-the-Audit-Profession-2018-survey-update-.pdf

the technical nature of the profession is harder to grasp. Substantial legitimacy may be lacking when the decision is taken by non-specialists.

Internationally, things are more complicated. IFAC, the global professional organisation under private law, *via* the IAASB for auditing standards and *via* the IESBA for ethical standards, produces standards that are intended to be adopted by all countries in the world but has no binding power. We are dealing here with the Anglo-Saxon model of standard-setting by professionals for professionals. It could not be any other way, since there is no supra-national organisation with competence in this field and the power to compel.

The European Union, in the continental European tradition, regulates the audit profession and audit engagements by means of directives, the Audit Directive and the Sustainability Directive. For operational details, however, the Audit Directive refers to the IAASB's International Standards on Auditing (ISAs), which thus have the force of law in the 27 countries of the European Union.

In practice, we can see that the two models do not exist in a 'pure' state.

In France, draft auditing standards are prepared within H2A by professional members of the CNCC who have technical skills and experience in the field. They rely heavily on ISAs, as required by the Audit Directive. This first stage in the standard-setting process is based on the Anglo-Saxon model. However, these drafts must then be approved by a decree of the Minister of Justice in order to acquire the force of law. This gives rise to a hybrid model combining substantive and political legitimacy. The *expectation gap* should therefore be reduced to a minimum.

In Romania, financial auditing standards are drawn up by the Chamber of Financial Auditors on the basis of international standards and European regulatory requirements in this area.

This hybrid model gradually took hold in international professional organisations following the Enron scandal, the ensuing crisis of confidence and the collapse of Arthur Andersen. The reputation of audit firms had been severely called into question and their independence challenged. There was therefore an urgent need to deal with the sharp criticism of *self-regulation, which* was responsible for a widening of the *expectation gap*. The profession was in danger. As a result, René Ricol, Chairman President of IFAC, radically changed the governance of the profession by creating an independent oversight body in 2005, the *Public Interest Oversight Board* (PIOB), which was more concerned with investors than auditors, to act as a counterweight to the IAASB and the IESBA. Later, in 2024, IFAC created a *Stakeholder Advisory Council* (SAC) to bring a multi-stakeholder perspective to auditing and ethical standards. Social and environmental concerns have come a long way.

In Europe, the 2006 Audit Directive required that the quality assurance system shall be organised in such a manner that it is independent of the reviewed statutory auditors and audit firms and is subject to public oversight[1]. Accountancy Europe, a European professional organisation, published a study in 2019 describing the public oversight mechanisms in 23 European countries[2].

France had anticipated the Audit Directive by introducing into the Financial Security Act (*loi de sécurité financière*) of 1st August 2003 an article creating an independent public authority, the H3C.

In conclusion, while the hybrid model designed to reduce the *expectation gap* by combining technical expertise and the public interest has gained ground, it remains to be seen whether this is purely formal governance of the ecosystem or a genuine tool at the service of all stakeholders. Will supervisors have the time and human resources to influence the choices prepared and examined by the major global firms?

2.3.4 The auditor between responding to social demand and controlling risks?

Companies whose shares are admitted to trading on a regulated market are required to publish a certain amount of information, including their financial statements, management report, including the sustainability report, and the report of the statutory auditor(s). As we have already said, this information is a "public good" in the sense of E. Ostrom, which presupposes two things[3]:

- no possibility of exclusion: the information is freely available to all;
- absence of rivalry in use: as there is no limit to the dissemination of information, the fact that one user

[1] Article 29, § a.
[2] See Accountancy Europe, *op. cit*.
[3] See Burlaud & Pérez, *op. cit.* p. 223.

receives it cannot prevent another user from also receiving it.

As the auditor's report is not information reserved for a select few, such as shareholders, it must satisfy the needs of a wide range of users. But social demand cannot be expressed directly. It results from a consensus within a jurisdiction at a given time, which the legislator translates into legal obligations specifying the list of what must be made public and therefore audited. Theoretically, there should be no *gap expectations*, apart from individual requests not covered by the legal information to which the auditor cannot respond and, legally, does not have to respond because he is bound by professional secrecy.

These individual requests may include requests from the auditor's clients, who may ask for a qualified report made by the auditor not to be included in the final report. Given that the auditor is appointed and remunerated by his client, does he have the possibility of resisting such a request? Theoretically, yes. In practice, however, it can be more complicated, particularly if the request relates to an issue that is open to discussion. It may also be for a defensible reason: should losses be concealed in order to obtain a loan and save the company and its jobs, or should a qualified audit report be disclosed that will inevitably doom the company? The request may also come from a major shareholder wishing to obtain information outside the boardroom. In this case, we are dealing with an *expectation gap* caused by special interests. By responding favourably to such requests, the auditor takes a civil and criminal risk: unequal treatment of shareholders, interference in management, breach of professional secrecy, complicity in presenting untrue accounts, complicity in tax fraud and other offences.

There may also be "collective" *gaps in expectations* which the legislator has been unable or unwilling to fill. For example, before sustainability reporting became a legal obligation, there was already a social demand for information of this nature. The company was not obliged to publish what would have been desired by some of its stakeholders, such as NGOs or employee unions. If this information was given outside the management report, the auditor did not have to audit it and report an audit opinion, thus taking no risk.

In conclusion, we can see that the auditor contributes to the production of a "public good", a creator of confidence, an essential component of the functioning of the economy, but that he can only respond to the demand of all or part of the Company within the legal framework unless he takes a risk that may be significant.

3. The expectation gap: ways and means of reducing it

3.1 Auditors can only be credible if they are independent

The theme of independence has already been addressed, but needs to be explored in greater depth. We will then look at ways of institutionalising auditor independence so that heroism is not the only recourse for avoiding or resolving ethical dilemmas.

3.1.1 What is independence?

Numerous scandals have been blamed on the lack of independence of auditors, the most notorious in recent history being the collapse of Enron and the fall of Arthur Andersen, mentioned above. There is no debate about the need for auditors to be independent. But independence must be defined.

A distinction is made between independence of spirit or fundamental independence and de facto or formal independence or independence in appearance. The IESBA Code of Ethics gives the following definition: "Independence is linked to the fundamental principles of objectivity and integrity. It comprises:
(a) Independence of mind – the state of mind that permits the expression of a conclusion without being affected by influences that compromise professional judgment, thereby allowing an individual to act with integrity, and exercise objectivity and professional skepticism.
(b) Independence in appearance – the avoidance of facts and circumstances that are so significant that a reasonable and informed third party would be likely to conclude that a firm's or an audit or assurance team member's integrity, objectivity or professional skepticism has been compromised"[1].

Some jurisdictions prefer formal independence, which is easier to qualify. All you have to do is list the incompatibilities. For example, you cannot be an auditor of your spouse's or child's business as defined in the Civil Code. But formal ignorance ignores, for example, the

[1] IESBA (2009), *Code of Ethics for Professional Accountants*, § 120.15 A1.

bonds of friendship that can be just as strong as family ties. Where does friendship begin? Where does it end? Independence of mind is obviously what counts, but its perimeter is not the same as that of formal independence.

In France, the Code of Ethics for Statutory Auditors defines independence as follows: "Statutory auditors must be independent of the person or entity to which they provide an engagement or service. They must also avoid placing themselves in a situation that could be perceived as compromising the impartial performance of their engagement or service. These requirements apply throughout the duration of the engagement or service, both when it is being performed and when it is not[1].

In Romania, the Code of Ethical Conduct for Financial Auditors refers to independence of reasoning and independence in appearance, the definitions of which are identical to those given by the IESB[2].

3.1.2 Independence requires skills

Professional skills can be a protection against the risks of loss of independence. They may be technical and scientific or relate to attitudes that have an impact on independence and are therefore described in most auditor training standards.

3.1.2.1 Technical and scientific skills

As with all regulated professions, given that they perform public service functions (doctors, architects, chartered accountants, statutory auditors, etc.) and that the asymmetry of information does not allow for the normal functioning of regulation by the market (the customer does not have the technical and scientific knowledge necessary to assess the quality of the service provided by the professional), the regulatory authority stipulates that access to the profession is reserved for people who have passed a knowledge test.

The IESB has published the *International Accounting Education Standards* (IES)[3].

In 1984, the European Union published the 8th Directive on Statutory Audit, which requires auditors to undergo theoretical, practical and continuous training. Articles 10 to 13 of the current Audit Directive set out these requirements. Depending on the country, this obligation may take different forms: examinations delegated to professional organisations bodies according to a rather liberal model (Ireland, on the model of Great Britain or the United States), delegated to universities (Germany, Italy, Spain) or organised according to a hybrid model combining national diplomas organised by the State and university diplomas deemed equivalent (France, Romania).

The Sustainability Directive (CSRD), by extending the audit to sustainability reporting, completed Articles 6 and 8 of the Audit Directive. "In order for the statutory auditor to also be approved to carry out sustainability assurance, the examination of professional competence referred to in Article 6 shall ensure the necessary level of theoretical knowledge in the fields relevant to sustainability assurance and the ability to apply that knowledge in practice. At least part of this examination shall be in writing." In Article 8, the following paragraph is added: "In order for the statutory auditor to also be approved to perform sustainability assurance, the theoretical knowledge test referred to in paragraph 1 shall also cover at least the following areas: a) legal requirements and standards for the preparation of annual and consolidated sustainability information; b) sustainability analysis; c) due diligence procedures with regard to sustainability issues; d) legal requirements and assurance standards for sustainability information referred to in article 26a."

These guarantees of technical and scientific expertise are likely to reduce the *expectation gap*.

3.1.2.2 Critical thinking and the exercise of professional judgement

We have already discussed professional judgement above, at § 2.3.2. The International Education Standards Board defines it as follows: "The application of relevant training, professional knowledge, skills and experience commensurate with the facts and circumstances, including the nature and scope of the particular professional activities, and the interests and relationships involved."[4]

[1] *Code de déontologie de la profession de commissaire aux comptes* (Annexe 8-1 du Livre VIII du *Code de commerce* français, partie réglementaire) (2020), art. 5.

[2] *Codul privind conduita etica a auditorilor financiari*, p. 5, http://www.evcont-audit.ro, consulted on 20 January 2024

[3] International Accounting Education Standards Board (2019), *Handbook of International Education Pronouncements*. p. 204.

[4] *Ibid*, p. 145.

Professional judgement must be based on critical thinking or professional scepticism.

The IAESB defines professional skepticism as "An attitude that includes a questioning mind, being alert to conditions which may indicate possible misstatement due to error or fraud, and a critical assessment of evidence.[1] Professional skepticism *is* one of the skills required by the IAESB's *International Education Standards.*

In the European Union, the Audit Directive states: "Member States shall ensure that, when the statutory auditor or the audit firm carries out the statutory audit, he, she or it maintains professional scepticism throughout the audit, recognising the possibility of a material misstatement due to facts or behaviour indicating irregularities, including fraud or error, notwithstanding the statutory auditor's or the audit firm's past experience of the honesty and integrity of the audited entity's management and of the persons charged with its governance.

The statutory auditor or the audit firm shall maintain professional scepticism in particular when reviewing management estimates relating to fair values, the impairment of assets, provisions, and future cash flow relevant to the entity's ability to continue as a going concern."[2]

In France, the Code of Ethics for Statutory Auditors devotes Article 6 to the issue of critical thinking: "In the exercise of his professional activity, the statutory auditor shall adopt an attitude characterised by critical thinking". Article 23, on the conduct of the engagement, states: "The statutory auditor (...) shall be alert to material misstatements due to error or fraud and shall critically appraise the audit evidence on which the audit opinion is based."

Critical thinking and professional judgement help to identify risky situations from the point of view of the auditor's independence and thus reduce the *expectation gap*.

3.2 Institutional mechanisms guaranteeing auditor independence

Technical and scientific skills and a code of ethics are not enough to guarantee an auditor's independence. Institutional mechanisms and governance of the profession as a whole must complement these regulations to strengthen public confidence, which is constantly under threat.

3.2.1 Appointment of auditors

The auditors are appointed or reappointed by the general meeting of shareholders or partners. In other words, only the contributors of equity capital make the decision. In practice, it is the management and the board of directors who make a proposal to the members of the general meeting assembly, which generally approves the proposal in the absence of information to enable a counter-proposal to be made. In large companies, it is almost normal to issue a call for tenders in order to exert pressure on the auditors' fees.

The auditor's independence may therefore be called into question by the fact that he or she may be an employee of the company's management.

This risk is mitigated by two measures:

1. the existence of auditing standards[3] limits the risk that the auditor will not perform certain controls or will limit their scope in order to maintain a certain level of profitability of the assignment, possibly with the complicity of the client's management;
2. the term length of the office appointment. This varies from one jurisdiction to another, sometimes depending on the size of the company or whether it issues securities admitted to trading on a regulated market. In France, the term of office is six years[4] and cannot be terminated by the company. The company's disproof of the statutory auditor or the statutory auditor's request for a review to resign must be the subject of a court decision. This important protection ensures strong independence. In Romania, the term length of office the appointment is aligned with the provisions of Regulation (EU) No 537/2014 of 16 April 2014 on specific requirements for the statutory audit of public interest entities, article 17 of which states that "Neither the initial engagement of a given statutory auditor or audit firm, nor that engagement combined with any renewed engagements, may last in total more than ten

[1] *Ibid.*
[2] Art. 21.
[3] International Auditing and Assurance Standards Board (IAASB) (2022), *Handbook of International Quality Management, Auditing, Review, Other Assurance, and Related Services Pronouncements*
[4] French Commercial Code, art. L821-44.

years". The Romanian Statutory Audit Law provides for the possibility of extension to 10 years with a maximum duration of 20 years when a procurement procedure is carried out in accordance with art. 16 paras § (2) to (5) of Regulation (EU) no. 537/2014.[1]

3.2.2 Auditor rotation

In order to avoid an almost automatic renewal of auditors and the risk of a form of complicity with the management of client companies, most countries have introduced a rotation requirement, which is a determining factor of independence. At the end of their term of office, auditors will not be tempted to 'negotiate' their renewal, as they will be obliged to make way for a colleague. While the advantage is clear, rotation also has a disadvantage. The new auditor will not have the same knowledge of the client as his predecessor, which generates a cost both for the auditor (acquiring knowledge) and for the client's accounting and financial departments (information to be provided).

The professional organisations were generally not in favour of introducing a rotation obligation that would put members of the profession in a competitive situation.

IAASB auditing standards do not deal with the rotation of mandates. The issue is addressed in the IESBA Code of Ethics, which provides for a maximum term of office of 7 years for public interest entities only. When the auditor is a legal entity, rotation applies only to the partner in charge of the file[2]. Thus, firm X may remain auditor of company Y for an unlimited period, provided that every 7 years there is a change of signatory engagement partner.

The Audit Directive takes up this provision without really specifying it further. In order to reinforce the independence of auditors of public-interest entities, the key audit partner(s) auditing such entities should rotate. To organise such rotation, Member States should require a change of key audit partner(s) dealing with an audited entity, while allowing the audit firm with which the key audit partner(s) is/are associated to continue being the statutory auditor of such entity.

In France, the Commercial Code has adopted the same provisions, applicable only to public interest entities and bodies making public offerings of securities, but specifying that the term of office must be six consecutive years.

As we can see, the rotation principle is applied *at a minimum*, since it only applies to certain companies and the large firms are able to retain mandates by rotating their partners.

3.2.3 Non-interference in management and the risk of conflicts of interest

Contrary to the practice in Anglo-Saxon countries, which do not distinguish between the professions of chartered accountant and statutory auditor, many European countries have two distinct professional bodies. In the United Kingdom, for example, *chartered accountants* and in the United States and Canada *certified public accountants* belong to the same professional body, whether they are consultants, auditors or employees of industrial or commercial companies or even public organisations. In France, we distinguish between the *Ordre des experts-comptables* (OEC) and the *Compagnie nationale des commissaires aux comptes* (CNCC). In Romania, we have the *Corpul Experților Contabili şi Contabililor Autorizați din România* (CECCAR) and the *Camera Auditorilor Financiari din România* (CAFR).

Because the Anglo-Saxon countries did not make this distinction so clearly, confusion between the two was undoubtedly more common. Once again, it was the bankruptcies of Enron and WorldCom that raised awareness of the risks involved in combining audit and advisory consulting work for the same client. In the United States, a federal law, the Sarbanes-Oxley Act, passed on 25 July 2002, put an end to this practice for listed companies.

The IESBA Code of Ethics has not opted for an absolute prohibition on dual functions. "Before a firm or a network firm accepts an engagement to provide a non-assurance service to an audit client, the firm shall apply the conceptual framework to identify, evaluate and address any threat to independence that might be created by providing that service"[3].

On this point, the Audit Directive is not very restrictive. In the case of self-review or self-interest, it would be appropriate, where necessary to ensure the independence of the statutory auditor or audit firm, for the Member State and not the statutory auditor or audit firm to decide

[1] *Legea nr. 162/2017 din 6 iulie 2017 privind auditul statutar al situațiilor financiare anuale şi al situațiilor financiare anuale consolidate şi de modificare a unor acte normative*, art. 71.
[2] IAESB, art. R540.5.
[3] Art. R600.8.

whether the statutory auditor or audit firm should resign or decline the audit engagement. However, this should not lead to Member States being generally obliged to prevent statutory auditors or audit firms from providing non-audit services to their clients. Regulation (EU) No 537/2014 on requirements for statutory audits of public interest entities is more specific: "A statutory auditor or an audit firm carrying out the statutory audit of a public-interest entity, or any member of the network to which the statutory auditor or the audit firm belongs, shall not directly or indirectly provide to the audited entity, to its parent undertaking or to its controlled undertakings within the Union any prohibited non-audit services in: (follows a list of prohibited services)"[1].

In France, the ban dates back to the creation of the Compagnie des commissaires aux comptes by a decree of 12 August 1969. The French Commercial Code, which includes this decree, is much more categorical than the European Directive. "The statutory auditor is prohibited from providing to the person or entity that has commissioned appointed him to audit its accounts, or to the persons or entities that control it or that are controlled by it (...), any advice or any other provision of services that do not fall within the scope of the duties directly linked to the statutory auditor's mission"[2].

In Romania, Law 162/2017 on statutory audit, requires that when carrying out a statutory audit, "the auditor or audit firm shall take all reasonable steps to ensure that its independence is not affected by an actual or potential conflict of interest or by direct or indirect commercial or other relationships involving the financial auditor or audit firm carrying out the audit, and, where applicable, the network to which they belong (...)."[3] The law lists twelve threats to the auditor's independence, including: financial interests; loans and guarantees; business relationships; family and personal relationships; employment with an audit client; temporary assignment of staff; recent services provided to audit clients; holding a management or directorship position with the audit client; provision of non-audit services to an audit client; reward and appraisal policies; gifts and hospitality; pending or imminent litigation[4].

The limits imposed on the combination of advisory and audit functions now make it possible to avoid a conflict of interest when the advisory role leads to conclusions that are contrary to those of the audit role and to increased responsibility on the part of the auditor. The ban reduces the *expectation gap*.

3.2.4 Quality control

The purpose of the controls carried out by the professional organisation or its supervisory body on audited firms and client files is to ensure that the trust placed in statutory auditors by the markets, users of the accounts and all stakeholders is justified.

The IAASB standards do not deal with external quality control of auditors' files as part of a peer review.

The European Union has introduced external quality control. "Regular inspections are a good way of ensuring that statutory audits are of a consistently high quality. Statutory auditors and audit firms should therefore be subject to a system of quality assurance which is organised in such a way as to be independent of the audited entities. (...) Member States may organise the quality assurance system in such a way that each individual auditor must be subject to a quality assurance review at least every six years." "Member States shall ensure that effective systems of investigations and sanctions are in place to detect, correct and prevent inadequate performance of the statutory audit. "Regular inspections are a good means of achieving a consistently high quality in statutory audits. Statutory auditors and audit firms should therefore be subject to a system of quality assurance that is organised in a manner which is independent from the reviewed statutory auditors and audit firms (...)[5]. Member States may organise the system of quality assurance in such a manner that each individual auditor is to be subject to a quality assurance review at least every six years. Member States shall ensure that there are effective systems of investigations and sanctions to detect, correct and prevent inadequate execution of the statutory audit."[6]

[1] Regulation (EU) No 537/2014 of the Parliament and of the Council of 16 April 2014 *on specific requirements for the statutory audit of public interest entities*, art. 5, para. 1.
[2] French Commercial Code, art. L822-11, § 2.
[3] *Legea nr. 162/2017 din 6 iulie 2017 privind auditul statutar al situațiilor financiare anuale şi al situațiilor financiare anuale consolidate şi de modificare a unor acte normative,* art. 21.
[4] *Idem*, art. 22.
[5] Audit Directive, recital 17.
[6] *Ibid*, art. 30 §1.

In France, periodic audits are carried out on all registered statutory auditors. Firms holding mandates for public interest entities are audited at least once every three years, and other firms every six years. In accordance with article L.821-1 of the French Commercial Code, the H2A is responsible for supervising all audits and issuing recommendations for follow-up.[1] In the event of non-compliance, the H2A may take legal action against the statutory auditor.

In Romania, the *Autoritatea pentru supravegherea publică a activității de audit statutar*/Autorité de contrôle public de l'activité d'audit statutaire (ASPAAS) is responsible for supervising the statutory audit of accounts, as well as supervising the activity of auditors, audit firms and the Chamber of Financial Auditors of Romania (CAFR)[2]. Its missions are: to improve the quality of statutory audit; to enhance the professionalism of financial auditors and audit firms; to supervise statutory audit activity in the public interest, in accordance with the requirements of European Union and other relevant regulations; and to ensure the effectiveness of its own work in the field of statutory audit.

Audits of audit firms and audit files have made a major contribution to improving the quality of work, even though some professionals complain of excessive formalism. In this sense, the *expectation gap* has narrowed.

3.2.5 Joint statutory auditors

The existence of joint auditors is far from being a general rule. The IAASB standards refer to the possible existence of joint auditors in relation to consolidated financial statements. "Where joint auditors conduct the group audit, the joint engagement partners and their engagement teams collectively constitute the group engagement partner and the group engagement team."[3] (International Standards on Auditing).

The Audit Directive also refers to the possibility of several auditors for consolidated accounts, but does not make this an obligation. "For the purposes of this Directive, the following definitions shall apply: (...) group auditor means the statutory auditor(s) or audit firm(s) carrying out the statutory audit of the consolidated accounts."[4]

In France, following the introduction of joint statutory auditors by the Decree-Law of 8 August 1935, and the Order 2005-1126 of 8 September 2005 on statutory auditors amending the Commercial Code[5], persons and entities required to publish consolidated financial statements must appoint at least two statutory auditors. This wording explicitly allows for the possibility of appointing more than two statutory auditors. Their mission relates only to the consolidated accounts. In Romania, Law 162/2017 on statutory audit also refers to the possibility of more than one auditor for consolidated financial statements.[6]

The presence of two statutory auditors reduces the risk of complicity with the parent company's management and increases the independence of the auditors, thereby helping to reduce the *expectation gap*.

In conclusion, institutional mechanisms, the way auditors are appointed, the rotation of mandates, the prohibition on interfering in the client's management, external quality control by peers or an independent authority and joint auditing of consolidated accounts significantly reduce the risks of loss of independence that could cast doubt on a public service mission.

3.3 Extending the auditor's remit to meet the gap in expectations

The public is asking for 100% assurance that the financial statements are true and fair, which is obviously not possible since audits are carried out on a test basis, targeting areas of risk. But they want even more: does the company comply with laws and regulations? is it viable? does it respect social and environmental commitments? In other words, the public is calling for a broadening of the auditors' remit beyond an opinion on the financial statements alone.

[1] See on this subject: *Décision du Haut Conseil du Commissariat aux Comptes* nº. 2009-04, relating to the periodic controls to which statutory auditors are subject. Delegation of the performance of periodic controls and procedures. https://www.h3c.org/wp-content/uploads/2020/06/2009-04.pdf

[2] *Legea nr. 162/2017 din 6 iulie 2017 privind auditul statutar al situațiilor financiare anuale şi al situațiilor financiare anuale consolidate şi de modificare a unor acte normative,* art. 72.

[3] IAASB *Handbook*, p. 26.

[4] Audit Directive, art. 2.

[5] French Commercial Code, art. L823-2-2.

[6] *Legea nr. 162/2017 din 6 iulie 2017 privind auditul statutar al situațiilor financiare anuale şi al situațiilor financiare anuale consolidate şi de modificare a unor acte normative*, art. 33.

3.3.1 Disclosure of suspected criminal offences and the fight against money laundering and terrorist financing

A distinction must be made between the disclosure of criminal acts on the one hand and the fight against money laundering and the financing of terrorism on the other, although the objective is the same: to have a dissuasive effect on financial crime.

3.3.1.1 Disclosure of alleged criminal acts

It is not a general rule that the auditor must disclose alleged offences to the public prosecutor, i.e. the judicial authorities. It is a matter for the Member States. Neither the ISAs nor the Audit Directive deal with this subject.

European regulations do not cover the disclosure of criminal acts, except in the case of money laundering and terrorist financing.

In France, the obligation to disclose criminal acts has a long history, dating back to the decree-law of 8 August 1935, published after a series of resounding politico-financial scandals, including the Stavisky affair in 1933. This obligation has now been incorporated into the French Commercial Code. "When the statutory auditor concludes that the accounts contain material misstatements resulting from fraud likely to be classified as a criminal offence, he shall disclose the facts to the public prosecutor".[1] The statutory auditor "shall report to the next general meeting assembly or meeting of the competent body any irregularities or inaccuracies discovered in the course of his work and shall disclose to the public prosecutor any criminal offences of which he has become aware, without his liability being incurred as a result of such disclosure".[2] If he fails to do so, the statutory auditor is liable to five years' imprisonment and a fine of €75,000. This refers only to alleged criminal acts detected in the course of the audit, which excludes, for example, a traffic offence committed by the company director. The word "supposed" that we have added is important. The statutory auditor does not have to qualify the offence; he reveals a doubt relating to facts that may be classified as criminal offences. The public prosecutor will be responsible for classifying them as a crime, misdemeanour or offence and will decide what action to take (prosecution or dismissal). The statutory auditor is not obliged to systematically seek out allegedly criminal acts, but has a duty of vigilance.

Finally, the existence of such facts does not automatically lead to disclose a qualified report or a negative assurance on the annual accounts.

Romanian regulations are fairly succinct in this area. Law 162/2017 on statutory audit refers to Article 10 of Regulation 537/2014 of the European Parliament and of the Council of 16 April 2014 on specific requirements for the statutory audit of public interest entities, which requires "a description of the assessed risks of material misstatement, including the risks of material misstatement due to fraud" and International Standard on Auditing ISA 240 "The auditor's responsibilities in relation to fraud in an audit of financial statements".

3.3.1.2. Combating money laundering and terrorist financing

Money laundering is defined as the use of the economic and financial system to benefit legally from the proceeds of illicit activities. According to the OECD, this represents over 2000 billion dollars per year worldwide, i.e. six times Romania's GDP, or 2/3 of France's GDP.

As we said in relation to the disclosure of criminal offences, the ISAs are not intended to interfere with national criminal law. They simply refer to the possibility of auditors becoming involved in the fight against money laundering and the financing of terrorism. "In some jurisdictions, law or regulation may restrict the auditor's communication of certain misstatements to management, or others, within the entity. Law or regulation may specifically prohibit a communication, or other action, that might prejudice an investigation by an appropriate authority into an actual, or suspected, illegal act, including alerting the entity, for example, when the auditor is required to report identified or suspected non-compliance with law or regulation to an appropriate authority pursuant to anti-money laundering legislation. In these circumstances, the issues considered by the auditor may be complex and the auditor may consider it appropriate to obtain legal advice."[3]

The Audit Directive does not address these issues, which are covered by a separate directive: Directive 2005/60/EC of the European Parliament and of the Council of 26 October 2005 on the *prevention of the use of the financial*

[1] French Commercial Code, art. L 823-15,§ 31.
[2] *Ibid*, art. A823-27-1, § 40.
[3] IAASB, *Handbook of International Quality Management, Auditing, Review, Other Assurance, and Related Services Pronouncements*, ISA 450, § A11.

system for the purpose of money laundering and terrorist financing. It applies in particular to statutory auditors and also to accountants in public practice. "Suspicious transactions should be reported to the Financial Intelligence Unit (FIU), which acts as a national centre responsible for receiving, analysing and communicating to the competent authorities reports of suspicious transactions and other information relating to possible money laundering or terrorist financing."[1]

In France, Order 2009-104 of 30 January 2009 requires chartered accountants In France, Order 2009-104 of 30 January 2009 requires accountants and statutory auditors to report suspicious transactions to Tracfin, an intelligence service under the authority of the Ministry of the Economy, Finance and Industrial and Digital Sovereignty. It contributes to the development of a healthy economy by combating clandestine financial circuits, money laundering and the financing of terrorism[2]. Statutory auditors are not obliged to systematically investigate such transactions, but they do have a duty of vigilance, depending on the risks involved. The declaration, whether written or oral, is confidential, as some of these transactions may still be in progress. The statutory auditor is not liable for it. Failure to report suspicions may result in disciplinary action by the H2A and/or criminal penalties.

In Romania, Law no. 129 of 11 July 2019 on the prevention of money laundering lists auditors and in public practice among the entities obliged to report suspicious transactions, on pain of administrative penalties from the competent authorities.[3]

In conclusion, we can see that the auditors are once again quasi auxiliaries of justice and contribute to a public service mission. If it's not the traffickers' *gap expectations* that is shrinking, it's the public's one.

3.3.2. Preventing business failures

We are a long way from a Darwinian conception of business demography. Rather, we are talking about a multi-stakeholder vision of the company, in line with the doctrine of General de Gaulle in France. Shareholders, employees, creditors and other stakeholders are obviously interested in the survival prospects of the entity concerned. There is a strong public demand for an expert, outside view of a company's health and future. Beyond the losses suffered by those who have a contractual relationship with the entity, the negative externalities can be just as significant. For example, the closure of a large factory in a small or medium-sized town can threaten an entire employment area.

The preparers of the financial statements must, of course, ensure that the company is a *going concern* in order, in particular, to carry out impairment tests on certain assets, and the statutory auditors must give their opinion on this going concern. However, information about a possible risk of insolvency does not reach shareholders until the general meeting assembly called to approve the accounts, i.e. several months after the event, which is often too late.

Neither international standards nor European business law address the possibility of a procedure that prioritises prevention through a whistleblowing procedure initiated by the auditor.

In France, following a major wave of business failures in the early 1980s, the legislature took two measures to prevent rather than cure... too late: the publication of forecasts and the early warning procedure. This was the aim of the Act law of 1st March 1984 on the *prevention and resolution of business difficulties*, updated by the *Business Safeguard Act* (loi de sécurité financière) of 26 July 2005.

On the one hand, companies (trading companies, economic interest groupings, etc.) are required to produce forecasts as soon as they have more than 300 employees on permanent contracts or pre-tax sales of more than €18 million. The documents to be provided are as follows: situation of realisable and available assets and current liabilities, projected income statements prepared on a half-yearly basis, cash flow statement and projected financing plan, written report on the development of the company by the Board of Directors or the Management Board. The statutory auditor must: if necessary, draw the attention of management to the absence of forecast documents or, if they exist, check their relevance and consistency. He is not required to give an assurance on these documents. How can he give an audit opinion on the future? Only if he has observations to make, such as unrealistic sales forecasts, will he draw up a report to be sent to the social and economic committee (the body committee where the company's management consults negotiates with employee representatives, the equivalent of the

[1] Directive 2005/60/EC of the European Parliament and of the Council of 26 October 2005 on the *prevention of the use of the financial system for the purpose of money laundering and terrorist financing*. Recital 29.

[2] https://www.economie.gouv.fr/tracfin

[3] *Legea nr. 129 din 11 iulie 2019 pentru prevenirea şi combaterea spălării banilor şi finanțării terorismului, precum şi pentru modificarea şi completarea unor acte normative*, art. 5 & 26.

Betriebsrat in Germany) and to the general meeting assembly of shareholders.

In addition to information, the law provides for action. In the event of doubt about the company's viability, it entrusts the statutory auditor, the social and economic council, shareholders representing more than 5% of voting rights or the president of the commercial court with the task of triggering an alert. In the event of doubt, the statutory auditor must:

1. inform the directors of the reasons for its his action, set out the facts likely to jeopardise the continued operation of the business and ask them what measures they intend to take to rectify the situation;
2. if, and only if, the response is not convincing, it he must refer the matter to the Board of Directors and again raise the question of the measures decisions to be taken;
3. if, and only if, the response is not convincing, he must refer the matter to the General Meeting assembly of Shareholders and submit a report;
4. if, and only if, the response is not convincing, he must refer the matter to the President of the Commercial Court.

This step-by-step approach is gradual and, at least until the general meeting assembly, remains internal to the company, so that publicising the difficulties does not exacerbate them. The statutory auditor is obliged to initiate a warning procedure and has no choice if the situation is alarming. He is not liable for doing so. On the other hand, if he wrongly fails to do so, he may be held civilly liable, provided that it can be shown that there is a causal link between the auditor's negligence and the deterioration in the company's financial situation.

There are no such regulations in Romania.

Obviously, the auditor cannot guarantee that the audited entity will not run into difficulties, only that the forecasts made are reasonable. The early warning procedure can also speed up the decision-making process, which can restore the company's financial equilibrium, which is a significant advantage. This is already a considerable response to the *expectation gap*.

3.3.3 Auditing sustainability information: a mission for the future

This new development in the field of auditing deserves to be developed at greater length because of its importance and novelty.

The fact that a desire for infinite growth in a world that is by definition finite poses a problem is nothing new. Indeed, the idea of the impossibility of unlimited growth was already theorised by Thomas Malthus in 1798[1]. He contrasted the natural growth of the population, doubling every 25 years, with the limited land available to feed this population, exacerbated by decreasing soil yields, as the best land had already been farmed. After the industrial revolution, in 1972, the Club of Rome, which brought together scientists, economists, civil servants and industrialists from 52 countries, published the *Report on the Limits to Growth*.[2] With the first oil crisis in 1973, the prospect of an imbalance between real or perceived needs and the availability of various resources became obvious to a broad public whose daily lives were affected. The trend accelerated from the 2000s onwards. In 2012, according to article 11 of the Treaty on the Functioning of the European Union (TFEU): "Environmental protection requirements must be integrated into the definition and implementation of the Union's policies and activities, in particular with a view to promoting sustainable development". The commitment to sustainable development is also becoming a priority for the United Nations, which adopted the *2030 Agenda for Sustainable Development* in 2015. In 2018, the European Union adopted the *Action Plan: Financing Sustainable Growth*, the *Green Pact for Europe,* which represents the Union's new growth strategy, and the *Strategy for Financing the Transition to a Sustainable Economy*. Much of the world of politics, science and public opinion shares the same concerns. But to move from words to action, legal and management tools had to be devised.

The European Union is at the forefront of this battle, publishing a series of legally binding texts on sustainability and the obligation to provide information in this area:[3]

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[1] Malthus, T. R. (1992), *Essai sur le principe de population*, Flammarion. First edition in English: 1798.

[2] Delaunay, J. (1972), *Halte à la croissance*, Fayard

[3] Directive 2014/95 *on the publication of non-financial and diversity-related information by certain large undertakings and certain groups*; *The Financial Services Sustainability Disclosure Regulation 2019/2088; Delegated Regulation (EU) 2021/2139 supplementing Regu*lation (EU) 2020/852 with *the technical examination criteria for determining under which conditions an economic activity can be considered to contribute substantially to climate change mitigation or adaptation and whether that economic activity does not cause significant harm to any of the other environmental objectives;* Delegated Regulation (EU) 2021/2178 supplementing Regulation (EU) 2020/852 *with details*

These texts have an impact on financing mechanisms, but also on the various markets (goods and services market, labour market, public procurement, etc.) and on public opinion, which is sensitive to the image of companies and therefore obliges them to publish sustainability information. Of course, to ensure that this information is not manipulated with a view to greenwashing, an external and independent validation assurance system has been entrusted to auditors, first and foremost financial auditors. Very briefly, the audit stages are as follows:

1. Who can audit sustainability information? Independent third-party organisations (ITOs) or independent assurance service providers (IAPs), including financial auditors. To be approved, they must complete an eight-month training period with an IAP registered on the list of approved professionals and then pass an examination.
2. What are the different stages of the engagement? The stages are much the same as for accounts financial audits: drafting an engagement letter, familiarising themselves with the file, gathering data, planning the engagement, determining materiality thresholds, checking the regularity, fairness and accuracy of the information and, finally, drafting a report expressing the auditor's opinion.
3. What are the specific features of a sustainability audit? They relate, of course, to the nature of the information produced. The taxonomy regulation[1] sets out the criteria that activities must meet to be eligible for the sustainable activities category, then to be considered as aligned, and finally the performance indicators. In addition, the scope of the information to be published is much broader, since it is not limited to the consolidated group but includes all the activities making up the upstream and downstream value chain.
4. What level of assurance is required? Given the complexity, variety and volume of sustainability information, the auditor can only provide a moderate level assurance. In other words, the auditor can only express an opinion on the concordance, consistency, relevance and plausibility of the information.

The ecological transition and respect for human rights are major social issues that are generating a demand for verifiable and verified information so that we can sanction the relocation of activities that are the most harmful to the environment or that use a workforce subject to conditions that violate their rights (child labour, forced labour, etc.). Auditors play, and will continue to play, an essential role in the implementation of a societal policy, responding to an *expectation gap* that goes beyond the economic sphere.

Conclusion

An increase in the *gap expectations gap* would be poisonous for the company, because a company cannot function without confidence. For a long time, auditing was limited to financial statements and served only the interests of providers of capital, shareholders or creditors. Confidence has made it possible to attract savings to invest and create industrial, service or commercial companies, some of which have gradually conquered the world. But this is the most visible part of the iceberg. SMEs also use auditors to take out bank loans. Employees have also taken an interest in the economic performance of "their" company, because their jobs depend on it. They have access to audited financial statements and, in France, can call on the assistance of an chartered accountant in public practice to interpret them, as part of the company's social and environmental committee[2]. So, little by little, the Western world has

of the content and format of the information to be published by undertakings subject to Article 19a or Article 29a of Directive 2013/34/EU on their environmentally sustainable economic activities, and the method to be followed to comply with that information requirement; Commission Delegated Regulation (EU) 2023/2486 of 27.6. 2023 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by *laying down technical criteria for the examination to determine the conditions under which an economic activity qualifies as an activity which makes a substantial contribution to the sustainable use and protection of water and marine resources and to the transition to a circular economy, the prevention and control of pollution or the protection and restoration of biodiversity and ecosystems and to determine whether the economic activity concerned causes significant damage to any of the other environmental objectives* and to amend delegated Regulation (EU) 2021/2178 *as regards the publication of specific information on those economic activities;* Directive (EU) 2022/2464 *amending Regulation (EU) 537/2014 and Directives 2004/109/EC, 2006/43/EC and 2013/34/EU as regards the publication of sustainability information by companies*; The *European Sustainability Reporting Standards* (ESRS) of the European Financial Reporting Advisory Group (EFRAG).

[1] Delegated Regulation (EU) 2021/2139

[2] In France, article 47 of the law of 22 March 1941 stipulates that the social and environmental committee may be advised by an accountant in public practice. Today, the works council is known as the social and environmental committee.

become aware of the social and environmental responsibility (SER) of companies. Of course, it all starts with a company contract that brings together investors in a project housed in an entity with legal personality. But it interacts with an environment in which it finds opportunities for development, while at the same time bringing it a degree of prosperity and, in particular, jobs. In this way, it benefits free of charge from infrastructure, public services (security, education, health, etc.) and natural resources. On the other hand, this company also poses risks to its environment by destroying jobs, undermining the social balance or consuming non-renewable natural resources.

This realisation has led to an evolution in the theory of the company, which has gone from being contractual to multi-partner and institutional. Partners, including non-contracting partners, politicians, NGOs and the general public, are all demanding accountability and information on sustainability, which must be audited if it is not to be confused with advertising for lobbying or public relations purposes.

We see that today value chains involving hundreds of companies around the world, including SMEs, have acquired an economic weight greater than that of many nations' governments. The Covid crisis showed that they have such power that they effectively control public health policy. No State can accept that such responsibility should be in the hands of a few managers of large companies and, let's stress this point, the myriad of SMEs in their value chain. The same applies to security, defence, town and country planning, education and so on.

By responding to these requests from the public, the auditor will establish himself as an independent third party capable of creating a high level of confidence, enabling a calm dialogue between stakeholders on an unquestionable and undisputed basis. The auditor has a social responsibility.

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List of acronyms

ACCA	Association of Chartered Certified Accountants
AICPA	American Institute of Certified Public Accountants
RFLC	Camera Auditorilor Financiari din România
CECCAR	Corpul Experților Contabili şi Contabililor Autorizați din România
CNCC	Compagnie nationale des commissaires aux comptes
CSRD	Corporate Sustainability Reporting Directive
EFRAG	European Financial Reporting Advisory Group
GIE	Economic Interest Grouping
H2A	High Audit Authority
H3C	Haut conseil du commissariat aux comptes
IAASB	International Auditing and Assurance Standards Board
IASB	International Accounting Standards Board
CICA	Canadian Institute of Chartered Accountants
IES	International Education Standard
IESB	International Education Standards Board
IESBA	International Ethics Standards Board for Accountants
IFAC	International Federation of Accountants
IFRS	International Financial Reporting Standard
ISA	International Standard on Auditing
OECD	Organisation for Economic Co-operation and Development
NGO	Non-governmental organisation
OTI	Independent third-party organisation
PIOB	Public Interest Oversight Board
SMES	Small or medium-sized business
PSAI	Independent insurance services provider
VSES	Very small company

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Professional Judgment and Skepticism Amidst the Interaction of Artificial Intelligence and Human Intelligence

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Abstract

Artificial Intelligence (AI) has revolutionized various industries by learning from data, mimicking human behavior, and making autonomous decisions. However, despite AI's advancements in data processing and decision-making, it cannot fully replicate human attributes such as emotional understanding and ethical judgment. This paper explores the intersection of AI and Human Intelligence (HI) within the audit profession, focusing on the implications for the auditor's professional judgment and skepticism. The integration of AI in auditing promises enhanced efficiency, precision, and data processing capabilities beyond human limits. However, it also raises ethical concerns regarding data privacy, algorithmic bias, and accountability. These concerns highlight the importance of maintaining human oversight and ethical standards in audit practices. Through a comprehensive literature review, this study compares the cognitive abilities, functional capabilities, and ethical implications of AI and human auditors. Key findings underscore AI's potential to complement human auditors by improving accuracy and uncovering anomalies, while recognizing the irreplaceable role of human judgment in complex decision-making processes. The study provides insights into the transformative impact of AI on the audit profession, advocating for a balanced approach that harnesses AI's capabilities while preserving the integrity and critical thinking of human auditors. The findings contribute to a deeper understanding of AI's integration into auditing, informing best practices and guiding future research in maintaining the profession's standards amidst technological advancements.

Key words: *digitalization; digital transformation; Artificial Intelligence; human intelligence; professional judgment; professional skepticism; auditor; audit profession;*

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1. Introduction

Digitalization and digital transformation are at the forefront of the modern business landscape, revolutionizing the way organizations operate and interact with their environments. As part of this shift, Artificial Intelligence (AI) has become an increasingly popular topic in recent decades, characterized by the ability of machines to imitate human behavior and learn and adapt to new situations (Carter & Nielsen, 2017). Technological advances have enabled the development of systems capable of performing tasks previously reserved for humans. AI systems can now be trained to identify patterns and make decisions based on these patterns without explicit programming.

While AI excels at repetitive and predictable tasks, it lacks the flexibility and creativity inherent in human intelligence (HI). Despite AI's impressive capabilities in data processing and decision-making (Pomerol, 1997; Tiron-Tudor *et al.*, 2024), it cannot fully replicate human attributes such as understanding emotions (Martınez-Miranda & Aldea, 2005; Kurzweil, 2006; Luckin, 2018; De Cremer & Kasparov, 2021; Korteling *et al.*, 2021) or making ethical and moral decisions (Embretson, 2004; Carter & Nielsen, 2017; Luckin, 2018; Spector & Ma, 2019; Korteling *et al.*, 2021; Satyawan & Iswati, 2023). Moreover, algorithmic bias can occur when the data used to train a machine learning algorithm reflect the default values of the people involved in the collection, selection, or use of that data. Thus, AI is susceptible to errors and biases, which can arise from the way it is programmed and trained (Tiron-Tudor & Deliu, 2022; Tiron-Tudor *et al.*, 2024). This leads to the pressing question: *How closely can AI get to the HI?*

As AI continues to evolve and improve, its impact on society must be carefully considered. AI holds the potential to bring significant advancements across various industries. However, we must also acknowledge the potential downsides, such as job displacement and increased dependence on computer systems. Furthermore, there is a risk that AI could be misprogrammed or misused, leading to erroneous decisions and unintended consequences (Aitkazinov, 2023). Thus, it is crucial to balance the benefits of AI with a mindful approach to its implementation, ensuring that HI continues to play a vital role in oversight and decision-making processes (Embretson, 2004; Kurzweil, 2006; Carter & Nielsen, 2017; Luckin, 2018; Spector & Ma, 2019; De Cremer & Kasparov, 2021). As AI integrates into various aspects of professional and personal life, it is crucial to examine the challenges that arise from the interaction between AI and HI (Korteling *et al.*, 2021). The integration of AI in various professional fields has sparked significant interest and debate, fundamentally altering the landscape of many professions (Goto, 2021), including the accounting and audit profession (Tiron-Tudor *et al.*, 2024).

In this context, the audit profession is undergoing a seismic shift as AI technologies begin to integrate with traditional auditing practices (Farcane & Deliu, 2020; Chowdhury, 2021; Aitkazinov, 2023; Tiron-Tudor *et al.*, 2024). This integration heralds a new era characterized by the potential for enhanced efficiency, precision, and data processing capabilities beyond human limits (Chowdhury, 2021; Tiron-Tudor & Deliu, 2022). The promise of AI in auditing extends beyond mere automation; it offers a transformative synergy between HI and algorithmic precision that could redefine the essence of auditing practices (Munoko *et al.*, 2020; Deliu, 2024).

Accordingly, the introduction of AI into the audit profession has been met with both enthusiasm and caution, since it introduces both opportunities and challenges (Omoteso, 2012; Farcane & Deliu, 2020; Gultom *et al.*, 2021; Tiron-Tudor & Deliu, 2021, 2022; Fedyk *et al.*, 2022). The benefits of AI, such as time savings, faster data analysis, increased levels of accuracy, and more in-depth insight into business processes, are well-documented (Munoko *et al.*, 2020; Chowdhury, 2021; Aitkazinov, 2023). However, the ethical implications and unintended consequences of AI use in auditing are gradually coming to light, necessitating a thorough examination of its impact on professional ethics (Munoko *et al.*, 2020; Tiron-Tudor *et al.*, 2024).

Moreover, while AI has been shown to have a strong positive relationship with professional skepticism and judgment, enhancing the detection of errors and material misstatements, there are concerns about the potential limitations of AI when it comes to complex judgments that require professional skepticism (Smith, 2019; Spaulding, 2020; Puthukulam *et al.*, 2021). For example, the evaluation of management estimates remains a complex audit task that may be less amenable to AI assistance (Munoko *et al.*, 2020; Chowdhury, 2021). PCAOB (2023) has also recognized the challenges posed by the increasing reliance on technology-based tools in auditing, including the potential for bias in technology-assisted analysis and the need for auditors to remain vigilant in

their skepticism. As algorithms become more prevalent in audit processes, the quality of the output is dependent on a variety of factors, including the quality of the inputs and the inherent perceptions about technology that can lead to bias (Fedyk *et al.*, 2022; Li, 2022). AI technologies, through Big Data & Data Analytics, promise to enhance the efficiency and accuracy of auditing processes by rapidly processing large volumes of data, identifying patterns, and performing repetitive tasks with consistency (Chowdhury, 2021; Aitkazinov, 2023). However, *the ability of AI to fully replicate the nuanced professional judgment and skepticism of human auditors* remains a critical question (Puthukulam *et al.*, 2021; Tiron-Tudor & Deliu, 2022; Deliu, 2024).

Hence, this transformation is particularly relevant in the realm of auditing, a field where the roles of professional judgment and skepticism are paramount (Goto, 2021; Deliu, 2024). In an AI-augmented landscape, the dynamics of professional skepticism are poised for evolution, prompting auditors to recalibrate their approach to the way of collecting audit evidence and the coordinates of their judgment. Auditors rely heavily on their expertise, professional standards, ethical norms, and intuitive judgment to review a company's financial statements, documents, data, and accounting entries (Deliu, 2013). Yet, as the digital metamorphosis of the audit profession unfolds, the principles of professional judgment and skepticism remain more relevant than ever (Puthukulam *et al.*, 2021; Deliu, 2024).

This manuscript ventures into the nexus of AI and HI within the audit domain, critically examining the implications of this convergence for the auditor's professional judgment and skepticism. Through a literature review, the paper endeavors to provide a starting point on an analysis regarding the complexities of AI's influence on auditors' cognitive faculties and their professional conduct. The research objectives are twofold: (1) *to investigate the extent to which AI affects professional judgment and skepticism within the audit profession*, and (2) *to present potential shifts in auditors' methodologies for evidence evaluation and judgment in the presence of AI*. The study aspires to shed light on these aspects, offering new perspectives, as well as a nuanced understanding of the interplay between AI and HI, and contributing to the ongoing discourse on the subject.

As the audit profession navigates this new technological frontier, it is imperative to ensure that the core tenets of professional judgment and skepticism are not only preserved but also enhanced. This research aims to illuminate the path forward, advocating for a harmonious balance between the analytical prowess of AI and the discerning judgment of auditors. In doing so, it seeks to fortify the audit profession against the challenges of the digital age, while harnessing the opportunities that AI presents (Aitkazinov, 2023). In light of these perspectives, by informing both audit practice and academia about these challenges, the paper aims to contribute to the development of best practices that maintain the integrity of the audit profession in an age of AI.

Given these considerations, the primary objective of this paper is to explore the interaction between AI and HI in the context of auditing, with a particular focus on professional judgment and skepticism. We aim to identify the innate characteristics of HI, respectively AI, ultimately understanding how AI can complement human auditors and to what extent it can enhance (or potentially replace) HI in these critical aspects of auditing. Given this background, the *research questions* guiding this study are:

- *RQ1: How do the cognitive abilities of AI compare to the professional judgment and skepticism exhibited by human auditors?*
- *RQ2: What are the specific strengths and limitations of AI in performing tasks traditionally handled by human auditors?*
- *RQ3: To what extent can AI replicate or augment the professional judgment and skepticism required in auditing?*
- *RQ4: What ethical considerations arise from the interaction of AI and HI in the auditing process?*

To address these questions in the current study, as well as to guide further research, we will conduct a comprehensive comparison of the intelligence characteristics of auditors and AI systems. This comparison will be structured around key pillars such as: Cognitive Abilities, Functional Capabilities, Personal and Behavioral Characteristics, Sensory and Physical Attributes, and Emotional and Social Intelligence. By examining the strengths and limitations of both AI and human auditors, this paper seeks to provide insights into the potential for AI to enhance the auditing process while highlighting the areas where human judgment remains indispensable. The ultimate goal is to contribute to a better understanding of how AI can be effectively integrated into the audit profession, ensuring that it supports rather than

undermines the critical role of human auditors in maintaining the integrity and reliability of financial reporting.

The structure of the paper is as follows. The first section is the introduction that sets the stage, followed by the second section that presents the theoretical background delving into the current literature on the role of AI in auditing, comparing it with HI, and highlights the theoretical underpinnings of professional judgment and skepticism. The third section presents the methodology of the paper, elucidating the process of the literature review, while the fourth section presents the findings of the research, detailed in a comprehensive table comparing the intelligence characteristics of auditors and AI systems. Finally, the fifth section presents a discussion that interprets these findings within the broader context of the audit profession, and the sixth section, the conclusion, distills the study's insights and forward-looking recommendations for practice and research.

2. Theoretical background

The foundation of auditing is built on the pillars of professional judgment and skepticism (Deliu, 2013; Goto, 2021; Deliu, 2024). *Professional judgment* in auditing encompasses the application of relevant knowledge and experience within the framework of auditing and accounting standards, alongside ethical principles, to make informed and correct decisions from a set of existing alternatives (Deliu, 2013; Bogdan *et al*., 2020; Deliu, 2020; Puthukulam *et al.*, 2021). *Professional skepticism*, on the other hand, is the auditor's compass, guiding them through the complexities and intricacies of the audit process. This critical, vigilant and questioning mindset is essential for being alert to audit evidence that contradicts other evidence (Spector & Ma, 2019), questioning the reliability of documents and responses, and recognizing conditions that may indicate potential fraud (AFC, 2020; Deliu, 2020; PCAOB, 2023).

The rise of AI introduces new dimensions to these foundational concepts. AI, with its capacity to process vast amounts of data quickly and accurately, offers significant potential benefits to the auditing field (Omoteso, 2012). It enhances efficiency in data processing, risk assessment, and pattern recognition, which are critical components of the auditing process. However, AI also has limitations in areas such as ethical understanding, intuition, and contextual awareness, posing significant challenges, particularly regarding professional judgment and professional skepticism.

Human intelligence (HI) brings intuition, ethical reasoning, and the ability to understand complex, nuanced situations (Sternberg, 1983; Embretson, 2004; Kurzweil, 2006; Luckin, 2018; Spector & Ma, 2019). When integrated with AI, these human attributes can complement the strengths of AI (Carter & Nielsen, 2017; De Cremer & Kasparov, 2021), resulting in a more robust auditing process. This HI – AI interaction can enhance auditors' abilities to detect anomalies and make informed decisions by combining AI's data processing power with human intuition and ethical judgment.

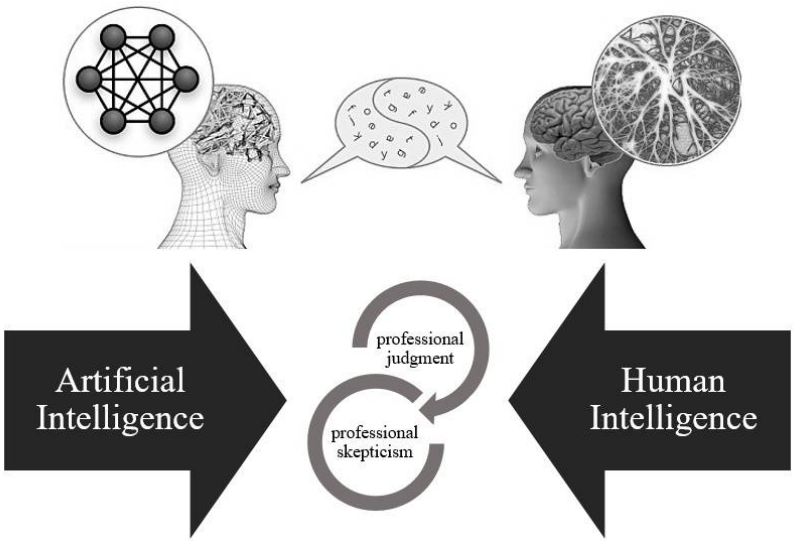
Thus, to fully grasp the dynamics of the opportunities and challenges presented by integrating AI into auditing, it is crucial to explore the theoretical foundations underpinning the roles of professional judgment and skepticism. Understanding how these human attributes interact with AI capabilities is essential. For instance, while AI can rapidly analyze large datasets to identify patterns and anomalies, human auditors must interpret these findings within the broader context of the company's operations and ethical considerations. This collaboration can lead to more accurate and comprehensive audit outcomes.

The theoretical framework of this paper explores the intricate AI – HI interplay, particularly focusing on how this interaction influences and enhances professional judgment and professional skepticism within the auditing profession (***Figure no. 1***).

In this context, the IU – IA interaction in auditing requires auditors to adapt their methodologies and enhance their professional skepticism. They must remain critical of AI-generated data, ensuring they do not blindly trust the technology but instead use it as a tool to augment their judgment (Carter & Nielsen, 2017; Spaulding, 2020; De Cremer & Kasparov, 2021). This balanced approach can mitigate the risks of over-reliance on AI and maintain the integrity of the auditing process.

In conclusion, integrating AI and HI in the audit profession presents both opportunities and challenges. It necessitates a nuanced understanding of how AI's capabilities can complement human judgment and skepticism. By exploring these theoretical foundations, we can better prepare for the future of auditing, ensuring that the profession adapts to technological advancements while upholding its core principles.

Figure no. 1. Theoretical framework



Source: own projection

2.1. Challenges of using AI in complex audit tasks

AI and other emerging technologies are revolutionizing auditing by enhancing efficiency, accuracy, and scope of analysis. AI encompasses a suite of technologies, including Machine Learning (ML), Robotic Process Automation (RPA), Big Data Analytics (BDA), and Blockchain Technology (BT) which collectively have the potential to redefine the audit landscape (Omoteso, 2012; Farcane & Deliu, 2020; Munoko *et al.*, 2020; Chowdhury, 2021; Gultom *et al.*, 2021; Tiron-Tudor & Deliu, 2021, 2022; Fedyk *et al.*, 2022). These technologies are not mere tools for automation; they represent a fundamental change in how data is analyzed and interpreted within the audit process (Fedyk *et al.*, 2022). They enable auditors to process vast amounts of data swiftly and accurately, identifying patterns and anomalies that might be missed by human auditors.

Thus, the role of AI in auditing is expanding, driven by its potential to enhance efficiency, accuracy, and consistency. AI technologies can automate routine, repetitive, and time-consuming tasks, such as data entry, transaction testing, reconciliation, and preliminary analysis. This automation allows human auditors to focus on more complex aspects of the audit, that require extensive judgments and sophisticated reasoning.

ML, a core component of AI, allows systems to learn from data patterns and improve over time without direct programming (Kurzweil, 2006; Luckin, 2018). In auditing, ML algorithms excel at effectively and comprehensively scrutinizing and analyzing extensive financial datasets to pinpoint irregular patterns and to uncover anomalies that might be overlooked in manual reviews (Luckin, 2018), respectively trends and risks that might elude human scrutiny (Chowdhury, 2021), thereby enhancing the detection of errors and fraud (AFC, 2020). This capability proves invaluable in auditing, given the escalating volume and intricacy of data being handled, supporting risk assessments, project scoping, and the proactive identification of potential issues and Key Audit Matters (ISACA, 2021). For instance, ML techniques can also detect fraudulent transactions and identify high-risk issues, such as unknown system activity from user endpoints (Chowdhury, 2021). These capabilities are reshaping the audit process, making it more efficient and effective (Fedyk *et al.*, 2022).

RPA, as well, revolutionizes assurance services by automating repetitive and rule-based tasks traditionally performed by humans. In the audit context, RPA software mimics human actions to streamline processes (i.e., data entry, reconciliation, and report generation) with

unprecedented accuracy and efficiency. For instance, they can process large amounts of data (i.e., reading bank statements and legal contracts), and reconcile accounts much faster than a human auditor can, and with fewer errors (EY, 2023). By reducing manual effort in routine tasks, RPA allows auditors to allocate more time and resources to complex and judgment-intensive aspects of audits, such as risk assessment and strategic analysis. Moreover, RPA enhances audit quality by minimizing errors and inconsistencies inherent in manual data processing, thereby improving overall reliability and confidence in audit findings. As auditors accept and embrace digital transformation, RPA emerges as a critical enabler for achieving operational efficiencies and enhancing the value proposition of audit services in a rapidly evolving business landscape.

Similarly, BDA enable auditors to perform comprehensive analyses of financial statements, leveraging vast datasets (Li, 2022) to gain deeper insights into financial health and risks (Tiron & Deliu, 2021). For example, AI can analyze entire datasets rather than relying on sampling methods traditionally used by human auditors. Consequently, by harnessing advanced analytical techniques and tools, auditors can uncover hidden patterns, correlations, and anomalies within financial data that traditional methods might overlook. BDA capabilities enable auditors to perform more thorough risk assessments and substantive testing, potentially leading to more accurate and reliable audit outcomes. Furthermore, BDA enables auditors not only to detect potential fraud or errors (AFC, 2020) but also to provide more accurate forecasts and assessments of financial performance (Tiron-Tudor & Deliu, 2021). This capability is increasingly crucial as businesses handle ever-growing volumes of data, ensuring auditors can deliver robust and insightful audits that meet the evolving needs of stakeholders. This is particularly pertinent in areas such as sustainability reporting (Deliu, 2024), where companies subject to the Corporate Sustainability Reporting Directive (CSRD) will soon be required to adhere to European Sustainability Reporting Standards (ESRS).

In the same vein, Blockchain Technology (BT) offers auditors a revolutionary tool for ensuring the integrity and traceability of financial transactions. By leveraging decentralized and tamper-proof digital ledgers, BT provides an immutable audit trail that records every transaction in a transparent and secure manner (Farcane & Deliu, 2020). This technology enhances audit efficiency by reducing the time and resources required to verify transactions and trace financial flows. Moreover, BT enhances trust and confidence among stakeholders by providing real-time access to verified transaction records, mitigating the risk of fraud and improving overall transparency in financial reporting. As auditors adapt to increasingly digital business environments, BT emerges as a critical asset for conducting audits with heightened accuracy, reliability, and trustworthiness.

In this background, leading companies like the Big Four – Deloitte, PwC, EY, and KPMG – are at the forefront of integrating these technologies into their audit practices. Deloitte's Omnia DNAV platform, for example, leverages AI and BDA to perform advanced audit analytics (Deloitte, 2020). PwC's Halo suite uses AI and ML for real-time monitoring and analysis of transactions (PwC, 2019). EY's Helix is a suite of analytics tools that improve the risk assessment process (EY, 2017). KPMG's Clara platform integrates AI to enhance audit quality and efficiency (KPMG, 2021). These examples illustrate how AI and emerging technologies are not just augmenting traditional auditing processes but are fundamentally transforming the audit profession, leading to more robust and reliable "financial oversight" (Tiron-Tudor & Deliu, 2022).

Predictive Analytics (PA), a technique that leverages data to create mathematical models for forecasting, is revolutionizing the accounting and auditing profession. This approach can be highly beneficial both internally and externally within an organization (Huerta & Jensen, 2022; Tiron-Tudor & Deliu, 2022). Given the critical role of external auditing, the use of PA for assurance purposes is becoming increasingly prevalent. This involves the adoption of sophisticated platforms, tailored applications, and specialized personnel training. For instance, EY's Helix suite of analytics tools exemplifies how PA is being seamlessly integrated into the assurance workflow.

Hence, since precision in auditing is essential, the Big Four companies utilize specialized audit software to achieve this standard. Deloitte's TeamMate, PwC's Aura, EY's Canvas, and KPMG's Clara are prime examples of tools designed to enhance risk assessment, audit planning, data analysis, documentation, and the creation of detailed audit reports, that also include Key Audit Matters (Huerta & Jensen, 2022; Tiron-Tudor & Deliu, 2022). The integration of technology and assurance transforms audits from mere compliance tasks into strategic initiatives.

Henceforth, AI holds the potential to significantly enhance audit quality and efficiency by augmenting, automating, and scaling up human expertise. By taking over routine tasks, AI enables auditors to dedicate more time to areas demanding professional skepticism and judgment (Carter & Nielsen, 2017; De Cremer & Kasparov, 2021). This shift allows auditors to focus on strategic activities that benefit from human insight (i.e., interpreting complex transactions and offering advisory services) (Tiron-Tudor & Deliu, 2022).

However, while AI offers numerous advantages, it also presents challenges in *complex audit tasks* that require deep professional skepticism and judgment. One of the primary concerns is the "black box" nature of some AI systems, where the decision-making process is not transparent or easily understood (Pomerol, 1997; Tiron-Tudor *et al.*, 2024). This opacity can be problematic in auditing, where *transparency* and the ability to explain findings are paramount. Auditors must ensure that AI's limitations do not undermine the quality of the audit and that they continue to apply their professional judgment effectively (Fedyk *et al.*, 2022).

Complex audit tasks (i.e., evaluating management estimates or detecting subtle signs of fraud) may still necessitate human intervention (AFC, 2020). AI systems may not fully capture the nuances and contextual factors that auditors consider when making judgments. Therefore, auditors must be vigilant in overseeing AI's contributions to the audit process (Munoko *et al.*, 2020; Fedyk *et al.*, 2022). In this context, they must ensure that they understand how AI tools arrive at their conclusions and that these tools are used in a way that complements, rather than replaces, professional judgment (Carter & Nielsen, 2017; Malone, 2019; De Cremer & Kasparov, 2021).

Another challenge is the potential for AI to perpetuate or even amplify *biases* present in the underlying data. Auditors must maintain professional skepticism and be vigilant in identifying and mitigating these biases to ensure that AI tools do not lead to discriminatory, unfair or unethical outcomes. This requires a deep understanding of the data, the algorithms, and the context in which they are applied.

Additionally, the development and maintenance of AI systems require *specialized technical expertise*, especially in the context of the concerns regarding data privacy and security, potential biases within AI algorithms, and the ethical implications of relying on automated decision-making (Pomerol, 1997; Aitkazinov, 2023; Tiron-Tudor *et al.*, 2024).

Despite all these challenges, the opportunities presented by AI in auditing are vast. AI can enhance the auditor's ability to detect fraud and provide more insightful analysis (Aitkazinov, 2023). Therefore, as the technology continues to evolve, it is likely that AI will play an increasingly central role in the audit process (Fedyk *et al.*, 2022), shaping the future of the profession gradually (Kurzweil, 2006).

Consequently, AI represents a transformative force in auditing, offering significant benefits in terms of efficiency, accuracy, and depth of analysis. As the profession navigates this technological evolution, auditors must balance the use of AI with the maintenance of professional judgment, professional skepticism and ethical standards. The successful integration of AI into auditing will require a collaborative effort between technology experts and audit professionals to ensure that the benefits of AI are fully realized while its challenges are effectively managed.

2.2. Balancing HI and AI in audit

AI has emerged as a powerful tool across auditing. AI systems are designed to perform tasks that typically require HI (i.e., learning from data, recognizing patterns, and making decisions). AI can be broadly categorized into two types: *narrow AI*, which is specialized for specific tasks (i.e., language translation, fraud detection), and *general AI*, which aims to replicate human cognitive abilities across a wide range of activities, although this remains largely theoretical at present.

HI, in contrast, is characterized by its broad range of cognitive abilities. These include learning from experience, understanding complex ideas, solving problems, and adapting to new situations (Sternberg, 1983; Embretson, 2004; Kurzweil, 2006; Luckin, 2018; Spector & Ma, 2019). HI is not merely a function of processing speed or memory capacity but also involves emotional and social intelligence, ethical judgment, and intuitive judgment (Martınez-Miranda & Aldea, 2005; Korteling *et al.*, 2021). These attributes enable humans to understand context, apply ethical considerations, and navigate complex social interactions (Satyawan & Iswati, 2023).

The interaction between AI – HI in the context of auditing raises several important questions. While AI can process large volumes of data with high accuracy and speed, its ability to replicate the nuanced understanding and ethical judgment inherent to HI is limited (Smith, 2019; Spaulding,

2020; Korteling *et al.*, 2021). This distinction becomes particularly important in auditing, where professional judgment and skepticism are crucial (Puthukulam *et al.*, 2021). AI technologies can assist auditors in processing and analyzing large volumes of data, enabling them to focus on higher-level judgment and judgment tasks. For example, ML algorithms can be trained to recognize indicators of fraudulent activity (AFC, 2020; Chowdhury, 2021), which auditors can then investigate further using their professional judgment. This symbiotic relationship between AI and HI can lead to more accurate and reliable audit outcomes.

Additionally, the AI – HI interaction hinges on finding a balance where AI augments human capabilities without undermining ethical principles (Carter & Nielsen, 2017; De Cremer & Kasparov, 2021). This balance requires ongoing education and training for professionals to understand AI's limitations and potential biases (Luckin, 2018). It also involves developing AI systems that are aligned with ethical standards and societal values.

In this sense, one approach is the concept of *"*Human-in-the-Loop*"* systems, where AI assists but does not replace human decision-making (Pomerol, 1997; Malone, 2019). This approach ensures that human judgment remains central, allowing for ethical considerations to be integrated into the decision-making process (Malone, 2019; Munoko *et al.*, 2020). For instance, in using drones for stock counts, human oversight can intervene in critical situations, ensuring that ethical decisions are made in scenarios where AI might fail.

In a new scenario known as *"Auditor-Governing-the-Loop"*, auditors are deeply engaged in overseeing AI models. Here, they monitor and supervise these models closely, ready to intervene if the AI encounters unexpected or undesirable incidents, such as model failures (Tiron-Tudor & Deliu, 2022). According to this framework, the collaboration between humans and computer systems should transcend mere integration, aiming to collectively enhance the auditing profession's capabilities and shape its future (Kurzweil, 2006; Tiron-Tudor & Deliu, 2022).

Consequently, the AI – HI interaction in auditing is a dynamic and evolving relationship that presents both opportunities and challenges. AI's capacity to augment human expertise with advanced data processing and analytical capabilities has the potential to significantly enhance the audit profession. However, this integration also necessitates a re-evaluation of the auditor's role and the development of new competencies.

2.3. The promise and peril of AI in professional judgment and professional skepticism

The *identity of audit professionals* is traditionally marked by several *key attributes* that define their role and responsibilities: professional judgment, professional skepticism, independence, and acting for the public interest (Deliu, 2013; Deliu, 2020; Goto, 2021). Professional judgment is paramount, encompassing the application of relevant knowledge and experience within the framework of auditing standards to make informed decisions. Equally important is professional skepticism, which involves a critical and questioning mindset (Spector & Ma, 2019), alert to potential misstatements and the reliability of audit evidence. Independence is another crucial marker, ensuring that auditors remain unbiased and impartial, free from any conflicts of interest. Acting for the public interest is fundamental, as auditors are entrusted with upholding the integrity of financial reporting and protecting stakeholders. Additionally, audit professionals are characterized by their adherence to ethical standards, commitment to continuous learning, and the ability to adapt to evolving regulatory and technological landscapes. Together, these attributes form the *core identity of audit professionals*, underpinning their critical role in maintaining trust and transparency in financial markets (Goto, 2021).

According to the specialty literature, AI has a particularly significant impact on the attributes of professional judgment and professional skepticism (Deliu, 2013; Deliu, 2020). Therefore, in this increasingly AI-driven audit landscape, it is vital to explore the evolving role of auditors and how AI influences their professional judgment and skepticism (Puthukulam *et al.*, 2021). Further research must delve into both the potential benefits and limitations of integrating AI into these critical areas of auditing, providing a comprehensive understanding of the changes and challenges facing the profession.

Professional judgment in auditing involves the application of auditors' knowledge and experience in order to critically evaluate information, identify key issues, interpret evidence, and make informed decisions from a set of possible alternatives (Deliu, 2013; Spector & Ma, 2019). This multifaceted cognitive process is inherently complex and context-dependent, demanding a high level of

expertise and reasoning (Bogdan *et al.*, 2020). It involves the application of knowledge, experience, and critical thinking (Spector & Ma, 2019; Satyawan & Iswati, 2023) to navigate through complex audit tasks. In this context, practitioners must not only assess financial data but also understand the business context, industry trends, and regulatory environment (Bogdan *et al.*, 2020).

Professional skepticism is a fundamental aspect of auditing, as well, characterized by a questioning mindset and heightened alertness to conditions that may indicate potential misstatements due to error or fraud (Olsen & Gold, 2018; AFC, 2020). Auditors critically assess audit evidence, seek corroboration, and remain vigilant for inconsistencies or anomalies. This mindset helps auditors identify and investigate potential risks, ensuring the reliability and accuracy of financial statements. It is the auditor's duty to remain skeptical, not only to detect errors and fraud but also to ensure the integrity of the audit process (Fedyk *et al.*, 2022). The importance of skepticism is even greater in the face of new challenges brought about by the adoption of emerging technologies in auditing (AFC, 2020).

The introduction of AI into auditing brings new dimensions to these two attributes that define the role and responsibilities of auditors.

First, as regards *professional judgment*, AI has the potential to revolutionize it by offering unprecedented levels of efficiency, accuracy, and data-driven insights. AI's data-driven approach can enhance certain aspects of professional judgment by quickly processing and analyzing large datasets to identify anomalies. The integration of AI into professional judgment has the potential to significantly enhance the auditor's judgment capabilities by providing deeper insights into financial data and identifying patterns that may indicate risks or anomalies. However, it also presents significant ethical dilemmas. One primary concern is the reliance on AI tools built by humans that introduces the bias of human judgment and stereotyping (ISACA, 2021). This can lead to the risk of over-reliance, where auditors may become complacent and overly dependent on AI-generated insights without applying their professional judgment (Bogdan *et al.*, 2020). Professionals might be tempted to defer to AI-driven decisions, potentially neglecting their critical thinking and judgment (Spector & Ma, 2019). This can lead to a loss of accountability, as decisions become increasingly opaque and difficult to challenge (Tiron-Tudor *et al.*, 2024). Additionally, inadequate testing of AI outcomes can produce questionable results or audit outcomes, and human logic errors might hinder the development of AI algorithms used for auditing. Therefore, auditors must maintain a thorough understanding of the AI tools they use, including their limitations and the underlying assumptions of the algorithms, to ensure the integrity and reliability of the audit process (Fedyk *et al.*, 2022). This understanding is crucial to ensure that AI supports, rather than undermines, the auditor's professional judgment.

Second, as regards *professional skepticism*, prudence plays a crucial role in mitigating the risks associated with AI integration. There is a risk that auditors may become over-reliant on AI tools which may have inherent biases or limitations, potentially leading to a diminution of professional skepticism (Olsen & Gold, 2018). Auditors must remain vigilant and ensure that they critically evaluate the outputs of AI systems and consider alternative explanations for the findings. They must also be aware of the potential biases within AI algorithms and the ethical implications of automated decision-making (Pomerol, 1997; Mökander, 2023). Thus, audit professionals must maintain a critical stance towards AI outputs, questioning the data, algorithms, and ethical implications of AI-driven decisions (Olsen & Gold, 2018; Fedyk *et al.*, 2022). This skepticism ensures that AI serves as an aid to human judgment rather than a replacement (Carter & Nielsen, 2017; Malone, 2019; De Cremer & Kasparov, 2021). For example, in an audit engagement, AI tools can analyze legal documents and predict outcomes based on historical data (Huerta & Jensen, 2022). However, auditors must scrutinize these predictions, considering the unique circumstances of each case and the potential biases in the AI's training data (Fedyk *et al.*, 2022). Additionally, AI's ability to exercise professional skepticism is limited, per se, by its reliance on predefined algorithms and lack of contextual understanding (Olsen & Gold, 2018). While AI can flag unusual transactions or discrepancies, the interpretative and judgmental aspects of skepticism still require human oversight. By fostering a culture of skepticism, professionals can better balance the insights provided by AI with their ethical obligations and professional expertise.

As observed above, AI's impact on professional judgment and skepticism extends to the ethical concerns surrounding data privacy, algorithmic bias, and auditor's accountability (Tiron-Tudor *et al.*, 2024). Auditors must ensure that the data used by AI systems is handled in accordance with privacy laws and regulations (Mökander, 2023). Additionally, concerns arise about algorithmic bias, where AI systems may

unfairly discriminate against certain groups or individuals in their outcomes (Bogdan *et al.*, 2020). Moreover, as companies increasingly adopt AI, they face unique challenges such as maintaining data integrity, ensuring security, preserving privacy, and meeting regulatory requirements (EY, 2023; Mökander, 2023; Tiron-Tudor *et al.*, 2024). In this context, the objectivity, transparency, accuracy, and explainability of AI models are becoming increasingly relevant, especially as legislative initiatives like the forthcoming EU AI Act evolve (EP, 2023).

To navigate these challenges, auditors must deepen their understanding of AI technologies and their applications. They should advocate for transparency and accountability in AI systems, ensuring that the decision-making processes of these systems are explainable and justifiable (Pomerol, 1997; Mökander, 2023). Thus, auditors must ensure that their practices align with professional standards and societal expectations.

Consequently, while AI has the potential to significantly enhance professional skepticism and judgment in auditing by providing powerful tools for data analysis and risk assessment, it is imperative that auditors maintain a critical mindset and ethical approach when integrating AI into their work (Olsen & Gold, 2018). They must approach the integration of AI with caution, ensuring that they maintain the critical thinking and judgment skills that are the hallmark of the profession (Spector & Ma, 2019). As AI continues to evolve, it will become increasingly important for auditors to develop skills in interpreting and validating the results provided by AI systems (Spector & Ma, 2019). This may involve a combination of traditional auditing knowledge and new competencies in data science and AI (Satyawan & Iswati, 2023). Ongoing education and training will be essential to equip auditors with the necessary skills to effectively integrate AI into their professional judgment processes (Luckin, 2018; Spector & Ma, 2019). This may also involve developing new guidelines and frameworks for the use of AI in auditing (Mökander, 2023) to help auditors develop their professional judgment and maintain their skeptical mindset in an increasingly automated environment.

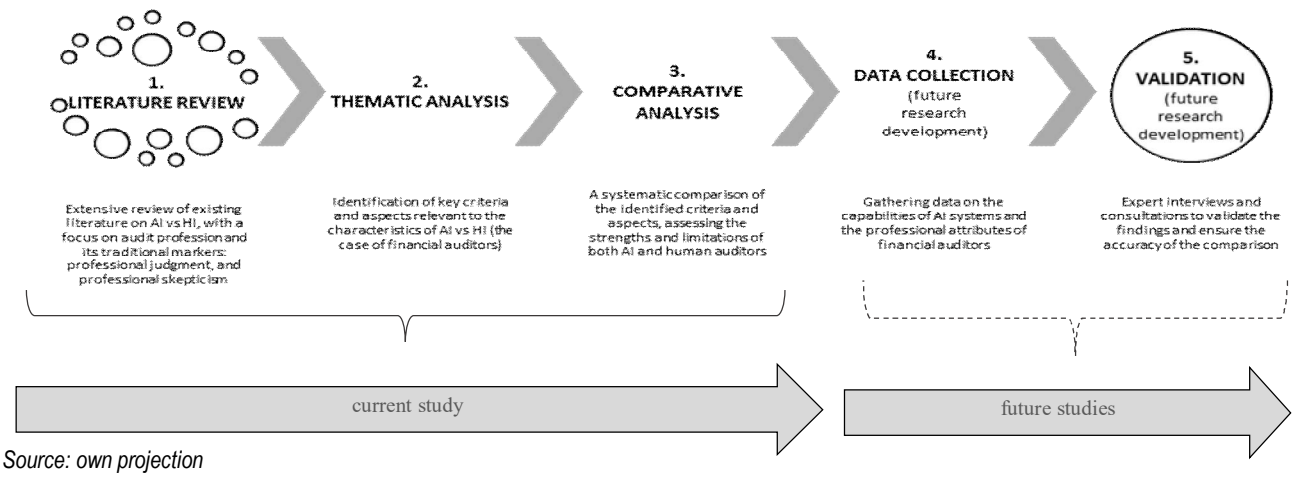
3. Methodology

The research design follows a qualitative methodology, utilizing a *systematic literature review* as the primary method for data collection and analysis. This approach is chosen for its suitability in comprehensively understanding complex phenomena and developing a theoretical framework based on existing literature (Levy & Ellis, 2006).

The research methodology for this study involved a detailed comparative analysis of the intelligence characteristics of auditors and AI systems.

The study was conducted in several structured phases (***Figure no. 2***) to ensure a comprehensive understanding of how AI can complement or replace HI in the context of auditing, with a specific focus on the auditor's professional judgment and skepticism.

Figure no. 2. Research methodology



Source: own projection

The *first* phase involved an extensive *review of existing literature* comparing HI and AI in auditing. The literature review focused on understanding the concepts of professional judgment and skepticism, their application in the audit profession, and the current capabilities of AI in performing tasks traditionally handled by human auditors. This phase included reviewing academic papers, industry reports, and case studies to gather insights into how AI is being used in auditing and the challenges and opportunities it presents. Regarding data collection methods, the literature review process began with a structured search for relevant literature across multiple databases, including Web of Science and Scopus. Keywords such as "artificial intelligence", "human intelligence", "audit profession", "professional skepticism", and "professional judgment" were used in various combinations to ensure a wide coverage of the topic. Inclusion criteria were established to select studies that specifically address the interaction between AI and HI within the audit profession and its impact on the auditor's professional judgment and skepticism.

In the *second* phase, the collected literature underwent a *thematic analysis* to identify recurring themes and debates. This involved coding the literature into categories (pillars) and sub-categories (criteria) based on the research objectives and synthesizing the information to draw meaningful insights relevant to the study. Through this analysis, we identified key pillars and criteria pertinent to the characteristics of HI and AI in auditing, with a focus on professional judgment and skepticism. Essential attributes and capabilities that auditors must possess (i.e., analytical skills, ethical judgment, intuition, and contextual understanding) were highlighted. Simultaneously, the capabilities of AI systems in relation to these attributes, were examined, with a focus on their data processing, pattern recognition, and decision-making abilities. The dimensions were categorized into pillars, with each general category (pillar) further developed into corresponding sub-categories (criteria) derived from the literature review. This categorization provided a structured framework for understanding the different aspects of both HI and AI, facilitating a more systematic analysis of their strengths and weaknesses.

In the *third* phase, a systematic comparative analysis of the identified criteria and aspects was conducted, with an assessment of all aspects referring to the HI, respectively AI. This facilitated identifying strengths and limitations of both AI and human auditors, as well as an evaluation of the qualitative attributes of professional judgment and skepticism (i.e., ethical judgment and intuition), inherently human, versus the performance of AI systems in terms of speed, accuracy, and consistency in data processing and pattern recognition tasks.

The *fourth* phase, reserved for future research developments, will focus on gathering data on the capabilities of AI systems and the professional attributes of auditors. Data collection may involve surveys and questionnaires (that may be distributed to auditors to gather insights into their professional judgment and skepticism practices), and/or interviews (conducted with experts in AI and auditing to understand the practical applications and limitations of AI in the field). By this, a gap analysis may be performed, in order to identify the gaps where AI falls short compared to human auditors and where it can potentially enhance the auditing process.

The *fifth* phase, also reserved for future studies, involves validating the findings through expert interviews and consultations. This phase will aim to ensure the accuracy of the comparison and to gather feedback from practitioners and academics in the field of auditing and AI. The validation process may include: expert panels (i.e., engaging panels of auditors and AI experts to review and discuss the findings), pilot testing (implementing AI tools in real-world auditing scenarios to test their effectiveness and gather practical insights, as well as examples of good practices), and/or continuous feedback (collecting ongoing feedback from industry stakeholders to refine and update the research findings).

This approach ensures that the study is grounded in both theoretical insights and practical considerations, offering a balanced view of the potential for AI to enhance the audit profession while highlighting the irreplaceable elements of human judgment and skepticism.

4. Results

Our study provides a comprehensive comparison of HI and AI across various dimensions. It encompasses a detailed analysis of HI and AI across multiple pillars and criteria. **Table no. 1** presents a structured overview of these intelligence aspects, facilitating a systematic examination. The table breaks down the aspects of intelligence (i.e., *pillars*), categorizing them under broader dimensions (i.e., *criteria*) and specifying their relevance to AI and HI.

Thus, it categorizes intelligence, per se, into five major pillars: Cognitive Abilities, Functional Capabilities, Personal and Behavioral Characteristics, Sensory and Physical Attributes, and Emotional and Social Intelligence. Each pillar is further broken down into specific criteria and dimensions relevant to professional judgment and skepticism, allowing for a nuanced comparison of AI and human auditors' strengths and limitations. For each criterion, the attributes and assessments for both HI and AI, are detailed, with a focus on their respective capabilities and constraints.

Table no. 1. Comparison of intelligence characteristics required by auditors and capabilities of AI in auditing

Pillar	Criteria	AI	HI
1. COGNITIVE ABILITIES	*1.1. Data Processing & Analysis*	Can process and analyze large datasets rapidly and with high accuracy. Uses algorithms to detect patterns and anomalies.	Excels in understanding context and making nuanced judgments. Interprets findings based on experience and industry knowledge.
	1.2. Efficiency & Automation	Automates routine tasks, increasing efficiency and allowing focus on strategic areas.	Cannot match AI's speed but excels in tasks requiring deep understanding and subtleties.
	1.3. Risk Identification & Assessment	Applies analytics to detect risks and anomalies, enhancing the auditor's ability to identify and assess risks.	Uses judgment and experience to assess risks, considering both quantitative and qualitative factors.
	1.4. Learning & Adaptation	Learns from data over time but is limited to patterns within its training data.	Continuously learns and adapts from a broad range of experiences and knowledge.
	1.5. Decision-Making	Makes decisions based on pre-defined algorithms and data patterns. Struggles with ambiguous or incomplete data.	Capable of making complex decisions that involve ethical considerations, ambiguity, and incomplete information.
	1.6. Understanding of Context	May not fully understand the context or the 'why' behind data.	Has a deep understanding of context, which is critical for evaluating audit evidence and the significance of audit findings.
	1.7. Strategic Thinking	Follows programmed strategies but cannot create new strategies.	Capable of strategic thinking and long-term planning based on a holistic understanding of the business environment.
2. FUNCTIONAL CAPABILITIES	*2.1. Adaptability to Change*	Requires reprogramming or retraining to adapt to new scenarios.	Naturally adapts to new situations and can handle unexpected changes with ease.
	2.2. Audit Quality & Assurance	Can improve certain aspects of audit quality but cannot assure the overall quality of an audit.	Responsible for the overall quality and assurance of the audit, ensuring compliance with standards and regulations.
3. PERSONAL & BEHAVIOURAL CHARACTERISTICS	*3.1. Creativity & Innovation*	Limited to its programming and cannot conceive original ideas or creative solutions.	Can think creatively, generate new ideas, and innovate beyond existing paradigms.
	3.4. Professional Reasoning	Lacks the ability to exercise professional judgment.	Possesses professional judgment that is honed through experience and is crucial for audit quality.
	3.4. Continuous Learning	Can update its algorithms based on new data but does not 'learn' in the human sense.	Engages in continuous professional development to stay updated with the latest industry practices and standards.

Pillar	Criteria	AI	HI
4. SENSORY & PHYSICAL ATTRIBUTES	*4.1. Physical Coordination*	High level of dexterity and coordination.	Varies; often limited in complex tasks.
	4.2. Sensory Perception	Integrates multiple sensory inputs seamlessly.	Depends on sensors; may lack integration.
	4.3. Data Storage & Retrieval	Limited by biological constraints.	Can store and retrieve vast amounts of data accurately and rapidly.
5. EMOTIONAL & SOCIAL INTELLIGENCE	*5.1. Ethical & Regulatory Compliance*	Must operate within ethical and regulatory frameworks. Transparency and explainability are crucial.	Bound by professional ethics and standards. Accountable for judgments and decisions.
	5.2. Collaboration & Communication	Lacks the ability to collaborate or communicate like humans. Serves as a support tool.	Essential for interpreting AI findings, communicating results, and providing advisory services.
	5.3. Emotional Intelligence	Incapable of understanding or expressing emotions.	Can perceive and interpret emotional cues, which is important for team dynamics and client interactions.
	5.4. Client Relationships	Does not manage client relationships.	Builds and maintains client relationships, which are essential for successful audit engagements.

Source: own projection

The fundamental nature of AI and HI is characterized by their origins and inherent capabilities. AI's nature is computational, designed to process data and execute tasks with a level of speed and precision that is unattainable for humans (Korteling *et al.*, 2021). Its algorithmic foundation allows it to perform complex calculations and data analyses rapidly, making it an invaluable asset in handling the quantitative aspects of auditing. HI, however, is organic and intuitive, capable of understanding the subtleties and nuances that AI cannot compute (Sternberg, 1983; Embretson, 2004; Kurzweil, 2006; Luckin, 2018; Spector & Ma, 2019). Human auditors bring a wealth of experience and contextual knowledge to the table (Satyawan & Iswati, 2023), enabling them to interpret data within the broader framework of industry practices, economic conditions, and organizational culture.

Cognitive abilities encompass the intellectual processes used to perceive, reason, and judge. AI excels in tasks that require computational judgment (Embretson, 2004), such as identifying discrepancies in financial statements or predicting trends based on historical data (Huerta & Jensen, 2022). Its cognitive abilities are rooted in its programming and the quality of data it has been trained on. Thus, AI systems, while powerful, operate within the constraints of their programming (Korteling *et al.*, 2021), lacking the ability to understand the broader business context, to interpret nuanced information, and to apply ethical considerations (Embretson, 2004). AI decisions are based on algorithms and statistical models, which can sometimes lead to incorrect conclusions if not properly supervised (Malone, 2019). Human auditors, conversely, use cognitive abilities that include critical thinking, problem-solving, and the application of professional judgment (Kurzweil, 2006; Spector & Ma, 2019; Bogdan *et al.*, 2020; Gultom *et al.*, 2021). They can understand complex concepts, evaluate the implications of audit findings, and make informed decisions based on a combination of empirical evidence and professional expertise.

Functional capabilities refer to the practical application of skills to perform specific tasks. AI's functional capabilities are defined by its ability to automate processes, analyze data, and provide insights based on predefined parameters (Korteling *et al.*, 2021). It is particularly effective in performing repetitive tasks with high accuracy, such as data entry and validation (Embretson, 2004). Human auditors offer functional capabilities that AI cannot replicate, such as physical presence during inventory counts, understanding the physical aspects of an organization's operations, and applying hands-on experience to assess the real-world implications of audit findings (Gultom *et al.*, 2021).

Personal and behavioral characteristics include traits such as creativity, innovation, and continuous learning.

AI's capabilities in these areas are limited to the scope of its programming and the data it has been exposed to (Embretson, 2004; Li, 2022). It does not possess the ability to think outside the box or engage in creative problem-solving. Human auditors, in contrast, are capable of creative thinking (Korteling *et al.*, 2021), developing innovative solutions to complex problems (Bogdan *et al.*, 2020), and adapting their approach based on new information or changing circumstances (Kurzweil, 2006; Gultom *et al.*, 2021). They also exhibit personal characteristics such as integrity, accountability, and ethical behavior (Li, 2022; Satyawan & Iswati, 2023), which are essential for maintaining the trust and credibility of the audit profession.

Sensory and physical attributes play a role in auditing, particularly in tasks that require direct interaction with the physical environment. AI does not possess sensory experiences or physical attributes (Embretson, 2004), operating strictly within the digital realm. Human auditors, however, may use their senses to observe, touch, and assess physical assets (Korteling *et al.*, 2021; Satyawan & Iswati, 2023). They can conduct on-site inspections, engage in face-to-face meetings, and perform tasks that require a physical presence, such as verifying the existence of tangible assets.

Emotional and social intelligence are critical in the audit profession, where understanding client needs, managing relationships, and navigating ethical dilemmas are daily tasks. AI lacks emotional intelligence (Korteling *et al.*, 2021) and cannot engage in the social aspects of an audit engagement, such as negotiating with clients or understanding the emotional underpinnings of organizational behavior (Satyawan & Iswati, 2023). Human auditors, on the other hand, are adept at reading emotional cues, demonstrating empathy, and building relationships with clients (Martınez-Miranda & Aldea, 2005; Kurzweil, 2006; Bogdan *et al.*, 2020). Their ability to understand and manage emotions plays a significant role in conducting and effective audit process and delivering insights with tact and sensitivity (Martınez-Miranda & Aldea, 2005).

In a nutshell, this detailed comparison highlights the complementary strengths and limitations of auditors and AI. Auditors excel in professional judgment, professional skepticism, and nuanced decision-making, all of which are critical for effective auditing (Pomerol, 1997; Olsen & Gold, 2018; Li, 2022). They bring creativity, intuition, ethical understanding, and emotional intelligence to their work (Martınez-Miranda & Aldea, 2005; De Cremer & Kasparov, 2021) – dimensions that AI cannot fully replicate. AI, however, offers unparalleled speed, efficiency, scalability, and data handling capabilities, making it a valuable tool to augment human auditors' work (Carter & Nielsen, 2017). The integration of AI in auditing can enhance accuracy and efficiency (Korteling *et al.*, 2021), but the irreplaceable human elements of judgment and skepticism underscore the continuing importance of skilled auditors in the auditing process (Spector & Ma, 2019; Gultom *et al.*, 2021).

This analysis provides a thorough exploration of the distinct roles that AI and HI play in auditing, highlighting the strengths and limitations of both, and underscoring the importance of integrating AI into the audit process in a manner that enhances (De Cremer & Kasparov, 2021), rather than replaces, human expertise. The future of financial auditing will likely involve a collaborative approach, leveraging the computational power of AI while retaining the irreplaceable human elements of judgment, ethics, and interpersonal skills (Spector & Ma, 2019; Tiron-Tudor & Deliu, 2022).

5. Discussion & further research developments

Our findings reveal that auditors possess strong capabilities in professional judgment and skepticism, which are critical for the integrity and reliability of audits. They excel in cognitive abilities, emotional and social intelligence (Satyawan & Iswati, 2023), and personal and behavioral characteristics (Martınez-Miranda & Aldea, 2005). These skills enable them to make informed decisions, apply ethical considerations, and maintain a questioning mindset essential for identifying potential misstatements due to error or fraud (Spector & Ma, 2019; AFC, 2020).

AI systems, on the other hand, demonstrate significant strengths in data processing and pattern recognition, outperforming human auditors in terms of speed and accuracy in handling large datasets (Kurzweil, 2006). However, AI lacks the depth of contextual understanding, ethical judgment, and intuitive judgment that human auditors bring to the auditing process (Korteling *et al.*, 2021). While AI can assist in identifying anomalies and performing routine tasks, it cannot fully replicate the nuanced professional skepticism and judgment of human auditors (Olsen & Gold, 2018; Li, 2022).

However, as AI systems aim to mimic human cognitive skills and judgment, they bring forth questions about responsibility, governance, and the potential for unintended consequences. Auditors must address these ethical concerns, ensuring that AI is used in a manner that aligns with professional standards and societal expectations (Munoko *et al.*, 2020; Fedyk *et al.*, 2022).

The findings also suggest that AI can enhance the auditing process by augmenting human capabilities (Carter & Nielsen, 2017), particularly in data-intensive tasks (De Cremer & Kasparov, 2021). However, the irreplaceable elements of professional judgment and skepticism underscore the continuing importance of skilled auditors (Olsen & Gold, 2018; Spector & Ma, 2019; Gultom *et al.*, 2021; Puthukulam *et al.*, 2021), namely the fact that it is very unlikely that in the future, financial auditors will be replaced by AI tools.

In conclusion, this comparative analysis highlights the complementary nature of AI and HI in auditing. The integration of AI should be approached with caution, ensuring that human auditors continue to play a pivotal role in applying their expertise and judgment to uphold the highest standards of accuracy and ethical conduct in financial reporting. A balanced approach that leverages the strengths of both AI and human auditors is recommended, ensuring that human judgment and ethical considerations remain central to the auditing process.

The AI – HI intersection challenges traditional notions of professional judgment and necessitates a healthy degree of skepticism to ensure ethical outcomes. Future research endeavors should explore these ethical considerations, focusing on the balance between leveraging AI's capabilities and maintaining human oversight.

The human brain is not superior to AI. Vice versa – yes. The only problem would be that the two are simply not comparable. The main difference between the two types of intelligence is the way of data processing and abstract thinking (Korteling *et al.*, 2021). At bottom and after all, even the most polished AI existing is not much different from any other software. They all work on the same principle: bits of data zipping through electrical circuits at breakneck speed. AI is capable of solving problems as long as those problems are found in data sets it has access to. The same cannot be said for the human brain – or at least the speed differs (Korteling *et al.*, 2021). If we are to judge from the perspective of data processing, HI is clearly inferior to AI. However, in other areas, the human brain is head and shoulders above the competition – abstract thinking, for example (Spector & Ma, 2019). The human mind can access knowledge from other fields as well; it is not for nothing that one speaks of the fullness of the mental faculties (Satyawan & Iswati, 2023). AI algorithms have been shown many times to fail at logic as soon as they are presented with a problem outside of their range of competence or that differs from the data they were trained with (Gultom *et al.*, 2021).

Consequently, the evolving role of AI in auditing presents numerous *opportunities for future research*. Key areas include the development of frameworks for the ethical use of AI, the exploration of AI's impact on professional skepticism, and the examination of how AI can support the auditor's judgment in complex scenarios (Olsen & Gold, 2018). Future research should also focus on the long-term implications of AI on the audit profession. This may include studying the effects of AI on audit quality, efficiency, and the labor market within the auditing sector. Additionally, research is needed to guide the development of best practices that balance the benefits of AI with the need for professional skepticism and human judgment (Olsen & Gold, 2018). Ultimately, the future of AI in auditing is ripe with research opportunities that can contribute to the advancement of the profession (Luckin, 2018; Aitkazinov, 2023). Auditors, academics, and policymakers must collaborate to explore these opportunities and proactively address the challenges presented by AI.

Although AI and HI are different in many ways, there is also great potential to use them together. Completely replacing HI is not possible, but using AI to support and improve our abilities can lead to significant innovations and improve people's lives in ways we could not imagine now. Therefore, it is important that we continue to explore the potential of AI and ensure that it is used in a responsible and ethical way to benefit humanity.

6. Conclusion

This research underscores the complementary strengths of AI and HI in auditing. AI excels in speed, efficiency, and data handling, offering significant benefits. However, the irreplaceable human elements of ethical judgment, intuition, and professional skepticism remain crucial. A balanced approach that leverages AI's capabilities while preserving the essential roles of human auditors enhances the overall effectiveness of audit engagements, ensuring accuracy, reliability, and ethical integrity.

The interaction between AI and HI in auditing introduces a complex landscape of ethical considerations. To navigate these challenges, auditors must respond to shifts in business models and risk triggered by AI and use these novel technologies to reimagine audits. This requires a balance between leveraging AI's capabilities to enhance the audit process and maintaining the auditor's critical judgment and professional skepticism.

Audit professionals must navigate this terrain with a blend of trust in AI's capabilities and a healthy dose of skepticism. Adhering to robust ethical frameworks and maintaining human oversight, as outlined in the "Auditor-governing-the-loop" scenario, allows us to harness AI's benefits while safeguarding professional judgment and proactively addressing ethical challenges to maintain the trust and integrity of the audit profession. As AI continues to evolve, the commitment to ethical integration will be paramount to ensuring technology serves the public interest in a fair and just manner.

In conclusion, the interplay between AI and HI in auditing presents a promising yet intricate dynamic. Embracing continuous learning and adaptability is essential for auditors to harness AI's power while upholding the profession's core principles. By doing so, the audit profession can achieve audits that are not only efficient and accurate but also ethically sound and trustworthy, paving the way for a future where technology and human expertise coalesce to elevate the standards of auditing.

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A Qualitative Approach Regarding the Impact of Digitalization and Automation on the Accounting and Auditing Profession

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Abstract

In recent years, companies worldwide have faced a rapid pace of digitization and automation, which has led to change and adaptation of business models. From this point of view, new technologies have revolutionized the field of accounting and auditing, having both positive and negative effects on companies and employees. This paper highlights how changes brought about by technological progress influence the accounting and auditing profession and the role of other factors in this direction, using a qualitative method based on semi-structured interviews. The study results show that the benefits are visible at the company level. However, certain obstacles still exist, such as employees' resistance to change, the size of the initial costs or the systems used. On the other hand, professionals expect some entry-level jobs to disappear. Instead, other opportunities will be available for practitioners in the field. In this sense, universities will have a unique role in training the new generations by developing skills for the digital age. The present study may be of interest to researchers examining related issues. From a practical point of view, this paper could be helpful to professionals as it highlights several current needs of the business environment due to the impact of technological innovations.

Key words: *digitalization; automation; accounting profession; auditing; impact;*

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Introduction

With the advent of the fourth industrial revolution, there have been many changes in the accounting and auditing profession regarding adopting and using new technologies (Qasim and Kharbat, 2020). Thus, using automation and digitization tools represents one of the biggest challenges among accounting professionals considering their complex requirements (Salijeni Samsonova-Taddei and Turley, 2019). Although technological progress creates uncertainty about jobs in the financial accounting field (Kokina and Blanchette, 2019), it also brings new opportunities. Previous studies have highlighted the benefits of using new technologies within consulting companies or accounting departments. The emergence of new business models (Kohtamäki et al., 2020), cost optimization or improved reporting quality (Kokina and Blanchette, 2019) are just a few examples. On the other hand, companies that do not keep up with technology could be threatened or even eliminated (Jylhä and Syynimaa, 2019).

Having the results from the specialized literature, the main objective of this study is to identify the impact of digitization and automation on the accounting and auditing profession in Romania using a qualitative method based on semi-structured interviews. Previous research has also used this method to highlight how different technologies affect the profession, but they have focused on other countries and contexts. For example, the study conducted by Jylhä and Syynimaa (2019) used as respondents professionals from the largest companies in Finland, while Kokina et al. (2021) investigated the influence of robots on the changing tasks of accountants at the level of companies in different industries. On the other hand, Cooper et al. (2022) conducted a similar study at the level of Big 4 companies. However, similar studies at the level of consulting companies in Romania are limited.

This study aims to identify how consulting companies and employees in our country are affected by the digitization and automation of the profession. On the other hand, this research identifies the factors that contribute to the digitization and automation of the profession, starting from the opinion of business professionals. In this sense, this paper contributes to the specialized literature through a series of elements. First, the results show that, at the level of accounting and auditing profession, large companies have made significant progress in using new technologies. For this reason, the place Romania occupies in the DESI report (2022) regarding digitization might not be valid at the level of the accounting profession. Second, the research raises the alarm among existing and future employees to comply with the new demands of the labor market by developing primary skills and accepting the changes brought by new technologies. Finally, the results show that in addition to companies and employees, universities, the state, clients and accounting systems are the main factors contributing to the automation and digitization of processes, and the pandemic period has revolutionized the way the accounting profession is carried out today.

The paper is structured as follows. The first section presents the main results from the specialized literature regarding the impact of digitization and automation on consulting companies and employees in the field but also highlights the factors that contribute to technological progress. The second section discusses the background, methodology, data collection and analysis. The results are presented in the third section, followed by the main conclusions, theoretical and practical implications, limitations of the study, and future research directions.

1. Literature review

1.1. Digitalization and automation impact on companies

For companies to be able to continue to maintain their level of competition at high rates, to be able to respond to the needs of clients and to reduce their costs for the effective achievement of defined objectives, digitalization requires continuous communication with stakeholders (Monterio, 2016). In this sense, companies are challenged to make decisions about introducing new technologies and digitized business processes (Appelfeller and Feldmann, 2022). However, digitization has yet to develop significantly within audit firms, given the complexity of audit tasks, availability of client data, requirements for professional judgment and IT training (Cohen and Rozario, 2019). Also, at the administrative, accounting, and financial services levels, projects that use robots or artificial intelligence are still in their infancy. Still, companies using these resources could achieve considerable standardization and optimization of processes (Kokina and Blanchette, 2019).

Researchers have highlighted the benefits of digitizing and automating processes in consulting companies in recent years. For example, Kokina and Blanchette (2019)

concluded that firms that use bots to automate processes enjoy lower costs and error rates and improve their reporting quality. On the other hand, digitization leads to innovation (Papadopoulos et al., 2021) and new business opportunities (Kohtamäki et al., 2020). Moreover, the use of new technologies can contribute to improving employees' productivity in accounting and auditing, thus leading to positive effects in terms of the financial performance of companies (Zhou et al., 2021).

Previous studies have shown that consulting firms that do not use technology or do not have the willingness to invest in this direction could be eliminated from the market (Jylhä and Syynimaa, 2019). Thus, the implementation of new technologies does not only positively influence companies; they are expensive in some cases, and the return on investment and the development of skills and competencies require a long time (Wamba et al., 2017). From another perspective, automation can be associated with employee resistance to change, system dependency and cyber risk (Attard, 2023). User adoption of new technologies can sometimes be problematic for companies. Without proper training, employees in the field will be reluctant to use technological resources, thus leading to investments that will not result in the desired return (Eißer, Torrini, & Böhm, 2020). Given the mixed results in the literature, we formulate the first research question: *How do automation and digitization influence consulting firms, and what is the role of companies in this direction?*

1.2. Digitalization and automation impact on employees

New technologies are not only influencing companies but also accounting employees and beyond. Recently, more and more studies have discussed the replacement of accounting practitioners with robots for specific tasks and the disappearance of jobs in this field (Kokina and Blanchette, 2019). In this sense, businessmen like Elon Musk highlight the extent of the changes caused by artificial intelligence and believe that it will take over a large part of jobs (Leetaru, 2016). According to a study by Grace et al. (2018), it is predicted that artificial intelligence could outperform humans by 50% in 45 years and ultimately replace human labor in about 120 years.

However, activities related to exception analysis, development, support, and testing of robot-based systems cannot be replaced (Kokina & Blanchette, 2019; Tsoraya, Asbari, & Novitasari, 2023). Moreover, human labor will still be required to manage, correct and clean data (Holmes and Douglass, 2021). From this point of view, accounting practitioners can play an essential role in the design process of technology implementations, as they are the primary holders of critical business knowledge (Knudsen, 2020). On the other hand, data analysis and interpretation, as well as creativity or imagination, are difficult to replace (Jamal Mohammad et al., 2020). Also, previous studies have shown that digitization encourages the emergence of new services at the level of audit firms (Manita et al., 2020). Given that many of the activities within the accountancy profession will be automated and taken over by artificial intelligence, practitioners will have a strategic and management-oriented role (Smith, 2018). In this regard, the roles of accountants will consist of activities such as cost control and process improvement, capital optimization, things that require analytical skills, decision making and problem-solving (Huerta and Jensen, 2017). On the other hand, auditors' roles will be related to critical evaluations and key judgments (Kend and Nguyen, 2020).

Starting from the functions that accounting practitioners will hold due to the digitization and automation of the profession, new skills and abilities will be required. From this point of view, Ballou Heitger and Stoel (2018) consider holistic business skills and knowledge, research skills, knowledge related to data analysis, tools and technology, and unstructured problem-solving, writing and communication skills essential for developing a scientific-methodical mentality. Also, the authors of the study believe that there is no alignment between the perspectives of the academic environment and the requirements of professional accountants regarding allocating skills and knowledge. Analyzing the discrepancies between the skills that students obtain and employers' expectations, Lazíková et.al. (2022) identified some of the significant differences. From their point of view, soft skills such as presentation skills, creative thinking, working under pressure, written and oral communication, and adaptability are just a few examples. Considering the results from the specialized literature, we formulate the second research question: *How do automation and digitization influence accounting and auditing employees, and what will their role be in the coming years?*

1.3. The role of other factors on the digitization and automation of the profession

To prepare future employees with the skills and competencies needed to use new technologies, universities play an essential role (Jackson, Michelson,

& Munir, 2023). In this sense, it is necessary to identify and introduce new approaches, technologies and tools in the university education system to improve the learning process's effectiveness (Comoli, Tettamanzi and Murgolo, 2023). Considering the need to update education curriculum with a specific frequency to respond to the needs of the labor market (Mantai and Calma, 2022), universities must request the opinion of professionals in practice (Sarfraz, Khawaja and Ivascu, 2022). From this point of view, it is essential to identify the requirements of the business environment regarding the new generations of professionals.

Another factor that has a significant role in the digitization of the accounting profession is the Covid-19 pandemic. In this regard, previous studies have demonstrated that the pandemic has been instrumental in the diffusion and improvement of digital solutions across all industries and workplaces, including education (Sollosy and McInerney, 2022). The revolution during the Covid-19 pandemic had significant effects on the way companies and employees work (Ancillo del Val Núñez and Gavrila, 2021), facilitating digital transformation at an unprecedented level and making remote work possible (Mutlu, Açıkgöz and Dalkılıç, 2022). Another study related to the effects of the Covid-19 pandemic on digitization shows that it can be considered a "catalyst" for the use of new technologies, such as 5G networks, cloud computing, artificial intelligence and machine learning (Amankwah-Amoah et al., 2021).

In addition to the abovementioned factors, the state plays a vital role in digitizing and automating the accounting profession. For example, at the level of Romania, introducing new regulations regarding the standard audit file for tax (SAF-T) forces companies to go digital. The primary role of this reporting is to standardize the transfer of information from taxpayers to tax authorities, which is impossible to do manually. SAF-T reporting is considered easy for tax authorities to review companies' transactions (PwC, 2021). Also, introducing the mandatory electronic invoice (RO e-invoice) represents another essential element in this direction. According to EY (2022) communication, this approach will contribute to the digitization of the public sector, increase financial transparency, and promote sustainable development.

On the other hand, previous research has demonstrated that the high level of competence in business processes, the faster pace of innovation, new types of cooperation, and client involvement are important factors that lead to digitalization (Rachinger et al., 2018; Adomako et al., 2021). Last but not least, computer systems are considered critical factors in automating the accounting and auditing profession. For example, implementing cloud-based IT systems can influence accounting configurations by offering a platform where the client and the accounting firm can work simultaneously, thus allowing new types of work organizations in a service outsourcing relationship (Asatiani et al., 2019).

Based on the results from the specialized literature, we formulate the third research question: How do different factors (the university, tax authorities, the state, clients and IT systems) contribute to the automation of the accounting profession in Romania, and what is their role?

2. Research methodology

2.1. Context and participants

Romania has the lowest level of digitization in Europe, with a score of 30.6 points compared to the European average of 52.3 points, especially regarding the integration of digital technologies, according to the DESI report (2022). However, according to the published strategy, the tax authorities in our country are trying to increase the level of digitization to facilitate the interaction between the state and companies (ANAF, n.d.). This forces companies to digitize themselves to comply with the legislation. At the level of the accounting profession in Romania, companies face numerous challenges in digitization and automation. In this sense, the perception of professionals regarding the impact of technologization is the fundamental interest of this study.

To gain a deeper understanding of the impact of digitization and automation on the accounting profession, we selected a qualitative method based on semi-structured interviews. Previous studies have used this method to analyze the effects of digitization and automation on this field. For example, Kokina et al. (2021) investigated how process automation robots could change the tasks of accountants. Similarly, Cooper et al. (2022) focused on this innovation and how it affects the experience of

leaders and employees at the level of Big 4 companies. Another study highlighted the impact of digitization and automation on organizations, business structures, tasks and employees within the largest consulting companies in Finland (Jylhä and Syynimaa, 2019). At the level of Romania, Anton (2023) analyzed the opinion of managers from accounting companies in Braşov about the digitization of the profession.

The companies interviewed were selected based on the non-probability sampling method to include the largest consulting firms in the country, Big 4 and Non-Big 4. All contacted companies accepted the study invitation. **Table no. 1** presents information about the participants and other details regarding the conduct of the discussions. Ten interviews were conducted with partners, directors, managers or seniors in the accounting and audit departments and with partners or managers in the automation department. One or two people participated in each of the interviews. The duration of the interviews was about an hour, except for one of them. The discussions took place face-to-face, by phone or through the Zoom, Google Meets and Microsoft Teams platforms between May 2022 and February 2023. The interviews were not recorded, but notes were taken during the discussion and transcribed at the end to avoid losing sight of certain aspects.

Table no. 1. Interview details

Abbreviation	Company type	Position	Duration	Platform
I1	Non-Big 4	Automation partner	1h	Microsoft Teams
I2	Non-Big 4	Accounting partner	2h	In person
I3	Big 4	Accounting director	1h	Microsoft Teams
I4	Big 4	Accounting manager	1h	By phone
I5	Big 4	Accounting director Automation manager	1h	Microsoft Teams
I6	Non-Big 4	Automation manager	1h	Zoom
I7	Big 4	Auditing director	1h	Google Meets
I8	Non-Big 4	Accounting director	1h	Microsoft Teams
I9	Non-Big 4	Accounting manager x 2	1h	Microsoft Teams
I10	Non-Big 4	Senior accountant	1h	Microsoft Teams

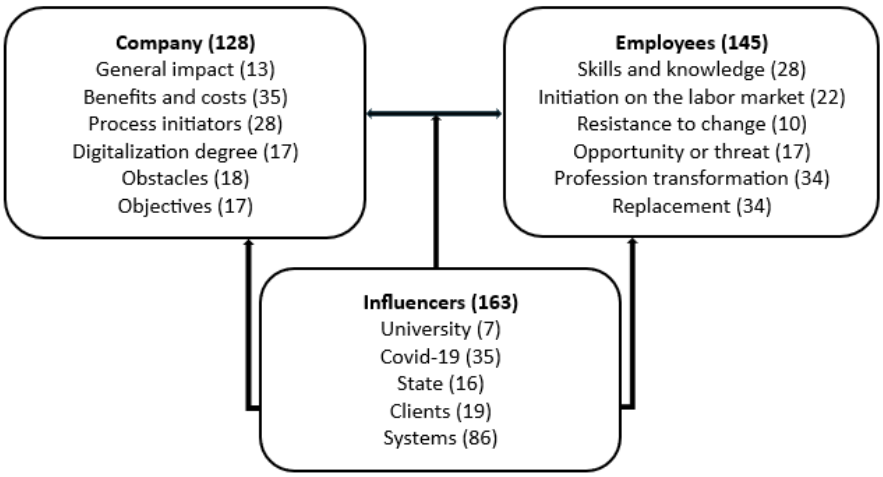
Source: Autors

2.2. Data analysis

Thematic analysis was used to code the interviews (Naeem et al., 2023). This involves going through 6 steps to identify and report patterns in a data set, which are then interpreted (Braun and Clarke, 2006).

The first step in a thematic analysis is transcription, familiarization with the data and quote selection. Based on these, the second step was to identify keywords from the selected quotes. Afterwards, the data was imported into NVivo for coding. For each quote, at least one code was assigned based on the previously obtained keywords. This step simplifies the text-type data by transforming it into a theoretical form to identify the elements that are the object of the research (Naeem et al., 2023). The fourth stage involves developing themes by organizing codes to identify patterns and relationships between them. In this sense, each code was placed in a subcategory assigned to a category. There were 847 references and 436 codes, grouped into 7 categories and 25 subcategories. In the fifth step, to align the data to the research questions, the categories were abstracted into three dimensions: *Company*, *Employees*, and *Influencers*, and the subcategories were narrowed to divide the data set as evenly as possible. The last step consisted of developing the conceptual model presented in ***Figure no. 1***. Also, the elements analyzed on each dimension and the corresponding number of codes are given.

Figure no. 1. Conceptual model



Source: Authors

3. Results and discussion

3.1. Digitalization and automation impact on companies

3.1.1. General impact, costs and benefits

In recent years, consulting companies in Romania have turned their attention to digitalizing and automating processes for several reasons. Some examples are simplifying employees' work and compliance, gaining a competitive advantage or reducing long-term costs. However, digitization and automation can positively and negatively affect accounting and auditing companies. When asked what the impact of digitization and automation is at the level of the company he works for, one of the professionals answered:

> *The impact is, in principle, very good: it reduces time and processing costs, streamlines automation processes, improves data security, and reduces the risk of error (I3).*

As can be seen, the benefits can already be felt within organizations. In addition to those mentioned above, the level of flexibility or the quality of work represents other essential elements, according to the paragraphs below:

> *If accounting had been based on physical documents for many years, we have noticed great flexibility now. We now use electronic copies rather than physical transmission, which gives us a lot of flexibility. In short, we no longer depend on direct contact for the transfer of documents […] (I4).*

> *I believe that automation is beneficial in making work time more efficient and improving the quality of work (I9).*

Moreover, digitalization gives companies an advantage in relation with companies in the same sector of activity, as presented by one of the participants:

> *Work should be done in this direction. It is observed that all companies that have invested massively have a higher reaction speed in cases of market difficulty. They anticipate much better than others [...] (I4).*

On the other hand, the negative effects at the level of companies refer, in particular, to the costs related to the initial investment, which is also one of the reasons why certain companies do not evolve from the point of view of digitization and automation. However, the fact that in the long term, costs will decrease motivates companies to mobilize in this direction, as shown below:

> *From the perspective of costs, here we can discuss an increase in the short term aimed at an infusion of necessary expenses to obtain such (automation) tools. However, in the long term, these costs are more limited than in the case of manual processing (I10).*

Summarizing the results of the study regarding the impact, costs and benefits of digitization and automation at the level of consulting companies in Romania, professionals are generally satisfied with the effects. Moreover, companies currently enjoy benefits such as reduced processing time and costs, efficiency, data security, reduced risk of error, flexibility, and increased work quality or reaction speed, as mentioned by previous research (Kokina and Blanchette, 2019). On the other hand, the initial investment is difficult for some companies to bear. However, with all these benefits in front of them, many companies have chosen to move in this direction.

3.1.2. Process initiators and digitalization degree

Digitization and automation processes are often challenging to implement and require the involvement of people from different departments and at various levels. However, it is interesting to see who the initiators of the process are at the level of the largest consulting firms and their role in this direction. Thus, one of the respondents explained:

> *Everything related to ERP (Enterprise Resource Planning) starts with the group, but the employees are very involved in automation because, in addition to accounting, we have conversions and analyses where a lot of Excel files are processed. Processors are eager to automate through macros, chatbots, and RPA (Robotic Process Automation). So basically, everyone is involved (I3).*

Thus, the need to simplify work and to do things in the shortest possible time leads employees to look for new solutions. If, in some companies, the initiators of the process do not refer only to employees at a high hierarchical level, in other companies, the automation is managed by the management of the department, as presented by one of the participants:

> *In our company, automation is managed by the management of each service line. For example, there is a dedicated team dealing with automation for the outsourcing department, reporting to the head of outsourcing (I6).*

However, digitization and automation involve changes in the internal processes and business models of companies, as detailed below:

> *Automation often means changing internal processes. Sometimes, this can be done by a mixed team. When you call an external supplier, you must explain things more. The in-house team knows our business better (I1).*

Given the rather complicated procedures of some companies, implementing automation tools is a long-term process. For this reason, some professionals believe that automation has not yet reached its maturity level, although things have been going quite well lately:

> *All in all, there has been some progress at a faster-than-normal speed, but there is still room to move things at a much faster speed. The benefits are significant, and the costs are low (I1).*

In addition to company procedures, the degree of digitalization and automation also depends on many other aspects, such as the company's size, the involvement of employees and clients, or the services offered. In this regard, one participant mentioned:

> *From my point of view, a 100% degree of automation cannot be achieved because it is information that must be analyzed and framed according to professional judgment. We do not only accounting but also other types of assignments. Verification missions cannot replace human intervention in researching the correct framing of a transaction (I2).*

On the other hand, from the perspective of audit services, companies seem to be making efforts to simplify work and increase the degree of digitization and automation, as one interviewee mentions:

> *We try to eliminate as many redundant tasks as possible to ease the audit mission so that they come to us (employees) with a certain solution, such as closing the balance sheet or other tasks (I5).*

As predicted by the results of the specialized literature, the level of digitization and automation of the profession, it is still at the beginning (Cohen and Rozario, 2019; Kokina and Blanchette, 2019), and the results of the present research also confirm this. However, considering the services offered, a maximum limit cannot be discussed, because services provided by professional accountants often depend on professional judgment. Both employees and the management team understand the need for new tools to simplify routine tasks and work together to achieve their goals.

3.1.3. Obstacles and objectives

Obviously, in the attempt to digitize and automate specific processes, companies can encounter difficulties that are not only related to the company itself but also to other

factors. One of them is employee reluctance, as mentioned below:

> *The main obstacle is people's reluctance to change and their tendency to abandon the automation solution if they do not notice the benefits after the first use (I2).*

People's reluctance can be understood through change management theory, which presents its reasons. According to the work done by Burdus, Caprarescu and Androniceanu (2000), memory and selective attention are the main factors. Starting from these two elements, people tend to only partially take the information related to the change, filtering out specific elements that force them to leave their comfort zone. Because of this, employees only partially see the change process and do not understand its benefits.

On the other hand, clients are seen as another obstacle in process automation. In this regard, one of the interviewees explained:

> *Clients would be the main obstacle. We have a reluctance regarding budgets. They must bear the costs. Even if it pays off over time, there is an initial effort, and then, depending on the company, they are not willing to invest, and we must see how we go about implementing the processes (I4).*

Companies' investments in automation tools are often shared with clients. However, there are cases in which clients do not want or cannot afford to allocate costs, which represents barriers to consulting firms' evolution in this direction.

Also, some professionals believe that the accounting systems used would represent an impediment to automation:

> *The main obstacle is the accounting system, which is not primarily designed for automation (I9).*

Changing the accounting system is a substantial effort in a large company and customizing it for automation could involve relatively high costs. Despite such obstacles, companies are optimistic and set long-term digitalization and automation goals. Thus, one of the respondents specified:

> *We want to try to free people's time for quality things and leave the volume and hard work for the computer. This automatically leads to more excellent client care, and by freeing up people's time, the quality of services can only increase (I8).*

Other professionals consider sustainable development to be a significant factor in digitization, as one interviewee noted:

> *We have sustainability objectives related to digitization (carbon-free until 2030), and here we digitize to stop printing; to reduce the consumption of paper... It is a mix between business digitization and the sustainability trend (I7).*

On the other hand, the target of different companies is to increase the degree of digitization and automation to remain competitive:

> *We intend to expand digitization and automation; otherwise, we will be left behind (I9).*

The impact of digitization and automation at the level of consulting companies can be viewed from several perspectives. Although the benefits are visible, there are also some obstacles. Employee reluctance, client acceptance, and systems used are just some of those mentioned by study participants. These things have the effect of delaying the process but not stopping it. Companies are moving in this direction to keep up with technology, free people from repetitive tasks, provide excellent client care by increasing quality, and be sustainable.

3.2. Digitalization and automation impact on employees

3.2.1. Skills and knowledge for initiating in the labor market

Technological advancement has changed the skill set that a professional accountant should possess today. If knowledge related to accounting was the most critical competence in the past, nowadays, you cannot work in this field without IT knowledge. In this sense, one of the respondents mentioned:

> *They will need to have digital skills. Their role will consist of advisory before and after (I2).*

As professional accountants' roles will no longer consist of repetitive tasks, they will also need to develop other skills, such as critical thinking. From this point of view, one of the interviewees explained:

> *I expect a person to have excellent critical analysis skills. By critical analysis, I mean the logic of deducing a fourth piece of information from the first three and the power of synthesis. One of the problems that a person has is the feeling that he has a new problem every day. The solutions to our problems are not so varied. You can't have a new*

problem every day. You need a synthesis question. The problem is a particular case of a general issue. Problem must be identified (I1).

Moreover, professionals consider communication and openness to newness other essential elements for this field:

We, accountants, are said to be gatekeepers and introverts in general. This perception needs to be changed, and at the same time, the skills behind it. Analysis and experience will be required. There is a need for openness and acceptance, communication, and a desire to be part of several projects. You cannot be introverted; you must be pleasant and visible (I3).

In addition to these, the business environment expects young practitioners to have a desire for professional development and knowledge of a foreign language:

I would say that, before technical knowledge, two essential things are necessary: firstly, a foreign language; if you want to break through today, you must be able to work with foreigners. If you don't know English, you're doomed. After which the attitude matters, to want to grow, to develop yourself, and not to enjoy a significant immediate gain (I8).

Given that the input part of documents will be taken over by artificial intelligence, and young people will no longer have direct contact with primary documents and will start directly with data analysis, the question that arises is: How will young graduates be able to understand specific correlations without going through a first stage? From this point of view, one of the participants explained:

I don't think this part of registering the primary documents will completely disappear, only that those very easy to register, such as expense reports and bank statements, will be automated. However, there will remain those transactions that require more time, and the new joiner will have to learn to analyze a contract, accounting, and tax legislation (I4).

Professionals again bring up the analysis part, a primordial element in the accounting profession. However, the link with primary documents should not be lost either, as one interviewee noted:

Moreover, to help future professionals, it is necessary to maintain the connection with the primary documents. This could be done in the form of tests with limited data volumes so that the necessary correlations can be identified for processing and validation by the new accountants (I10).

On the other hand, learning by making mistakes is another technique that professionals find helpful:

What I mean is that, in an organization that I dream of you take a person from the school benches and transfer the information you have acquired in this way. He will go directly to analyzing some information that exists, learning from the mistakes of others (I1).

According to the opinions offered by professionals, it is difficult to predict how young people will be initiated into the labor market. Although some of them think that the primary documents will not disappear and we will still have access to the data entry part, others believe that contact with the documents will not be needed if we can transfer the information from one to another. For these reasons, developing a skill set to move directly into the analysis area is essential. Digital knowledge, communication skills, openness to new things, and critical thinking are just some things that business professionals mention. The skills needed by the latest generation of accountants confirm the results of studies in the specialized literature (Lazíková et al., 2022; Ballou, Heitger and Stoel, 2018).

3.2.2. Resistance to change, opportunity or threat

If one of the challenges for the employees new to the field is related to how they will come to make analyses and correlations without having contact with primary documents, for employees with seniority, the main challenge is represented by changing the way of working, as stated one of the respondents:

Unfortunately, for the digital transformation that has been talked about for "7 years", we talk a lot but do little; people are not open enough to change how they work. I think it's not because they can't but because of the fear that it fades/dilutes their role once things change. "You can do it without me" (I1).

People also tend not to trust the automation solutions offered, as one interviewee explained:

There is also a lack of trust in the automation solution and the desire for control. We want to check with our own eyes (I2).

Technology acceptance could be explained by the theory of reasoned action (Fishbein and Ajzen, 1977). According to this theory, the best predictor of a person's behavior is their intention, which is best predicted by subjective attitudes and norms. Attitude is the positive or negative feeling about the manifestation of the behavior. On the other hand, subjective norms refer to the perception of other close people around to manifest or not that behavior. Thus, the fear that their work will no longer be relevant with the advent of technology could cause people to show negative behavior towards changes, and the attitude of those around them could be an influence.

On the other hand, the lack of time is another reason that influences people's resistance to change. From this point of view, one of the respondents specified:

> *[…] These automation procedures go where there is a large volume of repetitive data, but they can also be used for less large clients. This is where the human factor comes into play. Rather than doing it automatically and correcting, they'd do it manually (I5).*

Change can happen if people understand the importance and the good things that digitization brings to this field. Some professionals believe that the changes brought by new technologies represent opportunities for accounting practitioners, thus:

> *I see it as an opportunity. We abandon repetitive work and focus on adding value for clients, which can only bring long-term benefits (I4).*

Another interviewee expressed a similar opinion:

> *At first, everything was perceived as a threat, from the pen to the computer, from the cart to the car. However, I see it as a great opportunity to free yourself from certain tasks that do not bring you any value and to focus on what you do best (I5).*

However, some professionals believe that digitization can be seen as a threat:

> *Digitization can pose a threat to the labor market (I10).*

The fear of the new or the fear of losing their jobs makes it hard for accounting practitioners to accept the changes brought by automation and digitization. However, those who understand the long-term benefits, not only to the company but also to their professional development, will have opportunities that will pave the way to success.

3.2.3. Profession transformation and replacement

Opportunities will arise as the profession transforms if accounting practitioners are open to and involved in change. Business professionals believe that the profession is undergoing a reformation as specified below:

> *I see it as a reformation of the profession. People will still be needed. We need to reinvent ourselves a little to cooperate. After all, we train them (the programs), and the employee checks sets and changes. The program knows how to do what you tell it to do. We must focus on services that bring value (I5).*

As the quote above states, accounting practitioners must focus on value-added tasks. They will also be more involved in business decisions, as one interviewee noted:

> *There is a massive demand in the sector for information and management support. In the accounting department, the stage must be reached where they (accountants) are put at the same table (with management) and are part of business decisions and not providers of reports for the state or other departments (I4).*

In other words, the jobs of accountants will not disappear, but there will be some changes regarding their duties. For example, related to junior-level employment, one of the respondents mentioned:

> *If, in the past, entry-level jobs in accounting involved analyzing primary documents and manually recording transactions in ERP, in the future, entry-level jobs will consist of validating transactions recorded by robots (I6).*

Another interviewee supported a similar point of view:

> *I think those people who do accounting will supervise and check the work of the robots and contribute to the field in this way (I7).*

The impact of digitization and automation on employees in this field can be viewed from several points of view. First, the business environment demands a set of skills aligned with current needs. To meet the challenges, they must have IT, communication, analytical, and critical thinking skills. It also requires a greater openness to the new desire for professional and linguistic development. As presented to us by the interviewees, resistance to change can be a factor that negatively affects employees due to the digitization and automation of the profession. Accepting new technologies gives people opportunities,

while non-acceptance can lead to threats, resulting in job loss. As technology develops, the roles of accountants will also change. They will no longer be data processors. Instead, they will validate the work of artificial intelligence and significantly contribute to the business.

3.3. The role of other factors on the digitization and automation of the profession

3.3.1. University

To meet the demands of the business environment in terms of training future professionals with essential skills and competencies, universities play a vital role. Knowledge of accounting is still necessary for this profession. In this sense, one of the interviewees explained:

> *The school must provide the basic level. You must have a foundation from the school. We prepare solutions and make them more efficient, but it's much easier if you come with a base. It is easier to work if you have completed accounting than to hire someone from cybernetics or polytechnics (I5).*

Similarly, another respondent specified:

> *In the digitization stage, with the desire to do everything very quickly, from the employee's perspective, he should come up with some pretty solid foundations so that he can work and make correlations much easier (I4).*

Thus, so that future employees no longer must start with the essential activity, namely, the registration of primary documents, employers expect universities to prepare them well enough to move directly to data analysis and correlation. Economics universities are trying to change their curricula to meet the business environment (Sarfraz, Khawaja and Ivascu, 2022) both from the point of view of essential knowledge and digital knowledge. Critical thinking is another competency that universities have begun to emphasize more and more recently through business simulation games.

3.3.2. Covid-19

As the literature results predict, the pandemic has significantly affected how companies and employees operate (Ancillo, del Val Núñez and Gavrila, 2021). In this regard, one of the interviewees stated:

> *The pandemic of recent years has revealed that accounting work can be done remotely through electronic exchanges rather than invoices placed on the table and recorded in the system. We were put in a situation where we no longer saw each other, we no longer physically transmitted the documents, and then we accepted that we could send the documents in electronic format (I1).*

Similarly, another respondent explained:

> *It had a decisive role in the digitization process because the situation at that time required remote work (I10).*

In other words, the pandemic facilitated and accelerated digital transformation, making remote work possible (Mutlu, Açıkgöz, & Dalkılıç, 2022). If, until that moment, people were reluctant towards certain technologies during the pandemic, they were somewhat forced to accept them. They gained confidence in the solutions offered, as mentioned by one of the interviewees:

> *The pandemic has made people more confident in using electronic media compared to printed papers. Before the pandemic, we had no support from clients, and even employees were printing documents (I2).*

On the other hand, some professionals argue that it was necessary to rethink the workflows during the pandemic. From this point of view, an interviewee specified:

> *Mandatory remote work has created the need to redefine workflows and explore new methods or technologies to continue efficiently supporting our clients (I6).*

The Covid-19 pandemic has positively affected the digitization of the accounting profession, as predicted by the results of this study. Working remotely and using new technologies are just some examples. If the general population looked more at its adverse effects, companies would take advantage of the moment of the pandemic to redefine their flows, recruit valuable resources from other localities and convince clients to use the electronic environment more. On the other hand, the pandemic made the tax authorities digitize themselves and eliminate part of the bureaucracy.

3.3.3. State

In recent years, the tax authorities have set objectives regarding the digitization of processes to meet the business environment's needs and to influence other companies to digitize in their turn. In this regard, one of the interviewees explained:

It also contributed to automation because what we do is linked to the authorities, who were, in turn, forced to accelerate the digitization and automation process (I2).

Similarly, another respondent specified:

I have also noticed this focus at the level of the authorities, in the sense that ANAF (Romanian tax authorities) also has automation and digitization programs and then, to be where we all want to be, we will have to be one step ahead of others, to express myself in this direction, and the focus is relatively high (I4).

On the other hand, new regulations, such as RO e-invoice or SAF-T, will increasingly contribute to the digitization and automation of processes not only in large companies but also in smaller companies, such as one of the interviewees:

We can observe digitization trends not only at the company level but also at the level of public institutions. This aspect strengthens the option of exclusive digitization of all financial accounting documents. An example is the RO e-invoice (I10).

Thus, considering the nature of the accounting profession and the fact that many of its activities are related to the tax authorities, the state plays a vital role in digitizing and automating the field. Not long ago, companies were disappointed by the work system of the tax authorities; today, they are forced to keep up with the digitization of the tax system by complying with the new regulatory requirements at the national level.

3.3.4. Clients

In any field, clients are the most valuable thing for a company. For this reason, companies must pay more attention to their needs. Given that the work performed by accounting practitioners is mainly intended for clients, companies need to discuss with them the eventual possibilities of automation and digitization. There are opinions from the business environment that consider client support to be quite an essential factor in the automation process, as mentioned by one of the participants:

Clients could impede automation. If they do not provide all the correct and complete documents according to the requirements and structure, it will be harder to automate (I2).

On the other hand, the costs of automation solutions, from the client's perspective, could impact the consulting company's digitization and automation of processes. From this point of view, one of the interviewees specified:

The possibility of having an additional initial cost is something that scares the client (I10).

However, some clients want a simplification of processes to reduce costs in the long term, as one respondent explained:

Clients want us to simplify the work to decrease the amount of their bill. Less time means lower costs for them. From this perspective, we have many clients who started doing their primary accounting in Asia, where salaries are lower than in Romania. We take their journals, process them, adjust them, do automatic mappings, and get the journals we need much faster (I8).

There is a trend to recruit cheaper labor from Asia for core finance processes. More and more large companies are opening branches in countries with a low standard of living, such as India, the Philippines, Thailand and others. According to a study by Deloitte (2021), India is one of the preferred countries for Western companies to perform financial services.

Thus, clients influence the digitization and automation of processes by their acceptance of a model agreed with the supplier for document transmission, but also from the perspective of costs. Depending on the cost-benefit ratio for the client, this can have a positive or negative impact on the automation and digitization of the accounting profession.

3.3.5. Systems

Lastly, accounting systems can be perceived as influencing factors in the digitization and automation of the accounting profession through their flexibility or rigidity. There are accounting systems that can easily integrate automation modules, as one respondent stated:

Accounting systems help us to automate. All of them aim for digitalization and automation of processes (I2).

Conversely, specific systems cannot be modelled as professionals would like. In this sense, one of the interviewees mentioned:

The main obstacle is the accounting system, which is not primarily designed for automation (I9).

On the other hand, cloud accounting systems are often beneficial for simplifying work, given that both the company and the clients can access them simultaneously. From this point of view, one of the professionals explained:

> *We have clients for whom we work in a mixed regime. We gave them access to the system to issue invoices with the related mappings (I4).*

Thus, it is no longer necessary to automate the invoices issued when outsourcing accounting services, considering that the system allows new types of organization (Asatiani et al., 2019).

Regarding audit services, companies have adopted or upgraded their systems to automate and simplify the tasks related to analysis and inventory. Regarding this aspect, one of the respondents specified:

> *Before, the invoice was entered (in the system) to be audited. Now we have automatic systems, a kind of sniping tool. We also have systems on the phone. Colleagues who do inventory go to the field with tablets (I7).*

The impact of systems on the automation of the accounting profession can be both positive and negative. Old systems, which are not designed for automation, can negatively affect this process. System change in a consulting company is a high effort, not only in terms of costs but also in terms of employee acceptance. On the other hand, companies that have systems that can be automated and modified enjoy significant progress.

4. Conclusions

The primary purpose of this study was to highlight the impact of digitization and automation on the accounting and auditing profession based on the views of business professionals. In this sense, interviews were conducted with partners, directors, managers and seniors from the accounting, audit and automation departments of the largest consulting companies in Romania.

The results of the study were divided into three sections. First, the impact of new technologies on companies was identified. According to professionals, automation and digitization are still in an early phase, as confirmed by the results of the specialized literature (Cohen and Rozario, 2019). The benefits obtained by consulting firms include reducing work time and processing costs, streamlining processes, data security, reducing the risk of error, and increasing the quality of work and the reaction speed. Some of these benefits have also been highlighted in previous research (Kokina and Blanchette, 2019). On the other hand, initial costs or other obstacles, such as employee resistance to change, client reluctance regarding costs, or adapting to new ways of working and the systems in use, can negatively affect digitization and automation. Professionals believe that these factors only delay the process. From their point of view, change is happening, but at a lower speed. In consulting companies, employees and the management team are involved in automation and digitization and work together to find the best solutions. However, a 100% degree of automation is out of the question because there are many tasks where human intervention cannot be replaced. Instead, companies would like to increase automation as much as possible to remain competitive and enjoy long-term benefits.

Second, the study results show the impact of digitization and automation on employees. To stay relevant, employees first need to have solid accounting knowledge. On the other hand, digital skills, openness to new things, and critical thinking are other essential elements nowadays. To these, communication skills or knowledge of a foreign language, the desire for development and more are added. Thus, the present study's results confirm previous research on the necessary skills (Lazíková et al., 2022). According to professionals' explanations, digitization represents an opportunity for employees, but there is still a threat regarding job cuts, especially at the entry level. For this reason, some tasks could be taken over by robots, and accountants' roles would change. They would no longer be data processors but would validate artificial intelligence's work and focus on elements that bring added value, both for themselves and for the company. Professionals believe that employees in the field should be part of business decisions and provide advice based on professional judgment.

The last part of the results refers to the factors contributing to the digitization and automation of processes. In this sense, the university is seen as an essential determinant, contributing to young practitioners' development of skills and competencies. Another significant factor contributing to digitization is represented by the Covid-19 pandemic, which had a decisive role, as mentioned by professionals. On the other hand, clients of consulting companies can have both positive and negative impacts. The acceptance of new technologies, as well as the intention to bear the

costs necessary to use new tools, determines the level of automation and digitization. The state is another significant element. The digitization of the tax authorities, for example, and the new regulations regarding SAF-T and e-invoices are causing all companies to digitize themselves to comply with legislative requirements, as the study's results highlight. Moreover, the accounting systems could have positive and negative effects on automation regarding their flexibility or rigidity in integrating automation modules.

The results of this study have both theoretical and practical implications. From a theoretical point of view, they add to the specialized literature new aspects related to the impact of digitization and automation of the accounting and auditing profession both at the level of companies and employees. From a practical point of view, the research results could be of interest to existing and potential employees, as well as universities and professional bodies, as they highlight the demands of the business environment on young accountants and auditors. Moreover, the study's results could also help other companies increase their degree of digitization and automation, starting from the benefits highlighted by the professionals.

This study also has limitations, mainly related to the number of interviews and participants. Future research could present a similar analysis from the perspective of smaller companies or compare the level of digitization and automation in top companies and companies with lower potential for automation. Also, to look at the impact from a deep perspective, future research could invite participants from other backgrounds to the study, such as academia, professional bodies, or entry-level or mid-level employees.

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Audit Quality and Audit Market at European Level

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Abstract

Because the quality of the audit cannot be directly determined, over time, researchers have tried to analyze this subject indirectly through various indicators, such as the quality of financial reporting and audit fees. The financial audit is a subsystem of financial reporting and the main quality of the auditor is its independence from the audited company. The objective of the paper is to analyze the audit market at European level. The analysed sample includes 1080 listed companies in Europe during 2016-2022. The dominant industry in Europe is production, with production companies accounting for 50% of the sample. The auditor's independence measured by audit fees does not appear to be threatened, with a proportion of industry audit fees in the average of total company assets below 0.2% in all industries. The audit services market is highly concentrated, with 98% of all audit fees collected by the four largest audit and advisory service providers. The quality of audit services is important for financial markets because it answers to the question „how trust can one have in the credibility of the reported accounting information?".

Key words: *audit quality; audit market; audit fee; results management;*

JEL Classification: *M42*

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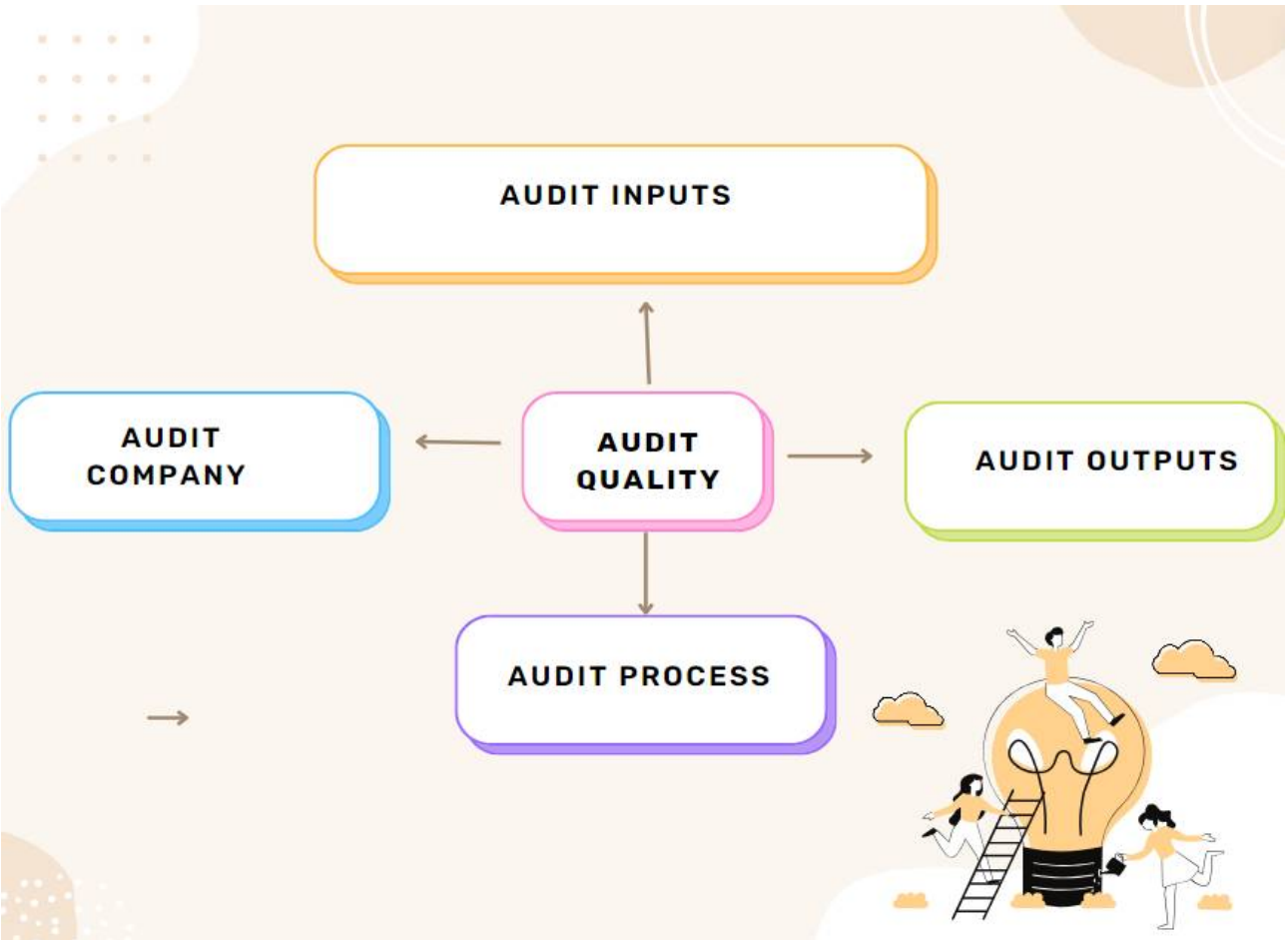
Introduction

Audit quality research has evolved from asking simple questions about the quality of the audit as a whole, to asking detailed questions about quality differences in various audit firms, including, audit offices or even audit partners (Molciuc et al., 2022; Pascaru & Hategan, 2024). According to Francis (2023), the quality of the audit is a complex process in which several factors interact (***Figure no. 1***): the inputs of the audit process (test processes, technologies used and people working in the audit), the audit process (the collection and interpretation of audit evidence by the audit partner, deficiencies identified in the inspections carried out by bodies such as PCAOB, FRC or AFM), audit firms (through the internal quality control system), and audit outputs (audit report and audited financial statements).

A significant number of proxies are used in the literature to measure the quality of the audit, without consensus on the best indicators of audit quality. The quality of the audit depends on the existing intentions and skills in both client companies and audit service providers (DeFond & Zhang, 2014).

Figure no. 1. The elements of the audit process



Source: own projection after Francis (2023)

The most visible outputs of the audit process are the audit report and the audited financial statements. Since for large entities the presentation of factual data in cash flows is not sufficient, reporting is done on the basis of accrual

accounting, which contains, in addition to factual data complex forecasts and estimates (Francis, 2023). Dechow & Schrand (2010) mentions that the reported profit is a function of the financial performance of the company in a certain period.

Following the analysis of the literature, it can be said that although the quality of the audit is a complex subject that cannot be measured directly, it can be determined indirectly by various indicators, including the earnings management (quality of financial reporting, audit being a subsystem of financial reporting) and the level of audit fees (as an indicator of the independence of the financial auditor).

Of the multitude of indicators that contribute to the indirect measurement of audit quality, this paper will analyze the audit fee and total accruals. Accounting accruals are part of the outputs of the audit process, being a measure of the quality of financial reporting. They do not directly reflect the quality of the audit, but it is considered that auditors will control aggressive trends of managers to use accounting policies to manipulate results, and, so that accounting commitments are sustainable from one period to the next.

Starting from the premise that audit fees and earnings management greatly influence the quality of the audit, the goal is to observe the visibility of the indicators mentioned by the surface study of the audit market. In this respect, it was analyzed how audit fees and earnings management are presented in the literature and in the overall image of the audit market in Europe, studied by extracting the data of European listed companies in the period 2016-2022, using Audit Analytics database. Subsequently, financial information was taken from Orbis database. The final sample used included 1080 companies, and 7560 observations.

To analyse the auditor's independence, the percentage of audit fees in a company's total assets was calculated. The structure of the audit market has been analysed by industry and by auditor size.

This paper consists of two parts: literature and, results. In the literature it was followed how the quality of financial reporting can be determined using the models of earnings management and how audit fees can assess the auditor's independence. In the case study, the audit services market was observed, taking into account the structure on industries, the focus and competitiveness of the audit market, as well as the level of existing audit fees.

1. Literature review

The information obtained on the basis of the accrual accounting is more relevant in short term, as it analyzes the profits made on the basis of the principle of business continuity, not only on the basis of cash outflows and inflows (Dechow, 1994). The nature of accrual accounting makes it susceptible to error or even intentional manipulation of earnings. Since the last century, there have been concerns about the possibility of manipulating company results through accrual accounting, which is why researchers have developed models to identify the likelihood of manipulation.

If the results obtained by a company fall below the critical value considered acceptable, in order not to exceed a psychological threshold, managers could use discretionary accounting to return the amounts to psychological value (Lebert et al., 2021). The use of such an approach could be beneficial if cosmetizations are minor, preventing a situation in which decisions would be distorted due to the psychological threshold (Bizer & Schindler, 2005; Lebert et al., 2021).

McNichols & Wilson (1988) drew attention to expected accounts receivables as they represent management expectations on future cash inflows. Their model was based on the non-recovery provision of accounts receivables. They tried to demonstrate how this provision was reported in the absence of manipulation. They used the term discretionary accruals for the difference between the reported accrual and the calculated one, in accordance with the reporting framework, using a model to develop a proxy for discretionary provisions/accruals. The results obtained by them reveal that the discretionary component of the provision for unearned claims would have a negative effect on the profit reported by companies.

According to DeFond & Zhang, (2014), introducing a unit of measurement for the quality of financial reporting is a good way to get information about the quality of the audit, because audit is a subsystem of financial reporting. External audit is a good mechanism to monitor how the interests of shareholders and managers interact, but for this mechanism to work in optimal parameters, the services of external auditors must be of high quality (Idris et al., 2018). The 1995 models for detecting discretionary accruals differ in complexity, using either total accruals or separating discretionary accruals from the rest of the accruals. The Jones model defines the engagement part of accounting by increasing sales and fixed assets.

Dechow et al. (2010) states that the Jones model is susceptible to both Type I and Type II errors, and the modified model (which subtracts the accounts receivables from revenues), although it tries to reduce Type II errors, it has a higher degree of Type I errors.

The model developed by Kothari et al. (2005), also used in further studies (Idris et al., 2018) added the proportion of net profit in total assets (ROA) in the model, but, according to Dechow et al. (2010), this model would greatly decrease the strength of the statistical test, which is why it would only be recommended if the correlation with financial performance is important.

Cohen & Zarowin (2010) analyzed how the results of existing companies on the stock exchange are manipulated during periods of issuance of new shares in the capital markets. The authors use the Jones and Roychowdhury models in their analysis. They noted a decrease in the financial performance following the issue, which is determined by the reversal of accounting accruals, but also by the operational consequences of manipulating the results of the period of equity issuances on the capital market.

According to Simunic (1980), the audit process is a subsystem of the financial reporting system of the audited company, being an economic good, from which the audit client has certain benefits. There is no consensus on the benefits obtained by audit clients, but DeAngelo (1981) cited auditor independence as the main benefit, considered even more important than the auditor's technical knowledge. So, although the client is the one who contracts and pays the audit services, there is an expectation that the auditors will be independent (Hay et al, 2006).

By independence, the audit opinion has value on the capital market because the auditor has the interest to tell the truth even when this truth means bad news from the client's point of view. The auditor may thus discover errors or breaches in the client's accounting system and put pressure on it in order to remedy or report these inconsistencies in the reporting system. DeFond & Zhang, (2014) claim that seeing the audit from the perspective outlined above is wrong. The audit is not limited to identifying or not identifying errors in the client's reporting system. It may have the role of confirming that the presentation of accounting information reflects the economic reality of the client. Thus, the concept of audit quality extends to the quality of financial statements.

If the audit service is provided by an auditor with expertise in the industry in which the client operates, it is likely that the auditor will decrease the management of the results. Clients of auditors who are not specialized in the customer industry report an increase of 1.2% percentage of discretionary accruals in total assets compared to clients of industry-specialized auditors, according to Krishnan (2003). Industry expertise is calculated by dividing the market share of an auditor by the total fees earned in a given industry (only the six largest were considered in that study audit service providers) to the total audit fees obtained in that industry.

Dou et al. (2024) studied whether the perception of bad luck in the Chinese zodiac affects the quality of the audit, and the results indicate that the effects are more obvious in older partners, being more evident in large audit firms facing higher reputational risk. The model includes as dependent variables the discretionary accruals according to Kothari et al (2005) model and the likelihood of financial restatements (dichotomic variable that can take the value of 0 if there were no restatements and 1 if there were restatements in the financial statements). More than 30 control variables have been used, including: auditor size, audit fees, and, the number of days between the date of the audit report and the closing date of the financial statements of the company, defining elements of the company (size, ROA, loss, number of segments, number of segments, increase of operational profits, etc.) and characteristic elements of auditors (specialist in the field, prestige of the university, sex, education, experience, etc.). This study was conducted on companies in China and focused on how the work of Chinese auditors is influenced by their personal beliefs.

Following a questionnaire applied to non-professional auditors and investors, it emerged that the most important perceived determinants of audit quality are the characteristics of auditors, and financial restatements which may signal a questionable quality of audit (Christensen et al, 2016).

Hasan et al. (2020) used result management as a proxy for financial reporting. They consider that the role of the audit committee is to moderate the management of the result through the quality of the audit. The study was conducted on Malaysian companies in the reference period 2013-2018. Audited company size and financial leverage are used as control variables.

Hay et al. (2006) argues that audit fees assess competitiveness in the audit market characterised by a

relatively small number of international actors. These may affect the quality and independence of the auditor (Crucean, & Hategan, 2022).

According to Simunic (1980), the audit fee can be determined by two main factors: quantity and unit price. The amount in the context of audit services is the number of hours worked allocated to each client by the members of the audit team. The price shall include the cost of the resources used by the auditor in the audit process and a profit margin. As the audit is an economic good, the amount of audit services required by a client will be determined by the benefits and costs that the audit entails.

Financial leverage and any losses incurred by audited customers have consistent effects on audit fees while internal audit, and, the type of audit opinion (although it was a significant variable before 1990), the auditor's specialization and corporate governance indicate mixed results in the literature (Hay et al., 2006),

Human capital working in audited companies may lead to decreased audit fees as they contribute to lower audit risks. This also applies to regular employees, not just those in the C-suite category. A strong organizational culture strengthens the negative correlation between the quality of employees in audited companies and the audit fee, according to a study conducted on companies in China (Li, X. et al., 2020). The study investigates the correlation between the quality of employees in the audited companies and the audit fee. The independent and dependent variables used in the study are: audit fee (dependent variable), average employee education and higher education (the main independent variables in the form of dichotomic values), the audit effort measured in the difference in days between the end of the financial year and the date of the audit report, significant deficiencies in internal control (dichotomic value), financial restatements, financial restatements, discretionary commitments based on the 1995 Dechow model. Among the control variables we mention: company size measured by the logarithm value of total assets, leverage, logarithm value of sales, ROA, number of business segments, etc. The results of the study indicate a decrease of 11.7 percent in audit fees in case of an increase by a percentage of the number of employees with higher education.

Kacer M. et al. (2018), although not focused on audit quality, provides important information about audit fees. The study, conducted on companies audited by Big Four companies in the UK, showed that the main determinant of audit fees is the size of the audited company. The size of the audited company was represented by logarithmated values of total assets and sales. The complexity of the company was measured by the proportions of claims and foreign transactions in the total assets, the number of subsidiaries, obtaining a qualified opinion. For audit risk, the proportion of total debt in total assets, the proportion of pre-tax net profit in total sales, and whether the company was at a loss were used. Other variables used were: end of financial year, audit company market share, industry, year, delayed publication of audit reports. As a way of estimating, the authors use fixed-effect panels and the method of the smallest squares.

Many authors consider the level of audit fees to be a component of audit quality (Ganesan et al., 2019). As the quality of the audit cannot be directly measured, various indicators are used including the level of audit fees. High fees may indicate both a greater audit effort for complex entities (Bronson et al., 2017), but in some cases it can be a warning signal on the auditor's independence (Eshleman and Guo, 2013).

3. Methodology

To capture the overview of the audit services market, the information available in the period 2016-2022 for listed companies in Europe was downloaded from the Audit Analytics database. Out of a total of 44,460 comments, companies that: are part of the financial sector, do not have complete data throughout the period, have been eliminated, there are not listed on the stock exchange and duplicate opinions (the case of French companies), obtaining a total of 23,282 observations. For the collection of financial information, the Orbis database was used. When the information from the two databases was combined, after the companies with missing information were eliminated, a final number of 7,560 observations was obtained for 1,080 companies. The sample was structured on fifteen industries, according to the first digit of the NACIS code, keeping in sample only industries in which there are more than 10 companies.

4. Results

Most of the companies in the sample (50%) are production companies. As can be seen from **Table no. 1**, at a general level it can be said that audit fees do not exceed 0.2% of the total assets of audited companies in any industry.

Individually, 708 audit fees observed exceed 1% of total assets, of which in 19 cases (for 5 companies), the audit fee was higher than 10%.

Table no. 1. Audit fee distributed by industry

Industry	No. of entities	Average audit fees per industry (Eur)	Average total assets per industry (Eur)	Proportion of audit fees in average of total assets
Production	505	873 974	1 533 319 995	0.06%
Trade	146	5 231 008	3 155 769 988	0.17%
Professional, scientific and technical services	80	633 290	1 906 544 345	0.03%
Information technologies	72	931 328	614 947 330	0.15%
Constructions	69	3 995 307	3 769 968 687	0.11%
Utilities	45	724 054	1 401 190 824	0.05%
Mining and extraction activities	34	9 555 385	9 642 473 966	0.10%
Accommodation and dining services	23	3 448 664	3 604 635 973	0.10%
Administrative, support and waste management services	23	4 284 116	7 055 611 152	0.06%
Management	22	25 515 978	15 307 402 947	0.17%
Agriculture, fish farming, hunting and forestry	19	1 144 587	858 947 294	0.13%
Other services	17	1 348 576	1 817 091 356	0.07%
Art, entertainment and recreation	14	6 197 998	19 376 596 639	0.03%
Health and social assistance	11	1 923 491	2 649 897 692	0.07%
Total	1080	4 565 824	6 207 518 876	0.07%

Source: Own processing using Audit Analytics, 2024

The international audit market is quite concentrated if it is calculated strictly from the point of view of the audit fee. 98% of the total audit fees were collected by one of the 4 major audit firms, while only 2% of the total audit fees were collected by other firms. As can be seen in Table no. 2, Big Four companies have higher audit fees than other companies, because although the market share of Non-Big Four companies in the total audit fees is only 2%, if we use in the calculation the number of firms instead of the audit fee, the proportion increases to 25%.

Table no. 2. Audit market structure

Auditor type	Entities	Percent	Audit fees (Eur)	Percent
Non-Big Four	1922	25%	695 910 545	2%
Big Four	5638	75%	33 821 721 622	98%
Total	7560	100%	34 517 632 167	100%

Source: Own processing using Audit Analytics, 2024

According to the results presented in Table no. 3, the sample is very heterogeneous. The median is 13 times lower than the average, and the standard deviation is 4 times higher than the average. The number of companies that are in the upper half of the median is 3.21 times higher than the number of companies that have a total of assets higher than the sample average. Since only publicly listed

companies were included in the study sample, for which there was as complete financial information as possible, including published audit fees, the existence of extreme points is considered normal. The companies in the sample should be highly performing companies, which is why the existing extreme points pull the average of the total assets upwards. The same applies to total commitments, calculated by decreasing the cash flow from operational activities from the net profit of the company (calculated according to the Jones model).

Table no. 3. Sample heterogeneousness

Total companies	Total assets (Eur)	No. companies above average/ median of total assets	Total audit engagement (Eur)	No. companies above average/ median of total assets
Average of total assets	458 351 000	3 780	19 958 000	3780
Median of total assets	6 207 518 876	1 174	312 025 528	1065
Standard deviation	25 502 722 298	Does not apply	1 387 082 130	Does not apply

Source: Own processing using Audit Analytics, 2024

The percentage of economic entities audited by Big Four or Non-Big Four that have total assets above average is shown in **Table no. 4**. The percentage for audit fees charged by Big Four and Non-Big Four in the total fees charged remains unchanged, but the percentage of companies audited by Non-Big Four companies drops significantly in the case of audit clients who have total assets above the calculated sample average (from 25% to 4%), and 16% of all observations (1,174 out of 7,560) account for 25% of all audit fees.

Table no. 4. Audit fee by auditor type

Auditor type	Entities	Percent	Audit fee (Eur)	Percent
Total entities with total assets above average				
Non-Big Four	42	4%	151 789 243	2%
Big Four	1132	96%	8 525 012 523	98%
Total	**1174**	**100%**	**8 676 801 766**	**100%**
Total entities				
Big Four	1922	25%	695 910 545	2%
Non-Big Four	5638	75%	33 821 721 622	98%
Total	**7560**	**100%**	**34 517 632 167**	**100%**

Source: Own processing using Audit Analytics, 2024

Table no. 5 shows the audit service provider that has the highest market share (after total audit fees) in each industry, based on the analysed sample. The most obvious dominance can be seen in the mining and extraction industry (90%, Ernst & Young), followed by information technologies (73%, PricewaterhouseCoopers). PwC and EY are the companies that in 2022 had the highest revenues worldwide from the audit activity, and our results do not contradict this fact (Statista, 2023). It is noted that no industry is dominated by audit fees by suppliers other than Big Four.

Table no. 5. Audit market by market share		
Industry	**The auditor with the highest market share**	
Accommodation and dining services	EY	34%
Administrative, support and waste management services	PWC	64%
Agriculture, fish farming, hunting and forestry	PWC	44%
Art, entertainment and recreation	PWC	49%
Constructions	EY	56%
Health and social assistance	Deloitte	32%
Information technologies	PWC	73%
Management	EY	39%
Production	PWC	39%

Source: Own processing using Audit Analytics, 2024

In terms of type of opinion (modified/unmodified), the number of modified opinions is 0.79% (60 out of 7560). Because the unmodified opinion means that the audit client prepared his financial statements in accordance with the reporting framework and without insignificant errors, it can be concluded that those sampled audit clients prepared their financial statements correctly. The number of modified opinions did not increase in the period 2019-2021, period financially influenced by the COVID–19 pandemic. No conclusion can be drawn on the influence of the COVID–19 pandemic strictly from these data, because companies not included in the Audit Analytics database have been removed from the sample during all years of the reference period. If following the pandemic certain companies were delisted from the stock exchange, or if they went bankrupt, ending the activity, these companies will not be included in the sample. The information is visible in **Table no. 6**.

Table no. 6. Structure by opinion type								
Year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**Total**
Unmodified opinion	1071	1073	1069	1074	1070	1071	1072	7500
Modified opinion	9	7	11	6	10	9	8	60
Total	**1080**	**1080**	**1080**	**1080**	**1080**	**1080**	**1080**	**7560**

Source: Own processing after Audit Analytics, 2024

Similar research on the audit market was conducted by Bulucea et al. (2022); Crucean & Hategan (2022). The results obtained confirm the high concentration of the audit market and the supremacy of Big Four companies. The industry structure obtained from this study is different from the studies mentioned because of the sample sizes and the fact that in this study the financial sector was removed from the analysis. Since we stopped to analyze the total accounting commitments, due to the heterogeneity of the sample, we conclude that their effect on the financial statements must be treated in a more complex analysis. Grosu et al. (2023) analysed the quality of the audit in improving financial transparency, taking into account the level of discretionary commitments as an influence factor of the audit opinion, demonstrating a significant effect.

Conclusions

The access to information about companies is less restricting than ever, opening new horizons for researchers. The questions that are asked in the recently published literature are much more punctual than before, the general themes originally studied becoming the control variables of contemporary studies. The number of independent variables has increased in recent years. The quality of the audit has been studied from several points of view. The audit committee, the degree of availability of resources in audit companies, the auditor's experience and expertise in the field are only a few indicators through which the inputs of the audit process have been analyzed. The audit process was analyzed from the point of view of the inspections carried out by various professional bodies

on audit companies. Because all audit work takes place through audit companies that develop testing methodologies and organizational culture, the, researchers in the field have tried to identify quality differences by comparing audit companies (Big Four, Non-Big Four) or audit offices (referring to the expertise of audit offices in the geographic area of the audit clients' headquarters).

The quality of the audit cannot be determined directly, which is why over time, the researchers looked at this subject indirectly through various indicators such as the quality of financial reporting and audit fees.

Financial audit is a subsystem of financial reporting, which is why the quality of financial statements can determine the quality of the audit. Audit fees have been used to understand the auditor's independence.

In order to obtain an overview of the audit services market, the sample used in this study is 1080 listed companies in Europe in the period 2016-2022. The dominant industry in Europe is production, with production companies accounting for 50% of our sample. The auditor's independence measured by audit fees does not appear threatened, with the proportion of audit fee averages in the average of total company assets below 0.2% in all industries. The audit services market is highly concentrated, with 98% of all audit fees collected by the four largest audit and advisory service providers.

It was analyzed how the two mentioned indicators (audit fees and results management) are visible through the overall analysis of the audit market. According to the results obtained, it can be said that we can make a general picture of the auditor's independence through the analysis of the audit market, but the management of the results involves detailed and in-depth analysis. Due to an extremely large dispersion within the sample (probably in the case of population the size of the dispersion is similar) in terms of total assets and total accounting commitments no conclusions can be summarised objectives on the management of the results from the analysis of the audit market in general.

As limits of the study, in order to identify the relevant indicators of audit quality, in the analysis of the specialized literature were chosen mainly articles published in recognized journals in the field of accounting (Hay et al., 2006). Publishers may prefer studies where there are significant effects (because they would be more interesting) to publication, to the detriment of methodologically correct studies, but they have insignificant results. The sample used also includes companies listed on the European stock exchanges, which have published audit fees and financial *information* as complete as possible. Extrapolation of results to non-listed companies, small companies and non-European companies is not recommended.

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Comparative Analysis

Regarding the Sustainability Reporting Practice in Romania at the Level of Sustainability Reports

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Abstract

There is currently a heated debate surrounding the proliferation of non-financial reporting regulations, which is why there is great concern about the less likely scenario of harmonization of the various reporting frameworks. Increasing efforts to define global or at least regional non-financial reporting regulations and their implementation through reliable corporate reporting systems is limited by the barriers and challenges raised by specific country, industry and company characteristics. The question is how companies adapt to this confusing corporate reporting landscape. The purpose of this paper is to perform a reference analysis regarding the completeness of the reports drawn up from the perspective of the degree of coverage of the GRI checklist. Thus, the Global Reporting Initiative, respectively GRI, developed a template in the form of a checklist for sustainability reporting called the GRI Content Index template, considered a reference element in our analysis regarding sustainability and sustainable development and the mapping of the various SDGs (respectively Sustainable Development Goals known in Romania as Sustainable Development Goals), on a sample of companies listed on the Bucharest Stock Exchange. The purpose of the research is to provide an image of the level of transparency of companies listed on the stock exchange, regarding the sustainability of business models. The methodology used is based on the quantitative analysis of the GRI index and the practical implications of the study mainly reveal the best practices in the field of sustainability reporting, viewed from the perspective of neo-institutional theory, which highlights the coercive, normative and mimetic forces related to sustainability disclosures.

Key words: *sustainability; sustainable reporting; GRI;*

JEL Classification: *M21, M40, M41, M42*

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Introduction

In the current context of European sustainability reporting regulations, Directive 2014/95/EU (NFRD) plays an important role in requiring large companies to disclose non-financial information regarding their impact on the environment, society and corporate governance. This directive was created to improve the transparency and comparability of this information, thus responding to the demands of investors and other stakeholders who want a clearer assessment of sustainability risks (European Parliament and Council, 2014). Empirical studies have shown that mandatory regulations on sustainability disclosures had a significant positive impact on corporate behavior, causing an increase in both the quantity and quality of reported information (Ioannou and Serafeim, 2019).

In Romania, the implementation of these regulations still presents challenges for companies listed on the Bucharest Stock Exchange (BSB), especially in the context of preparations for compliance with the requirements of the CSRD Directive (Corporate Sustainability Reporting Directive), which will enter into force from 2024 and which modifies fundamentally the current way of reporting sustainability. The CSRD introduces more reporting requirements and expands the number of companies that must comply.

In this context, our study examines the degree of completeness of the non-financial reports prepared from the perspective of the degree of coverage of the Global Reporting Initiative (GRI) checklist, considered a reference element in our analysis, and the way in which they adopt the Sustainable Development Goals (SDGs) for a sample of companies listed on the Bucharest Stock Exchange (BSB). The purpose of the research is to provide an image of the level of transparency of companies listed on the stock exchange, regarding the sustainability of business models, which is why the research is limited to the analysis of sustainability reports related to the year 2022. The study uses the Data Envelopment Analysis (DEA) methodology to assess the effectiveness of sustainability reporting, highlighting best practices and emphasizing the importance of convergence of reporting practices to ensure greater transparency and accountability to investors and consumers.

The studies carried out so far highlight, on the one hand, the fact that regulations in the field of sustainability and sustainable development have positive effects on corporate behavior, causing an increase in the quantity and quality of information disclosed and at the same time attracting more investors interested in sustainability (Ioannou and Serafeim, 2019). On the other hand, however, the obligation to disclose corporate social responsibility (CSR) information influences the performance of firms, changes the behavior of entities and generates positive externalities, such as reducing water and air pollution, but causes increased costs, which is detrimental to shareholders (Chen, Hung and Wang, 2018).

Thus, considering that there is no consensus regarding non-financial reporting, currently witnessing non-uniform practices of corporate sustainability reporting, our research aims as the main objective (MO):

- ✓ *MO: to outline the implications of the financial results on the level of transparency of companies listed on the Bucharest Stock Exchange, regarding the level and ways of aligning business models with sustainability principles.*

In this context, we consider relevant a comparative analysis of the sustainability reports at the BSB level, in order to identify the motivation behind these reports, especially since these reporting practices are based on a voluntary disclosure. In such conditions, we question to what extent these sustainability reports represent practices of the greenwashing type (ecological disinformation), or are relevant channels of corporate communication with the shareholders and stakeholders of the companies alike.

The proposed study is structured in five sections. Thus, if the first section, here, highlights the preliminary aspects of the undertaken scientific approach, respectively the context of the case study, the second section finds its counterpart in the analysis of the specialized literature. The following two sections present the research methodology, respectively the results obtained and a discussion on them. Finally, the fifth section draws the final conclusions of the research undertaken.

Literature review

Regarding the concepts of sustainability and sustainable development, there are deep theoretical and conceptual foundations, especially related to multiple concepts or theories that allow the choice between stakeholder theory and legitimacy theory or between "sustainability reporting", "ESG reporting" or "CSR reporting ". There is thus a visible hegemony in standard-setting sustainability

reporting (ISSB, EFRAG, GRI, etc.) and numerous ESG disclosure frameworks (eg: GRI, SASB, xxx).

At the European level, the Non-Financial Reporting Directive 2014/95/EU (known by the acronym NFRD) has significantly improved transparency and comparability in sustainability reporting within companies that have been required to report and for those that wish to voluntarily align with these regulations.

In today's spotlight, introduced as part of the European Commission's sustainable finance package, the new sustainability directive, namely the CSRD, notably extends the scope, sustainability disclosures and reporting requirements of its predecessor, the NFRD.

Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amends Directive 2013/34/EU with regard to the disclosure of non-financial information and diversity information by certain large entities and groups. It requires large companies to include in their financial reports a non-financial statement that provides a comprehensive picture of environmental, social, human rights and anti-corruption policies, results and risks. The purpose of the directive is to increase the transparency and comparability of non-financial information disclosed by companies, thus contributing to the identification of sustainability risks and increasing investor and consumer confidence (European Parliament and Council, 2014).

In recent years, companies' voluntary disclosure of social and environmental performance has increased substantially (KPMG, 2013, 2015, 2017, 2020). In addition to voluntary disclosure, made out of the desire to increase the level of transparency and trust in business models, the European Union has required, through directives issued, certain companies to report their performance in non-financial matters, including environmental issues, social and employee, human rights, anti-corruption and bribery (European Union, 2014).

In this context, researchers have begun to investigate the role of non-financial reporting regulations in shaping corporate behaviors (Pizzi et al., 2022; Stolowy and Paugam, 2018). Also, some studies have focused on the impact of regulations in increasing the quality and quantity of disclosure (Ioannou and Serafeim, 2019), while others have examined its effects in relation to CSR activities (Jackson et al., 2020), corporate performance (Chen, Hung and Wang 2018) and social impact (Chen, Hung and Wang, 2018; Jackson et al., 2020).

The analysis of Directive 2014/95/EU highlights the various challenges and opportunities in the context of non-financial reporting. The study by Venturelli et al. (2022) point out the need to revise the directive to address issues related to the comparability, reliability and relevance of reported non-financial information. It also emphasizes the importance of including the concept of "double materiality" and the development of common reporting standards to improve transparency and corporate accountability. These adjustments are essential to ensure that non-financial reporting meets the expectations of investors and other stakeholders (Venturelli et al., 2022).

The analysis carried out by Nicolò et al. (2022) emphasize the importance of gender diversity in boards of directors for improving ESG (Environmental, Social, Governance) disclosure practices. The study, which analyzed 1,392 European companies over a six-year period, demonstrates that the presence of women on boards of directors has a significant positive impact on the level and quality of ESG disclosures. This suggests that gender diversity can contribute to increasing corporate transparency and accountability, facilitating the transition to sustainable corporate governance (Nicolò et al., 2022).

Directive 2014/95/EU was a major catalyst for improving the transparency and quality of non-financial information reported by large companies in the European Union. Implemented to address environmental, social and governance reporting needs, this directive obliges companies to disclose relevant data reflecting their impact on society and the environment. Studies by Ioannou and Serafeim (2019) demonstrated that these regulations had positive effects on corporate behavior, causing an increase in the quantity and quality of information disclosed and also attracting more investors interested in sustainability.

In their analysis, Ioannou and Serafeim point out that regulations on mandatory sustainability disclosures have led to a significant increase in the level of ESG (Environmental, Social, Governance) disclosures among companies in various industries. They used a differential approach to assess the impact of regulations in China, Denmark, Malaysia, and South Africa, finding that treated firms significantly increased disclosures compared to control firms. In addition, companies have shown an increased tendency to obtain voluntary assurances to improve the credibility of disclosures and to adopt reporting lines that improve the comparability of information (Ioannou and Serafeim, 2019).

Chen, Hung, and Wang (2018) investigated how the obligation to disclose corporate social responsibility (CSR) information influences firm performance and social impact in China. Using a difference-in-differences methodology, the study compared firms that were required to report CSR information with those that were not. The results showed that firms required to disclose this information experienced a decrease in profitability after the implementation of the mandate. Cities with a large number of firms affected by the mandate also saw a reduction in water and air pollution. These findings suggest that mandatory CSR reporting led to changes in firms' behavior and generated social benefits, although these changes came at a cost to shareholders (Chen, Hung, & Wang, 2018).

Methodology

The main objective of the paper is to outline the implications of the financial results on the level of transparency of companies listed on the Bucharest Stock Exchange, regarding the level and ways of aligning business models with sustainability principles. So, the starting point of the empirical analysis is represented by the analysis of sustainability reports.

The dynamics of the regulatory framework regarding sustainability reporting (durability) at the level of the Romanian capital market, through which the institutional framework made sustained efforts to align with the community acquis, which culminated in the approval of the Romanian Code of Sustainability, raises serious questions regarding the level of preparation of companies at the local level in terms of the future requirements transposed by the CSRD directive, applicable starting from 2024. However, the European Commission has published the decision to postpone the application of sector-specific ESRS standards (European Sustainability Reporting Standards) in the case of European companies, opting only for the application of general European sustainability standards, until June 30, 2026.

However, this decision helps companies to intensify their efforts to implement sustainable reporting systems, processes, and tools. An opportune approach in this context could be that of benchmark analysis, through which public authorities and professional bodies alike, support the initiatives of de facto convergence of reporting practices regarding the sustainability of companies. This approach should aim to outline a set of good practice elements developed with reference to a sustainability reporting framework, such as the ESRS standards, for the implementation of which EFRAG has published a series of implementation guides to date.

However, considering the complexity of the sustainability reporting framework and at the same time the complexity of the companies' business models, largely determined by the specifics of the sector, we are currently witnessing non-unitary practices of corporate sustainability reporting. In this context, we consider relevant a comparative analysis of the sustainability reports at the BSB level, in order to identify the motivation behind these reports, all the more since these reporting practices are based on a voluntary nature. In such conditions, we question to what extent these sustainability reports represent greenwashing practices, or are relevant channels of corporate communication with the shareholders and stakeholders of the companies alike.

This research context informed the design of the research design. Basically, the present paper is part of the area of positivist research, based on an empirical analysis, which studies the sustainability reports of the most liquid companies listed on the BSE, within the limits of the availability of information from public sources, such as the web pages of the analyzed companies.

The purpose of the research is to provide an image of the level of transparency of companies listed on the stock exchange, regarding the sustainability of business models, which is why we limited the research to the analysis of sustainability reports for the year 2022. Out of the total of 87 companies listed at BSB at the level of the regulated market segment, we obtained the information necessary for the empirical analysis only in the case of 22 companies, which operate in several sectors of activity (see **Table no. 1**). Therefore, most of the sample is made up of companies operating in the industrial sector, which implies an increased level of expectations regarding the volume of information regarding the sustainability of the business model, at least from the perspective of the increased degree of incidence of risks to which these companies are exposed exposes, as is the case with environmental risks or social risks.

Table no. 1. Composition of the sample of analyzed companies		
Majority capital	**Sector**	**No. of companies**
private	Construction	2
	Financial	3
	Industry	9
	Logistics	1
	Medical	1
	Natural Resources	1
	Communications	1
public	Medical	1
	Natural Resources	3

Source: authors projection

The comparative analysis of the level of transparency of the analyzed companies is reported to an analytical approach that consists in identifying companies that represent models to follow in terms of the practice of sustainability reporting. In this direction, we consider relevant a DEA (Data Envelopment Analysis) analysis through which we identify the companies with the highest level of transparency in the field of corporate sustainability, evaluated from the perspective of financial constraints (motivations). Thus, the results will reflect the gaps of the analyzed companies, in terms of transparency regarding sustainability reporting, compared to the companies considered role models.

Table no. 2. Description of the variables used in the empirical analysis		
Variable DEA	**Variable**	**Description**
Input	ESG scor	The index is calculated as the weight of the items found in the verification matrix integrated in the sustainability report of each company, from the total of 126 items considered from the checklist proposed by GRI until 2021. The maximum level reached is 100%.
	E scor	The index is calculated as the weight of the items found in the verification matrix integrated in the sustainability report of each company specific to the reporting requirements regarding the impact of the business model on the environment, from the total of 43 items considered from the checklist proposed by GRI until 2021. The maximum level reached is 100%.
	S scor	The index is calculated as the weight of the items found in the verification matrix integrated in the sustainability report of each company specific to the reporting requirements regarding the impact of the business model on the community, from the total of 36 items considered from the checklist proposed by GRI until 2021. The maximum level reached is 100%.
	G scor	The index is calculated as the weight of the items found in the verification matrix integrated in the sustainability report of each company specific to the reporting requirements regarding the implementation and effectiveness of ESG governance mechanisms and tools, from the total of 17 items considered from the checklist proposed by GRI until 2021. The maximum level reached is 100%.
Input	Sector	It indicates the number of distinct sectors in which each company operates. This factor is essential in evaluating the degree of transparency of companies regarding sustainability performance, considering that an increased number of divisions operating in different sectors generates an increase in the number of risks and the magnitude of the effects associated with their occurrence, especially in the case of some sectors traditionally known as being characterized by a significant negative impact on the environment, or on the values, rules or commitments towards the community. This indicator is all the more important, given that companies fail to find viable solutions regarding corporate governance mechanisms and tools aimed at achieving ESG goals.

Variable DEA	Variable	Description
	Size	It represents the natural logarithm of the level of assets reported on the balance sheet, which suggests the level of operational and financial capabilities available to each company. A high level of assets, especially at the level of the PPE indicator, indicates an increased level of environmental risks, especially in the conditions of extended production capacities at the level of several geographical regions, or national jurisdictions, which are subject to regulatory frameworks distinct.
	Sales	is the natural logarithm of the level of reported sales, which suggests the volume of activity that each company carries out. An increased volume of activity suggests a higher incidence of associated ESG risks, conditions in which companies are tempted to report as much non-financial information as possible precisely to reduce possible non-compliance costs or costs related to controversial ESG contractual obligations .
	Profitability	It constitutes the rate of return on economic assets, translated by the ROA percentage level reported by each company. Based on the specialized literature, a close relationship was drawn between financial performance and, respectively, the level of the sustainability reporting index. On the one hand, a high level of profitability gives companies the opportunity to cover the costs of preparing sustainability reports, which reduces the level of managers' reluctance. On the other hand, an increased level of transparency in the sphere of sustainability may represent a desire of companies trying to send signals to the capital markets, in order to improve the attractiveness of securities issued by the company.
	Financial leverage	is defined as the ratio between equity and debt capital, to suggest the degree of dependence of the company on borrowed financial resources, respectively the level of involvement of creditors in the strategic decisions of the company, including in terms of investment and financing decisions of some projects sustainability strategies.
	Employees	The number of employees is important in explaining the level of corporate transparency regarding the sustainability information of business models. On the one hand, based on the theory of legitimacy, employees must understand the company's commitment to its role in the community and to its employees, whether it is about respecting the rights provided by the law or about their professional development, or protecting their well-being. On the other hand, employees are perceived as a key element in sustainable reporting, at least from the perspective of their skills, experience and professional expertise and their commitment to the company's goals.

Source: authors projection

To carry out this analysis, we start from a series of financial and non-financial information regarding the 22 analyzed companies. In **Table no. 2** we provide a brief description of the main variables included in the DEA (Data Envelopment Analysis) benchmarking analysis.

The DEA model can be formalized according to the following mathematical optimization program (Lofti et. al., 2020). This model is Output-oriented, with constant returns to scale, which implies a maximization of the output variables from **Table no. 2**, considering a fixed level of the input variables.

$$\max \sum_{i=1}^{m} v_i \cdot x_{ij} + v_0^+ - v_0^-$$
$$\sum_{j=1}^{n} \lambda_j \cdot x_{ij} - v_0^- = x_{ij0} \ , \forall i$$
$$\sum_{j=1}^{n} \lambda_j \cdot y_{rj} + v_0^+ = y_{rj0} \ , \forall r$$
$$\sum_{j=1}^{n} \lambda_j = 1$$
$$\lambda_j \geq 0, \ \forall j, \emptyset \ free$$

In this mathematical optimization program, we consider n analyzed firms (DMUs - decision making units), which are analyzed from the perspective of m output variables (x_{ij}), and which produce s input variables (y_{rj}). The DEA model generates an optimal solution for each analyzed company in relation to the other companies included in the sample. The mathematical model for optimizing the outputs (sustainability reporting indices) in relation to the financial constraints of each company, generates the gap between it and the top companies in terms of sustainability reporting (v_0^+ / v_0^-), where λ_j represents the weight of each financial constraint (motivation). The objective function seeks to maximize the sustainable reporting indices, considering the financial restrictions specific to each firm.

Based on these data, we will proceed to an analysis of the sustainability reports of two companies, a company

from the class of "model" companies, compared to a company from a similar activity sector, but from the class of "inefficient" companies in terms of level of transparency regarding the disclosed sustainability information, in the specific context of financial restrictions. For this purpose, we will proceed to a basic text mining analysis, with the help of Nvivo, which consists in evaluating the most frequent words and, respectively, identifying the main themes addressed in the sustainability reports.

Results and discussions

The descriptive analysis of the analyzed sample is summarized in **Table no. 3**. Based on these statistics, we observe a relatively high level of homogeneity at the level of the analyzed sample. It should be noted that the sustainability reports indicate a unitary approach of the companies in terms of addressing the general aspects regarding the sustainability of business models, from the perspective of the GRI reporting framework.

Table no. 3. Descriptive statistics

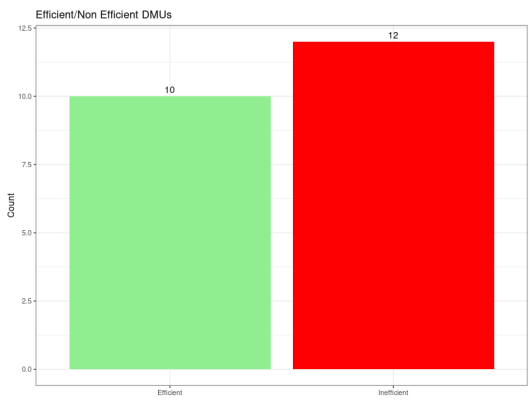
Variables	Average	Standard Error	Standard Deviation	Minim	Maxim
Size	20.93	0.472	2.212	16.63	25.62
Sale	20.33	0.475	2.230	15.75	24.92
Profitability	0.102	0.016	0.077	-0.057	0.274
Financial leverage	0.595	0.230	1.077	0.002	4.531
Number of sectors	3.182	0.376	1.763	1	7
Employees	6.460	0.472	2.212	1.099	9.329
ESG score	0.998	0.002	0.007	0.967	1.000
E score	0.395	0.046	0.216	0.000	0.767
G score	0.535	0.056	0.264	0.059	1.000
S score	0.557	0.059	0.275	0.111	0.972

Source: authors projection

The exception is given by the level of financial leverage, which reveals a significant differentiation between companies from the perspective of financing policy, with direct implications on the autonomy of the companies' management to make strategic decisions in the area of sustainable development of the business model.

Table no. 4. The average level of gaps of "inefficient" companies

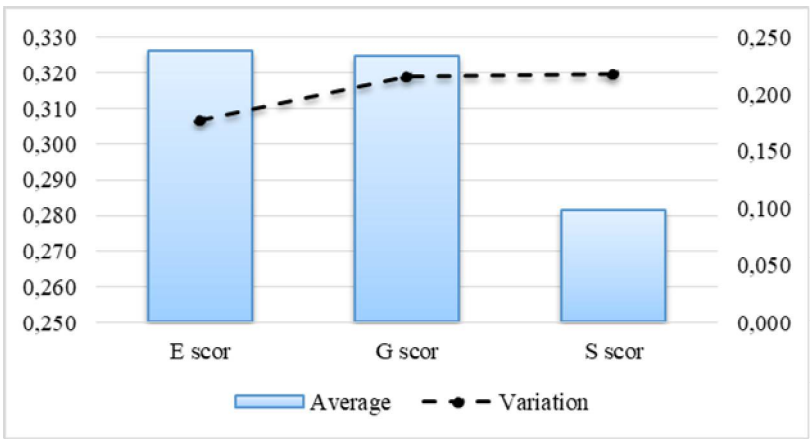
Domain	No. of companies	Average efficiency score	% Gaps
Construction	2	0.654	-0.346
Financial	2	0.232	-0.768
Industry	2	0.588	-0.412
Medical	2	0.201	-0.799
Natural Resources	3	0.506	-0.494
Technology	1	0.520	-0.480



Source: authors projection

The results of the DEA analysis performed at the level of the analyzed sample reveal a relative degree of convergence of sustainability reporting practices, considering a number of 10 companies out of the total of 22 companies analyzed, which reach a maximum "efficiency" score. However, among the companies that need to improve their sustainability reporting practice, from the perspective of the degree of coverage of the GRI checklist considered a reference element in our analysis, an equal distribution is observed at the level of the activity sectors included in the analysis (see **Table no. 4**).

Figure no. 1. Gaps in ESG reporting scores



Source: authors projection

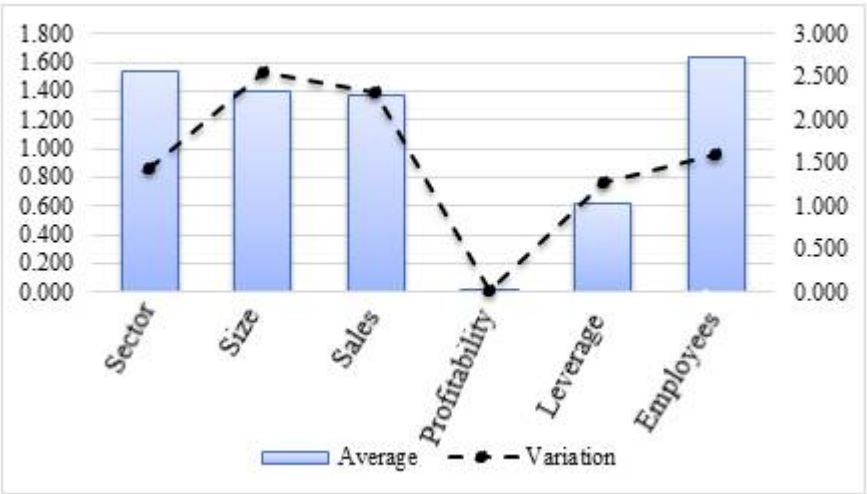
The gaps of the companies classified as "inefficient" compared to the companies considered role models based on the DEA analysis, are more important at the level of transparency of the companies in terms of the environmental dimension (E) and respectively the corporate governance dimension in regarding the sustainable development of companies (see ***Figure no. 1***). Therefore, the analysis of sustainability report score reveals a need to improve the sustainability reporting practice of companies, by addressing in the sustainability report as many aspects as possible regarding the impact of the business model on the environment and, respectively, regarding the mechanisms and instruments of corporate governance aimed to contribute to sustainable development. However, these results must be viewed carefully considering the relatively high level of variation of the sustainable reporting indices regarding these dimensions (see ***Figure no. 1***), against the background of the specificity of the activity sector in which the analyzed companies operate, and, respectively, of the model of business of each company.

A lower level of the volume of information regarding the impact of the business model on the environment is expected. On the one hand, companies avoid publishing an increased volume of such information, considering possible costs with future lawsuits (litigation costs). On the other hand, we must note that each business model is characterized by particularities that may not include certain environmental aspects included in the GRI checklist used in our analysis.

However, a low level of the volume of information regarding the mechanisms and instruments of corporate governance defined and implemented with the aim of facilitating the achievement of the companies' sustainable development objectives, rather boils down to the specifics of each company. Each company decides to what extent this information should be disclosed, to the extent that these processes, systems, policies and employees, which are incorporated into the mechanisms of corporate governance, prove to be effective or to the extent that they are implemented. Otherwise, either the reduced level of effectiveness, or their non-implementation, may generate negative signals at the level of the capital markets and

may determine potential costs of non-compliance based on checks carried out by public authorities based on preliminary information of the checks that are collected from these sustainability reports.

Figure no. 2. Gaps in financial restrictions (motivations)



Source: authors projection

In ***Figure no. 2*** we represent the main slacks (gaps) resulting among companies that need to improve their sustainability reporting index, especially in terms of the environmental dimension and the corporate governance dimension, respectively. These results reveal significant differences at the level of all the factors considered in the analysis (input variables), except the level of profitability.

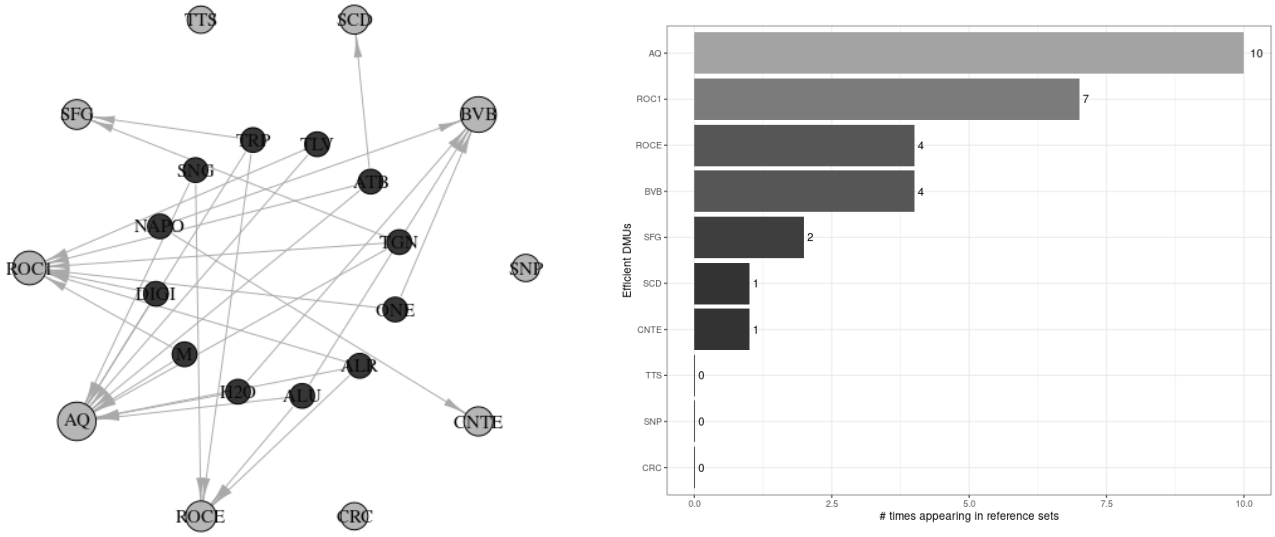
Therefore, the level of profitability of the companies is not a determining factor in differentiating the companies from the perspective of the level of the sustainability reporting index.

We appreciate that these results suggest the impact of the mandatory nature of sustainability reports, which must be published, regardless of the level of profitability of the companies, or the level of the costs of preparing and providing these reports. It is true that this mandatory nature of sustainability reports translates in many cases into the dissemination of more general, superficial information, without really touching on the relevant aspects regarding the sustainability of business models. This is the reason why at the present time, at the international level there is an intense debate regarding the optimal level of regulation of this type of corporate reports, considering the risk of greenwashing through sustainability reports.

On the other hand, we notice that the biggest gaps appear in the analysis of the differences between companies in terms of the number of sectors in which they operate and, respectively, in terms of the number of employees. Indeed, companies that operate in several sectors of activity have a higher level of incidence of ESG type risks, either generated by the specifics of the sector or by the volume of activity of the companies. Also, as the majority of companies involved in the sustainability reporting process note, a fundamental factor in ensuring sustainability reporting is given by human resources. Thus, a larger number of employees implies a higher degree of their specialization (skills, experience, expertise), which outlines a wider area of organizational capabilities that facilitate an increased level of corporate sustainability performance and respectively a high level of accuracy and relevance of sustainability reports.

In ***Figure no. 3*** we illustrate a representation of the links between the analyzed companies, from the perspective of the gaps between the companies in terms of input variables. We observe that Aquila Prod Com (AQ), Roca Industry (ROC1), or RomCarbon (ROCE) represent the companies with the best sustainability reporting index, under the constraints indicated by the business model and financial restrictions.

Figure no. 3. Analysis of the links between companies from the perspective of comparable companies



Source: authors projection

In **Table no. 5** we show the ranking obtained based on the DEA analysis, starting from the ranking of the companies, in ascending order, according to the DEA score, the E score and the G score respectively. At the top of the ranking is the company Aquila, which carries out a predominant activity in the sphere of logistics services, followed by the company RomCarbon (ROCE), or the company ChimComplex (CRC), which operates in the industrial sector. All these companies paid more attention to environmental aspects and corporate governance, respectively, compared to the other companies with which they were compared (peers).

Table no. 5. Ranking of analyzed companies based on the DEA efficiency score

Domain	Cod BSB	Capital	Head Office	E score	G score	S score	Score DEA	Rank
FMCG	AQ	private	Romania	0.767	1.000	0.972	1	1
Industry	ROCE	private	Romania	0.767	0.941	0.972	1	2
Industry	CRC	private	EU	0.767	0.941	0.972	1	3
Natural Resources	SNP	private	EU	0.628	0.882	0.861	1	4
Industry	SFG	private	EU	0.488	0.588	0.750	1	5
Financial	BSB	private	Romania	0.488	0.706	0.583	1	6
Logistics	TTS	private	Romania	0.442	0.706	0.583	1	7
Industry	CNTE	private	EU	0.419	0.412	0.667	1	8
Industry	ROC1	private	Romania	0.419	0.529	0.444	1	9
Industry	SCD	private	EU	0.465	0.059	0.139	1	10
Construction	NAPO	private	Romania	0.279	0.353	0.639	0.745	11
Industry	ALU	private	EU	0.442	0.294	0.583	0.647	12
Construction	ONE	private	Romania	0.186	0.412	0.194	0.564	13
Natural Resources	SNG	public	Romania	0.442	0.647	0.722	0.559	14
Natural Resources	TGN	public	Romania	0.279	0.824	0.444	0.532	15
Industry	ALR	private	Romania	0.442	0.412	0.722	0.529	16

Domain	Cod BSB	Capital	Head Office	E score	G score	S score	Score DEA	Rank
Telecommunications	DIGI	private	Romania	0.349	0.412	0.528	0.520	17
Natural Resources	H2O	public	Romania	0.256	0.353	0.583	0.427	18
Pharmaceutics	M	private	Romania	0.163	0.294	0.472	0.396	19
Industry	TRP	private	Romania	0.140	0.353	0.194	0.309	20
Financial	TLV	private	Romania	0.070	0.471	0.111	0.155	21
Pharmaceutics	ATB	public	Romania	0.000	0.176	0.111	0.006	22

Source: authors projection

However, the purely quantitative analysis of sustainability reports is not sufficient, considering the fact that companies' practice of completing the GRI checklist is sometimes questionable, as they mark the fact that some aspects provided in the checklist are addressed in the report, without taking into account by the fact that in many cases the information thus transmitted is often of a general nature, without providing conclusive information for the real assessment of the sustainability of business models.

Table no. 6. Text characteristics of the analyzed sustainability reports

Characteristics		Report Romcarbon 2022	Report TeraPlast 2022	Characteristics		Report Romcarbon 2022	Report TeraPlast 2022
General	Number of page	117	85	Complexity	Number of themes extracted	61	63
	Number of sentences	2656	1996	Sentence classification (sentiment analysis)	extremely negative	47	24
	Count words	29077	31497		moderately negative	160	126
	Words per sentence	15.8	15.8		moderately positive	189	161
	Syllables per word	1.800	1.800		extremely positive	51	22
	Lexical density	0.56	0.56	Stakeholder engagement		Yes	Yes
	Lexical diversity	0.12	0.12	Double materiality		Yes	Yes
Inteligi-bility	Flesch index	10.6	12.0	The map of double materiality		No	Yes
	Smog Index	9.9	11.4	Corrective measures Risk management		Yes	No

Source: authors projection

• Sentiment analysis – specific text mining type of analysis tool that expresses the degree of optimism of the expression of the report (of the studied document)

• Flesch index, Smog index - specific text mining analysis tools that express the level of simplicity / understanding of the analyzed text.

To this end, we continue the quantitative analysis with an analysis of the content characteristics, this time summarized in two companies operating in the same sector of activity, but placed in different optimal classes of the sustainability reporting index (**Table no. 6**).

The companies analyzed further are RomCarbon (ROCE) and TeraPlast (TRP), respectively, considering the link penciled in ***Figure no. 3***, between the two companies. RomCarbon is considered a model to follow in the practice of sustainability reporting, from the perspective of the sustainable reporting index, compared to TeraPlast which, according to DEA's analysis, should improve the content of its sustainability report.

Figure no. 4. Representation of the SDGs addressed in the analyzed sustainability reports

SDG	1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION
Raport sustenabilitate Romcarbon 2022	-	-	x	x	x	-
Raport sustenabilitate TeraPlast 2022	-	-	x	x	x	-
SDG	**7 AFFORDABLE AND CLEAN ENERGY**	**8 DECENT WORK AND ECONOMIC GROWTH**	**9 INDUSTRY, INNOVATION AND INFRASTRUCTURE**	**10 REDUCED INEQUALITIES**	**11 SUSTAINABLE CITIES AND COMMUNITIES**	**12 RESPONSIBLE CONSUMPTION AND PRODUCTION**
Raport sustenabilitate Romcarbon 2022	x	x	x	-	-	x
Raport sustenabilitate TeraPlast 2022	x	x	x	-	-	x
	13 CLIMATE ACTION	**14 LIFE BELOW WATER**	**15 LIFE ON LAND**	**16 PEACE, JUSTICE AND STRONG INSTITUTIONS**	**17 PARTNERSHIPS FOR THE GOALS**	
Raport sustenabilitate Romcarbon 2022	-	-	-	-	-	
Raport sustenabilitate TeraPlast 2022	x	-	x	-	-	

Source: authors projection

However, the analysis of the text features and content of the two reports allowed us to deduce a series of observations relevant to our discussion:

- the RomCarbon report has a larger number of pages;
- both reports have a similar level of intelligibility, from the perspective of the use of complex words, the number of sentences per phrase, or the number of words per sentence;
- based on the Flesch index, we notice that both reports have a low level of intelligibility, explained by the use of technical terms and formulation of ideas through longer sentences;
- both reports create relevant information regarding the stakeholders' interest regarding the content they consider to be relevant to their own decisions (stakeholder's engagement matrix)
- both reports are drawn up in order to illustrate the risks and opportunities, both from a financial and a non-financial perspective, regarding the management of the companies' operations (double-materiality assessment);
- only the TeraPlast report contains a map of the risks associated with meeting the company's sustainable development objectives, represented based on the financial impact and the impact on the environment and the community respectively;
- only the RomCarbon report includes a detailed matrix of risks associated with meeting the company's sustainable development objectives, including some planned corrective measures;
- both reports represent the information in a neutral note, considering the classification of the sentences from the perspective of the vocabulary used to induce a positive image of the company (53.69% - positive sentences in the case of the Romcarbon report; 54.95% - positive sentences in the case of the Romcarbon report);
- both reports have a similar level of complexity, considering the number of topics addressed; it should be noted that including the Sustainable Development Goals (SDGs) are covered in a similar manner (see ***Figure no. 4***).

Conclusions

Business cannot thrive in a world of "poverty, inequality, turmoil and environmental stress, and therefore ensuring that the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals" are pursued is a fundamental objective (UNGC, 2018, p. 4).

Recently, at EU level, the Corporate Sustainability Reporting Directive (CSRD) and the Taxonomy Regulation have become legally binding, thus requiring the companies under them to monitor, control and report activities in line with development objectives sustainable development (SDG). Comprehensive assessment of the sustainability of business models are therefore crucial to ensure the competitive advantages and sustainability of companies in the future (Villiers et al., 2024 Nowak et al., 2024).

GRI supports the efforts regarding unitary reporting in terms of sustainability, developing a content index by which the information provided by companies is quantified, thus increasing credibility and transparency both in front of investors and in front of the other stakeholders of the company. However, ticking off the checklist does not always reflect reality. The results of our study confirm that only the general section is fully completed by the analyzed companies, and at the level of the other sections there are disparities from one company to another. In this context, obtaining assurance on non-financial information is becoming increasingly important in a world where more and more emphasis is placed on real sustainable development.

The present work is part of the area of positivist research, based on an empirical analysis, which studies the sustainability reports of the most liquid companies listed on the BSB, within the limits of the availability of information from public sources, such as the web pages of the analyzed companies. The purpose of the research is to provide a snapshot of the level of transparency of companies listed on the stock exchange, regarding the sustainability of business models.

The results of our study highlight the fact that the sustainability reports indicate a unitary approach of the companies in terms of addressing the general aspects regarding the sustainability of business models, from the perspective of the GRI reporting framework. The results of the DEA analysis performed at the level of the studied sample reveal a relative degree of convergence of sustainability reporting practices, considering that 45% of the companies included in the research achieve a maximum "efficiency" score. We believe that the main directions for improving sustainability disclosure should be directed towards the environmental and governance aspects that have a greater financial impact;

However, the present study is limited from the perspective of the sample of analyzed companies. In this context, we appreciate the fact that future research will be able to carry out a more complex analysis based on several company's subject to European directives regarding non-financial reporting.

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ERP Systems - Reliable Tools in Corporate Reporting of Organizations

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Abstract

In the digital age, integrated ERP solutions are the best way to efficiently manage an organization's business and resources, as they contain a number of specific modules for accounting, human resources, production, sales and purchasing. This system is designed to provide efficiency and transparency to all operations performed by organizations.

The aim of this paper is to explore how ERP systems are a reliable solution in the context of corporate reporting. The modules of this system facilitate the collection, storage, and analysis of an organization's financial and operational data, building a solid foundation for accurate and correct reporting of results, especially its performance.

The case study in this paper is summarized as a quantitative analysis based on a questionnaire, which aims to highlight the advantages and challenges of using an ERP system in the context of financial and operational reporting of organizations.

The conclusion of the paper emphasizes the importance of using ERP systems in the corporate reporting of organizations, highlighting the main benefits they bring in terms of operational efficiency, data transparency and correct decision making.

Key words: *ERP systems; corporate reporting; decision transparency; reliable solution; operational efficiency; decision-making process;*

JEL Classification: *M15, M40, M41, M42, M54*

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Introduction

The complex challenges of the digital age concern the efficient management of resources, but also the accurate reporting of results needed to identify the organization's performance. The solution identified by the organization to address these challenges was the implementation of ERP systems (e.g. SAP, WinMentor, Oracle Cloud, Microsoft Dynamics 365, NetSuite and others) representing a modular system that includes a number of department-specific modules with the aim to improve operational processes and to ensure reliable and transparent corporate reporting. ERP systems are considered integrated solutions due to the large number of functions through which many activities can be streamlined. The main functions are provided by modules such as finance-accounting, human resources, inventory management, marketing, sales, with the aim of facilitating the communication of information between departments of an organization through a single system.

The aim of this paper is to analyze the role and impact of ERP systems within organizations, mainly analyzing how corporate reporting can be achieved with the functionalities and benefits offered by these integrated systems. Another starting point in this paper is to analyze how ERP systems help to automate the information flow and reporting process in order to reduce human errors as much as possible.

The paper aims in the results analysis part to identify solutions that help accounting professionals and auditors to overcome the obstacles they face during corporate reporting. Otherwise, in the conclusion section recommendations will be proposed regarding the use of ERP systems as reliable tools for corporate reporting.

1. Literature review

The main key concepts found in this paper have been defined with the help of studies previously conducted by other authors who have dealt with this topic in their works.

Brabete et al. (2024) consider that emerging technologies *"have a direct impact on the accounting profession, in the sense of redefining the role and place that accounting specialists occupy within economic entities"*. Thus, Guşe and Mangiuc (2022) defined in their paper the term digitization as *"the use of digital technologies to change a business model and obtain new opportunities for value and revenue creation"*.

Abejo (2023, p. 2451) mentions in his paper that ERP systems are a system that *"integrates all business functions, starting from administration to financial processes"*, helping to *"integrate and increase the efficiency of business processes"*.

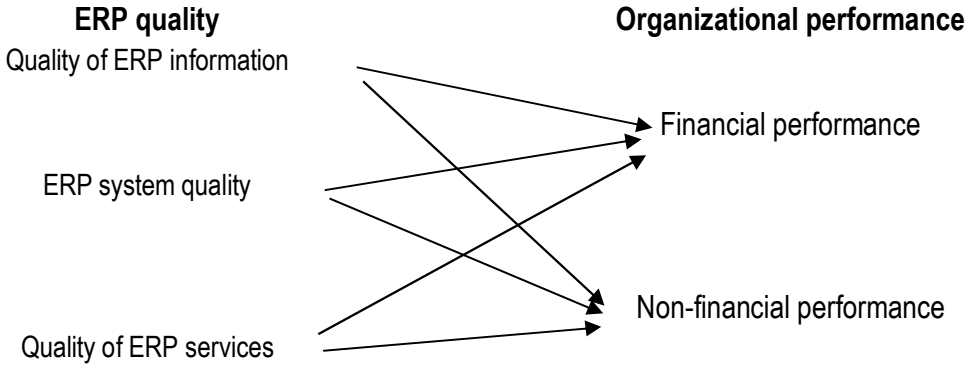
Alsurayyi and Alsughayer (2021, p. 56) consider corporate governance as an *"essential tool in building market trust and attracting investors to the organization globally"*. Setting corporate governance standards and procedures are essential for reducing risks and improving the performance of the organization, increasing transparency of information facilitating improved decision making and reducing conflict of interest.

Serhan and El Hajj (2019) and Balic et al. (2022), state that ERP systems provide the opportunity for the organization to streamline resources, improve their processes and performance as a result of the accuracy and quality of information processed by them. The modules incorporated by these systems optimize the work of accounting professionals and auditors as a result of centralizing data in a single database and improving the flow of information between departments. According to Sheik and Sulphey (2020) and Oyewole et al. (2024), ERP systems provide functions that enable accounting professionals and auditors to analyze and interpret data for decision making (Tarigan, Lianto, and Basana, 2018; Anto and Yusran, 2023).

According to Balic et al. (2022), the quality of ERP systems can be measured along three dimensions (***Figure no. 1***):

- *ERP information quality (ERP information quality)* - reflects the quality of information processing, including how well it meets technical requirements;
- *ERP system quality (ERP system quality)* - is the difference between customers' normative expectations and the perceived performance of the services provided by the information system support;
- *ERP service quality (ERP service quality)* - from the users' perspective, the quality of information can be understood as data that meets the user's needs and requirements.

Figure no. 1. The relationship between ERP quality and organizational performance



Source: Balic et al., 2022

In the following, the author has defined the link between the quality of ERP systems and financial and non-financial performance respectively found in ***Figure no. 1***. In the case of the link between the quality of ERP systems and the organization's financial performance, authors Elbahri et al. (2019), Elsayed, Ammar and Mardini (2019) and Balic et al. (2022) mentioned that performance can be measured by profitability and sales and especially by financial indicators such as return on investment (ROI - en. return on investments), return on assets (ROA - en. return on assets), return on sales (ROS - en. return on sales) and stock returns (en. stock returns). The main reason for this is the way in which organizational resources can be allocated more efficiently. In the case of quality of ERP systems and non-financial performance of the organization, authors Elbahri et al. (2019) and Balic et al. (2022) mentioned that any organization wants to increase its agility in the market, mainly pursuing current and future benefits. The current benefits can fall into the category of process and workflow improvement and also information access. Future benefits are based on higher service quality and better customer support.

According to Gomez-Llanez, Diaz-Leal, and Angarita-Sanguino (2020, p. 146), ERP systems "help to identify the current and future situation of the business, allowing through modular structures the unification of the areas involved in the processes, characterized by the possession of a centralized and standardized database that allows interaction with other applications".

Improving the technological infrastructure of an organization by implementing ERP systems offers the opportunity to reduce costs and increase innovation so that the services provided by these organizations are of the highest quality. Allocating resources more efficiently can give organizations the chance to gain competitive advantage and reduce costs (Huang et al., 2019).

The effect of digitalization using ERP systems is enjoyed by accounting professionals and auditors because it provides a much broader perspective on the organization from analyzing key financial indicators to improving the flow of information between departments (Odoyo and Ojera, 2020; Ivanovic and Maric, 2021). Thus, Kuntum (2019) asserts that ensuring the quality of accounting information requires that it is presented accurately, having a reliable quality providing benefits to users. High quality of information can lead to the success of the organization, as the reverse can cause the failure of the organization (Bovee, 2004 cited by Kuntum, 2019; Pizzi et al., 2023).

Accounting professionals must have the ability to accept new roles such as data analysts or financial analysts, IT auditors or be able to participate in the development of information systems (Guşe and Mangiuc, 2022) to cope with the massive digitalization phenomenon. Calu et al. (2023, p. 392) are of the opinion that accounting professionals should be considered as *"business advisors or partners"* to ensure the smooth running of the organization. Also, Calu et al. (2023, p. 392) refer to them in their paper as *"sustainability guardians"* because they

have adapted a lot *"to sustainability requirements, improving the accuracy of reporting and the quality of sustainable reporting"* by producing integrated reports.

2. Research methodology

This section aims to present the research method addressed in this paper, which consists of a quantitative, questionnaire-based analysis that aims to highlight the advantages and challenges of using an ERP system in the context of financial and operational reporting of organizations.

This approach provides objective and measurable data that is essential for assessing the effectiveness of ERP systems in corporate reporting. The questions in the questionnaire have been specifically designed to capture the perspectives and experiences of ERP users in various organizations. The questionnaire includes both demographic questions to create a profile of the respondents and questions specific to the research topic of the paper. The distribution of the questionnaire was done through online platforms (social networks such as Facebook, LinkedIn, etc.) between 17.02.2023 and 20.04.2024, thus facilitating access to a total of 104 respondents.

The hypotheses formulated for testing the proposed regression model are as follows:

H_1: *The implementation of an ERP system has a significant positive impact on the efficiency of financial reporting processes in organizations (the relationship between the quality of information processed and the efficiency of financial reporting processes was analyzed).*

H_2: *Users' satisfaction with the ERP system is positively correlated with the quality of information generated in corporate reporting (analyzing the relationship between user satisfaction and the quality of information processed).*

In order to ensure the validity and reliability of the results provided by the tool used (PASW Statistics 18), hypotheses were created and tested using the following regression model:

$$y = \alpha_0 + \alpha_1 * GRD + \alpha_2 * QLTY + \alpha_3 * PROC + e$$

where:

GRD – user satisfaction with the ERP system

QLTY – the quality of information processed with these systems

PROC – efficiency of financial reporting processes with these systems

Through this linear regression model, the research aims to provide a clear picture of the role of ERP systems in optimizing reporting processes, thus contributing to a better understanding of the impact of information technologies on organizational performance. The results obtained will be essential for the formulation of practical recommendations for organizations wishing to implement or improve the use of ERP systems.

3. Results analysis

Section 3 aims to present the main results of this paper, highlighting in particular the importance of ERP systems in optimizing organizations' financial and operational reporting processes. These systems provide new directions on how organizations collect, analyze and report data and information in order to ensure transparency and accuracy in corporate reporting.

Regarding the demographic questions in this questionnaire, the sample of respondents consisted of 64% female and 36% male, predominantly aged between 31-50 years, residing in Bucharest and Ilfov county. The last studies predominantly completed are Master's (48%), Bachelor's (19%), Postgraduate (18%), PhD (13%) and High School (2%). The main fields in which the respondents work are: accounting (43%), audit (18%) and IT (39%), with predominantly more than 10 years of seniority in the fields in which they work.

In the following, the hypotheses formulated will be tested, following in **Table no. 1** the Pearson correlation between the variables proposed in each hypothesis.

Table no. 1. Correlation between regression model variables

Correlations

		Raportarea corporativa	Gradul de satisfactie utilizator	Informatiile din rapoarte sunt mult mai clare si de calitate	Eficienta proceselor de raportare financiara
Raportarea corporativa	Pearson Correlation	1	-,442**	-,248*	-,257**
	Sig. (2-tailed)		,000	,011	,009
	N	104	104	104	104
Gradul de satisfactie utilizator	Pearson Correlation	-,442**	1	,296**	,368**
	Sig. (2-tailed)	,000		,002	,000
	N	104	104	104	104
Informatiile din rapoarte sunt mult mai clare si de calitate	Pearson Correlation	-,248*	,296**	1	,483**
	Sig. (2-tailed)	,011	,002		,000
	N	104	104	104	104
Eficienta proceselor de raportare financiara	Pearson Correlation	-,257**	,368**	,483**	1
	Sig. (2-tailed)	,009	,000	,000	
	N	104	104	104	104

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Author's own creation, 2024

The Pearson correlation was analyzed based on two levels of significance, the first with a value of 0.01 and the second with a value of 0.05. Values significant in this respect were marked with a star for significance level (Sig.) values below 0.05 and with two stars for significance level (Sig.) values below 0.01.

Table no. 2. Analysis of the significance threshold for the variables proposed in the regression model

Correlation	Sig. < 0,01	Sig. < 0,05
RAPC - GRD	x	
RAPC - QLTY		x
RAPC - PROC	x	
GRD - QLTY	x	
GRD - PROC	x	
QLTY - PROC	x	

Source: Author's own creation, 2024

As can be seen in **Table no. 2**, the probability with which the proposed hypotheses can be confirmed or refuted is, in this case, 99% for the most part. In the case of hypothesis 1 and 2, it can be said that both can be confirmed based on the correlations obtained. They denote that organizations using ERP systems benefit from better integration of information from various departments, which reduces errors and the time taken to generate reports. ERP systems also allow real-time access to data, facilitating informed and rapid decision-making. ERP systems enable users to be satisfied with the functionality and support provided by the ERP system, as it will produce more accurate and relevant reports for business decisions and provide a solid framework for internal and external audits. Thus, organizations can strengthen their competitive position in the market.

Following the statistical analysis of the regression model using PASW Statistics 18 application, the following results presented in **Table no. 3** and **Table no. 4**, respectively, were obtained.

Table no. 3. Model summary and ANOVA analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,462[a]	,213	,190	,309

a. Predictors: (Constant), Eficienta proceselor de raportare financiara, Gradul de satisfactie utilizator, Informatiile din rapoarte sunt mult mai clare si de calitate

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2,586	3	,862	9,048	,000[a]
	Residual	9,529	100	,095		
	Total	12,115	103			

a. Predictors: (Constant), Eficienta proceselor de raportare financiara, Gradul de satisfactie utilizator, Informatiile din rapoarte sunt mult mai clare si de calitate

b. Dependent Variable: Raportarea corporativa

Source: Author's own creation, 2024

From the results obtained in **Table no. 3**, it can be stated that the variance of the dependent variable (corporate reporting) can only be explained by 21.30% (R^2 = 0.213) by the three independent variables (user satisfaction, the information in the reports is much clearer and of high quality, the efficiency of financial reporting processes). Thus, it can be stated that the value of the degree of determination (R^2) tends towards 0, illustrating that there is a weak relationship between the dependent variable and the three independent variables. The Adjusted R Square illustrates that the points are quite close to the regression line, as the value of this indicator tends strongly towards 0.

The proposed regression model is valid, due to the Sig indicator. F = 0,000 < 0,01.

Table no. 4. Regression model coefficients and significance of variables

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	99,0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1,892	,177		10,690	,000	1,427	2,357
	Gradul de satisfactie utilizator	-,125	,031	-,388	-4,029	,000	-,206	-,044
	Informatiile din rapoarte sunt mult mai clare si de calitate	-,041	,042	-,101	-,989	,325	-,151	,068
	Eficienta proceselor de raportare financiara	-,024	,040	-,065	-,617	,539	-,128	,080

a. Dependent Variable: Raportarea corporativa

Source: Author's own creation, 2024

After analyzing the results obtained in **Table no. 4**, it can be seen that only the variable *"user satisfaction"* remains valid in the model, due to the significance threshold (Sig. < 0.01). The regression model is presented as follows:

$$y = 1,892 – 0,125 * GRD + e$$

Thus, it can be stated that accounting and auditing professionals are much more satisfied with the data processed for corporate reporting using ERP systems, and the efficiency and effectiveness of the ERP system in organizations can be more easily evaluated.

The functionalities offered in the modules of this system increase user satisfaction due to easy access to data and information. The prompt support offered by these systems in the preparation of corporate reports increase user satisfaction, as they can interpret the data much easier.

Conclusion

ERP systems offer a number of benefits, including transparency, flexibility and easy access to the data and information needed to carry out the work and make key decisions for an organization. Other benefits identified in the literature may refer to operational efficiency and prompt support for data processing, which aim to increase user satisfaction.

The increased degree of user satisfaction identified in the case study proposed in this article denotes that accounting professionals and auditors are much more satisfied with processing corporate data and reports using ERP systems, as a result of the numerous functions offered by these systems. The results indicated that the implementation of ERP systems in organizations can ensure a more organized and transparent work environment, providing faster access to key data needed to perform their tasks and minimizing human errors as much as possible. This gives accounting professionals more confidence in the information they process, thus contributing to increased job satisfaction.

Collaboration and communication of essential business data between departments and having a much more complete view of the organization's objectives promotes increased satisfaction among accounting professionals, giving them a sense of belonging to the team and feeling motivated and involved in the day-to-day activities of the organizations.

The flexibility offered by ERP systems that can be used on different devices provides a sense of autonomy and confidence to employees, benefiting from a more enjoyable work experience.

In conclusion, the article points out that ERP systems are an essential tool for corporate reporting, offering organizations not only reliability, but also flexibility in managing information, allowing them to respond quickly to business challenges. The research also focuses on the impact of ERP systems on accounting professionals by tracking their satisfaction. ERP systems are designed to provide an efficient and pleasant working environment, so the satisfaction of accounting professionals is closely linked to the performance of the organization, aiming at the well-being of employees and the long-term success of organizations.

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Economic Policy Uncertainty, Financial Reporting Quality, and Audit Fees:

Examining the Role of Industry Characteristics and International Accounting Standards

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Abstract

Using a large international sample, the author investigated the effects of economic policy uncertainty (EPU) on financial reporting quality (FRQ) and audit (AF). For this analysis, he used the Baker et al. (2016) EPU index and find a negative association between EPU and FRQ. Furthermore, that this impact was found to be more pronounced for firms operating in sensitive industries and less pronounced for firms that report under the International Financial Reporting Standards (IFRS). However, for firms operating in sensitive industries, reporting under IFRS does not weaken the impact of EPU on FRQ. The results also showed that the EPU is negatively associated with audit fees. Furthermore, the interaction term between IFRS and the EPU is positively associated with AF while the interaction term between the EPU and firms operating in sensitive industries is negative. The present study has important implications for policymakers, investors, auditors, and capital markets, as it provides strong evidence of the impact of the EPU on FRQ and AF. In addition, it enriches the literature by examining the influence of IFRS and industry characteristics on the interaction between EPU, FRQ, and AF

***Key words**: financial reporting; uncertainty; IFRS; sensitive industry; audit fees;*

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1. Introduction

Recent years have been characterized by high uncertainty. The COVID-19 pandemic, Ukraine's invasion by Russian Federation, inflation, and the energy crisis led to an increase in uncertainty. Uncertainty delays important investment decisions, increases financing and production costs, affects supply chains, and worsens the economic environment (Arouri et al., 2016). In terms of the capital market, it has been reported that uncertainty leads to high volatility of stock prices, decrease in returns, decline in firm valuation, and underpricing of IPO (Liu and Zhang, 2015; Arouri et al., 2016; Connolly et al., 2005; Dzielinski, 2012; Tsai, 2017; Boulton, 2022). In this context, Walters et al. (2023), Andrei et al. (2023), and Bird and Yeung (2012) suggest that investors are more responsive to firm-specific information, especially earnings information and earnings announcements. The rationale behind this is that investors can learn valuable information not only about the firm's performance, but also about the evolution of the economy. In this context, the FRQ is critical to the investor learning process and its effectiveness. The literature is scarce, with most of the research conducted in the United States (US) (Bermpei et al., 2021; Dhole et al., 2021; Jin et al., 2019; Nagar et al., 2018; Jiang et al., 2022). Therefore, there is limited understanding of how the EPU impacts FRQ across different countries, industries, and reporting framework, especially in the context of recent global uncertainties. Auditors represent one of the most important mechanisms that affects the FRQ. Audit fees are an indicative of their effort in auditing the financial statements of a firm. Few studies are available in the literature investigating the association between EPU and AF, most of them focusing on a single country (Yun & Shin, 2023; Yun & Hongmin, 2021; Jengfang et al., 2019; Min et al., 2018).

Our study expands the literature by examining an international sample of companies from 29 countries. In our analysis, we accounted for recent events that amplified uncertainty around the world. Therefore, our study provides a comprehensive analysis of FRQ and AF under high uncertainty. In 2005, the European Union (EU) adopted the IFRS to improve FRQ. Subsequently, many countries followed the EU and adopted the IFRS. The literature indicates that IFRS improves FRQ (Barth et al., 2008) and the comparability of financial information (Yip and Young, 2012). In our study, we explore the effects of the interaction between IFRS and EPU on FRQ and contribute to the literature by providing evidence of the effects of EPU on FRQ for IFRS firms versus non-IFRS firms. Bermpei et al. (2021) explore whether the FRQ is vulnerable to uncertainty in specific sensitive[1] industries in the US. We test this at an international level and provide strong evidence that FRQ is more vulnerable to EPU in certain industries. Additionally, we test whether the IFRS can reduce this vulnerability and we found that IFRS are not enough to counter the industry characteristics. Regarding AF, our study provides strong evidence that AF is negatively associated with EPU, which is in line with the existing evidence. Furthermore, we observe that the negative association between AF and EPU is more pronounced for firms operating in sensitive industries and less pronounced for firms that report under IFRS.

2. Literature review

Uncertainty is usually associated with periods of economic downturns or significant events that negatively affect the economy and capital markets. Regarding capital markets and investors, it is noted that uncertainty leads to a decrease in investors return (Arzu O., 2009). Therefore, investors are more interested in the financial performance and pay more attention to the financial statements (Walters et al., 2023 and Andrei et al., 2023). In this context, the researchers were interested in the quality of financial statements and how they reflect firm performance in times of high uncertainty. The literature on this subject has not yet matured, and most studies concern the United States.

Bermpei et al. (2021), Dhole et al. (2021), Jin et al. (2019), Dai and Ngo (2020), Nagar et al. (2018), Jain et al. (2021), Shin (2019), and Jiang et al. (2022) investigate FRQ in the context of high uncertainty for US firms, while El Ghoul et al. (2021), Yung and Root (2019), and Goncalves et al. (2022) explore the association between FRQ and uncertainty using cross-country samples.

Most of the research done concur to the idea of 'lean against the wind' introduced by Hirshleifer et al. (2009). The findings reveal that when uncertainty increases, management smooths the earnings to show better

[1] Sensitive industries are defined by Bermpei et al. (2021) as being more exposed to EPU due to their susceptibility to legislative changes, they are subject to greater attention from the public, and their impact in society is higher. These industries are oil industry, pharmaceutical industry, defense industry, tobacco industry, and transportation industry. A detailed list can be found in Table no. 4.

performance, creates a sense of stability, avoids small losses, and reduces the uncertainty associated with the firm (Bermpei 2021; Shin 2019; Peng et al. 2020; Chauhan and Jaiswall 2023; Yung and Root, 2019).

On the other hand, Jin et al. (2019) and Nagar et al. (2018) conclude that uncertainty increases the information asymmetry between management and investors. Therefore, it makes it difficult for investors to detect earnings management and provides the opportunity for the management to smooth the earnings.

Bermpei et al. (2021) Yung and Root (2019) investigate the interaction between uncertainty and other characteristics such as industry, institutional settings, and culture. Although certain industries are more sensitive to UPE, institutional settings and culture are not statistically significant.

Yun & Shin (2023), Yun & Hongmin (2021), Jengfang et al. (2019), Min et al. (2018) show that EPU is negatively associated with AF. This indicate that audit fees decrease in times of high EPU. Their studies are in the context of United States and South Korea.

Based on the above key aspects, we aim to expand the current literature by testing the following hypothesis:

H1. There is a negative association between FRQ and EPU.

H2. The negative association between FRQ and EPU is reduced by IFRS

H3. The negative association between FRQ and EPU is exacerbated by industry characteristics.

H4. There is a negative association between AF and EPU

3. Methodology

We measure uncertainty using the index developed by Baker et al. (2016). Economic policy uncertainty consists of three components. The first is newspaper coverage of economic uncertainty-related topics, the second is uncertainty regarding changes in tax legislation and monetary policies, and the third deals with macroeconomic forecast uncertainty. The index is a strong candidate for our study, as it captures all levels of uncertainty, market, political, and macroeconomic. We use the data available for 29 countries from the Economic Policy Uncertainty website. We used changes in the natural logarithm of the EPU index from year to year for each country.

Accrual-based models are widely used to measure FRQ. These models are designed to separate abnormal and reasonable business accruals. Dechow et al. (2010) indicated that reasonable business accruals reflect fundamental firm performance, whereas abnormal accruals reveal management's discretionary behavior in preparing financial information.

Accrual-based models regress total accruals on firm attributes that predict reasonable business accruals. Regression residuals are abnormal accruals that cannot be explained by firm attributes. We used three models in our analysis, Modified Jones Model (FRQ1) developed by Dechow et al. (1995), Modified Jones Model with Performance (FRQ2) proposed by Kothari et al. (2005) and Dechow and Dichev Model advanced by Dechow and Dichev (2002). FRQ is the absolute residual obtained from the following regression:

$$ACC_{it} = \alpha_0 + \alpha_1 \frac{1}{TA_{it-1}} + \alpha_2 \left(\frac{\Delta REV_{it}}{TA_{it}} + \frac{\Delta AR_{it}}{TA_{it}}\right) + \alpha_3 \left(\frac{\Delta PPE_{it}}{TA_{it}}\right) + \varepsilon_{it} \quad \text{(FRQ1)}$$

$$ACC_{it} = \alpha_0 + \alpha_1 \frac{1}{TA_{it-1}} + \alpha_2 \left(\frac{\Delta REV_{it}}{TA_{it}} + \frac{\Delta AR_{it}}{TA_{it}}\right) + \alpha_3 \left(\frac{\Delta PPE_{it}}{TA_{it}}\right) + \alpha_4 ROA_{it} \quad \text{(FRQ2)}$$

$$ACC_{it} = \alpha_0 + \alpha_1 CFO_{it-1} + \alpha_2 CFO_{it} + \alpha_2 CFO_{it+1} + \alpha_2 \Delta REV_{it} + \alpha_3 PPE_{it} + \varepsilon_{it} \quad \text{(FRQ2)}$$

The models were estimated cross-sectionally at the industry-year level. According to the literature, we require at least 10 observations for each industry year. The variables used in these models are presented in **Table no. 1**.

Table no. 1. Description of the variables in the FRQ models

Variable	Description
ACC	Change in non-cash current assets – change in current liabilities, change in the current portion of long-term debt – depreciation and amortization expense scaled by lagged total assets for firm *i* in year *t*
TAit	Total assets of firm *i* in year *t*
Δ REVit	Change in sales of firm *i* in year *t*
Δ Arit	Change in trade receivables of firm *i* in year *t*
Δ PPEit	Change in the gross property, plant, and equipment of firm *i* in year *t*
CFOit	Cash flow from the operations of firm *i* in year *t* scaled by the lagged total assets of firm *i* in year *t*
ROA	Net income/total assets of firm *i* in year *t*

Source: Author's own projections

We extract companies' financial data from Refinitiv, selecting only companies listed on stock exchanges in countries with an available EPU index. We initially retrieved data for 48,973 firms. However, to be able to determine the FRQ, we only retained firms that reported total assets, total liabilities, total equity, market capitalization, cash flow, sales and net income for at least three consecutive years in the sample. The final sample consists of 27,852 firms for 2006–2022 (285,513 firm-year observations). For the audit fee analysis, we were able to obtain the audit fees only for 165,603 firm-year observations.

Table no. 2 shows the sample distribution per country and reporting standards, **Table no. 3** shows the sample distribution per industry, and **Table no. 4** shows the number of observations for sensitive industries.

Table no. 2. Sample distribution by country and by accounting standards

Country of Exchange	No. of observations	IFRS	NON-IFRS
Japan	47,114	1,533	45,581
United States	43,018	967	42,051
China	41,529	3	41,526
India	29,704	157	29,547
South Korea	25,615	21,413	4,202
Hong Kong	20,347	5,610	14,737
United Kingdom	10,106	9,919	187
Canada	10,094	8,011	2,083
Australia	9,597	9,429	168
Singapore	6,589	3,065	3,524
France	6,210	5,295	915
Germany	5,845	5,073	772
Sweden	5,513	4,143	1,370
Pakistan	3,776	725	3,051
Brazil	3,061	2,814	247
Italy	2,659	2,443	216
Greece	1,863	1,863	-
Chile	1,775	1,554	221
Russia	1,740	1,313	427
Spain	1,517	1,362	155
Mexico	1,395	1,098	297
New Zealand	1,294	988	306

Country of Exchange	No. of observations	IFRS	NON-IFRS
Denmark	1,236	1,142	94
Belgium	1,096	1,080	16
The Netherlands	876	867	9
Nigeria	771	538	233
Croatia	704	704	-
Colombia	301	96	205
Ireland	168	168	-
Total	**285,513**	**93,373**	**192,140**

Source: Author's own projections

Table no. 3. Distribution of the sample by industries

Industry	No. of observations	Industry	No. of observations	Industry	No. of observations
Machinery	15,877	Entertainment	4,621	Diversified Telecommunication Services	1,706
Chemicals	14,763	Professional Services	4,148	Air Freight & Logistics	1,634
Metals & Mining	13,048	Health Care Providers & Services	4,033	Life Sciences Tools & Services	1,530
Real Estate Management & Development	12,351	Communications Equipment	4,026	Industrial Conglomerates	1,495
Electronic Equipment, Instruments & Components	12,178	Consumer Staples Distribution & Retail	3,735	Marine Transportation	1,434
Food Products	10,759	Building Products	3,500	Automobiles	1,347
Textiles, Apparel & Luxury Goods	10,172	Construction Materials	3,235	Gas Utilities	1,333
Software	9,537	Containers & Packaging	2,826	Diversified REITs	1,138
Construction & Engineering	8,849	Diversified Consumer Services	2,710	Health Care Technology	1,113
Hotels, Restaurants & Leisure	8,477	Beverages	2,630	Retail REITs	1,069
Pharmaceuticals	8,426	Electric Utilities	2,558	Office REITs	925
Oil, Gas & Consumable Fuels	8,335	Independent Power and Renewable Electricity Producers	2,539	Water Utilities	919
Automobile Components	7,712	Energy Equipment & Services	2,495	Passenger Airlines	806
Electrical Equipment	7,114	Personal Care Products	2,438	Household Products	710
IT Services	6,539	Paper & Forest Products	2,255	Multi-Utilities	651
Commercial Services & Supplies	6,363	Aerospace & Defense	2,229	Wireless Telecommunication Services	621

Industry	No. of observations	Industry	No. of observations	Industry	No. of observations
Specialty Retail	6,320	Transportation Infrastructure	2,229	Residential REITs	567
Semiconductors & Semiconductor Equipment	5,951	Ground Transportation	2,137	Industrial REITs	465
Media	5,877	Technology Hardware, Storage & Peripherals	2,076	Specialized REITs	407
Trading Companies & Distributors	5,726	Broadline Retail	2,056	Hotel & Resort REITs	370
Household Durables	5,620	Distributors	1,962	Health Care REITs	339
Biotechnology	5,369	Interactive Media & Services	1,825	Tobacco	336
Health Care Equipment & Supplies	5,238	Leisure Products	1,734		

Source: Author's own projections

Table no. 4. Sensitive industries as defined by Bermpei et al. (2021)

Industry	No. of observations
Pharmaceuticals	8,426
Oil, Gas & Consumable Fuels	5,238
Health Care Equipment & Supplies	4,033
Health Care Providers & Services	1,113
Aerospace & Defense	2,229
Ground Transportation	8,335
Diversified Telecommunication Services	1,434
Marine Transportation	621
Health Care Technology	1,706
Wireless Telecommunication Services	336
Health Care REITs	339
Tobacco	2,137
Total	**35,947**

Source: Author's own projections after Bermpei et al. (2021

Of the total sample of 285,513 firm-year observations, 33% prepare financial statements according to IFRS and 67% according to other accounting standards. The five main industries in our sample are machinery (5.6%), chemicals (5.2%), metals & mining (4.6%), real estate management & development (4.3%), and electronic equipment, instruments & components (4.3%). From the total sample, 35,947 firm-year observations are from sensitive industries.

Our empirical models are presented below, and the summary of the variables is presented in **Table no. 5**.

$$FRQ=\alpha_0+\alpha_1 EPU+\alpha_2 AS+\alpha_3 AUD+\alpha_4 RES+\alpha_5 LEV+\alpha_6 SIZE+\alpha_7 ROA+\alpha_8 SD\_REV+\alpha_9 SD\_CFO+\varepsilon \quad \text{(Model I)}$$

$$AF=\alpha_0+\alpha_1 EPU+\alpha_2 SIZE+\alpha_3 LEV+\alpha_4 DCE+\alpha_5 AUD+\alpha_6 AS+\varepsilon \quad \text{(Model II)}$$

Table no. 5. Summary of variables

Variable	Description	Type of variable	Source of data
FRQ	Financial reporting quality	Dependent variable	Refinitiv
EPU	Change in the natural logarithm of the EPU index	Focus variable	Baker et al. (2016)
AS	Dummy variable which equals 1 if the firm reports according to IFRS or 0 otherwise.	Focus variable	World Bank
SENSITIVE	Dummy variable which equals 1 if the firm operates in one of the industries from Table 4 or 0 otherwise.	Focus variable	Bermpei et al. (2021)
AUD	Dummy variable which equals 1 if the financial statements were audited by a BIG4 or 0 otherwise	Control variable	Refinitiv
RES	Dummy variable that equals 1 if the financial statements contain a restatement or 0 otherwise	Control variable	Refinitiv
SIZE	Natural logarithm of the market capitalization of the company	Control variable	Refinitiv
ROA	Return on assets determined as net income scaled by total assets	Control variable	Refinitiv
LEV	Leverage determined as total debt scaled by total assets		
SD_REV	Standard deviation of revenue scaled by total assets	Control variable	Refinitiv
SD_CFO	Standard deviation of net cash flow from operations/total assets	Control variable	Refinitiv
DCE	Dummy variable which equals 1 if the firm has negative equity or 0 otherwise	Control variable	Refinitiv

Our analysis includes several firm-level control variables that have been shown to affect FRQ in previous research. These include auditor type (Che et al., 2020), financial restatements (Ettredge et al., 2010), company size and performance (Dechow et al., 2010), and leverage (Anagnostopoulu and Tsekrekos, 2017). For the second model, we use the most important determinants of audit fees grounded in the literature, size, and risk of the entity (Gonthier-Besacier & Schatt, 2007; Anderson & Zeghal 1994) The Hausman test is used to determine whether fixed or random effects should be used. The fixed-effects approach is appropriate for our data. To control for potential unobserved effects, we run our models using industry and country fixed effects. We winsorize all continuous variables at the 1st and 99th percentiles to avoid potential outlier effects.

4. Results and discussion

Table no. 6 presents the results for Model I. We present the regression results for the three FRQ models. In each case, we run an ordinary least squares (OLS) regression with country and industry fixed effects.

Table no. 6. Regression results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	FRQ1	FRQ1	FRQ1	FRQ1	FRQ2	FRQ2	FRQ2	FRQ2	FRQ3	FRQ3	FRQ3	FRQ3
EPU	0.00612***	0.0101***	0.00328***	0.0101***	0.00309***	0.00518***	0.00196***	0.00518***	0.00329***	0.00684***	0.00112*	0.00684***
	(12.01)	(15.77)	(6.78)	(15.77)	(11.28)	(15.01)	(6.87)	(15.01)	(7.70)	(12.84)	(2.57)	(12.84)
AS	-0.00523***	-0.00511***	-0.00522***	-0.00511***	-0.00170***	-0.00163***	-0.00170***	-0.00163***	-0.00409***	-0.00399***	-0.00409***	-0.00398***
	(-6.27)	(-6.13)	(-6.27)	(-6.12)	(-3.45)	(-3.32)	(-3.45)	(-3.32)	(-6.07)	(-5.91)	(-6.06)	(-5.90)
EPU#AS		-0.0111***		-0.0120***		-0.00586***		-0.00645***		-0.00995***		-0.0113***
		(-10.73)		(-11.46)		(-10.45)		(-11.02)		(-11.38)		(-12.35)
EPU#SENSITIVE			0.0221***				0.00882***				0.0169***	
			(10.03)				(9.60)				(11.21)	
EPU#AS#SENSITIVE				0.00654*				0.00425**				0.00949***
				(2.21)				(3.20)				(4.54)
AUD	-0.00618***	-0.00623***	-0.00617***	-0.00623***	-0.00322***	-0.00325***	-0.00322***	-0.00325***	-0.00476***	-0.00481***	-0.00476***	-0.00481***
	(-12.84)	(-12.96)	(-12.84)	(-12.96)	(-10.10)	(-10.19)	(-10.09)	(-10.19)	(-11.42)	(-11.54)	(-11.41)	(-11.54)
RES	0.00460***	0.00450***	0.00455***	0.00450***	0.00344***	0.00339***	0.00342***	0.00338***	0.00521***	0.00513***	0.00518***	0.00512***
	(7.68)	(7.52)	(7.62)	(7.52)	(10.03)	(9.88)	(9.98)	(9.88)	(10.16)	(10.00)	(10.10)	(10.00)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	FRQ1	FRQ1	FRQ1	FRQ1	FRQ2	FRQ2	FRQ2	FRQ2	FRQ3	FRQ3	FRQ3	FRQ3
LEV	0.0252***	0.0252***	0.0253***	0.0252***	0.0116***	0.0116***	0.0117***	0.0116***	0.00608***	0.00606***	0.00612***	0.00606***
	(18.54)	(18.52)	(18.58)	(18.52)	(14.81)	(14.79)	(14.84)	(14.79)	(6.24)	(6.22)	(6.29)	(6.22)
SIZE	-0.00465***	-0.00464***	-0.00465***	-0.00464***	-0.00294***	-0.00293***	-0.00294***	-0.00293***	-0.00233***	-0.00232***	-0.00233***	-0.00232***
	(-33.53)	(-33.47)	(-33.52)	(-33.47)	(-40.04)	(-39.97)	(-40.02)	(-39.97)	(-23.18)	(-23.10)	(-23.17)	(-23.10)
ROA	-0.0320***	-0.0320***	-0.0319***	-0.0320***	-0.0231***	-0.0231***	-0.0231***	-0.0231***	-0.00908***	-0.00910***	-0.00906***	-0.00909***
	(-20.94)	(-20.95)	(-20.93)	(-20.95)	(-25.32)	(-25.33)	(-25.31)	(-25.33)	(-7.59)	(-7.61)	(-7.58)	(-7.61)
SD_REV	0.0154***	0.0154***	0.0153***	0.0154***	0.00607***	0.00608***	0.00603***	0.00607***	0.00767***	0.00769***	0.00760***	0.00768***
	(21.03)	(21.06)	(20.92)	(21.05)	(16.98)	(17.02)	(16.90)	(17.01)	(13.81)	(13.85)	(13.71)	(13.84)
SD_CFO	-0.00262*	-0.00264*	-0.00254*	-0.00263*	-0.000815	-0.000827	-0.000781	-0.000821	0.0202***	0.0201***	0.0202***	0.0202***
	(-2.21)	(-2.23)	(-2.14)	(-2.23)	(-1.39)	(-1.41)	(-1.34)	(-1.40)	(20.23)	(20.22)	(20.30)	(20.23)
Observations	285,513	285,513	285,513	285,513	285,513	285,513	285,513	285,513	285,513	285,513	285,513	285,513
R-squared	0.1290	0.1294	0.1297	0.1294	0.1220	0.1223	0.1224	0.1224	0.0666	0.0671	0.0673	0.0671
Country and Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*This table presents the regression results for Model I. In each case, we employed an OLS regression with fixed effects. EPU#AS, EPU#SENSITIVE, and EPU#AS#SENSITIVE are the interaction terms for our variable of interest. In the interaction terms, EPU was centered by subtracting the mean value. In each model, the standard errors are clustered at the firm level. T-values are in parentheses. The significance levels at 10%, 5% and 1% are represented by *, **, and ***, respectively.*

We begin our analysis with Models 1, 5, and 9. The positive and statistically significant coefficient suggests that EPU is negatively associated with FRQ. The results are consistent across all models and raise important concerns regarding the reliability and accuracy of financial statements when EPU increases. The results show that when the EPU increases by one point, the FRQ decreases by 0.00612 in Model 1, by 0.00309 in Model 5, and by 0.00329 in Model 9.

Next, we investigate the effect of the interaction between IFRS and EPU on FRQ in Models 2, 6, and 10. The coefficient is significant at the 1% level for all models. The negative coefficient of the interaction term indicates that the association between FRQ and EPU is less pronounced for IFRS firms than on non-IFRS firms. This is in line with the objectives of the IFRS Foundation Constitution, which states four objectives among which is to develop a set of high qualitative accounting standards. Furthermore, this finding is consistent with the literature (Barth et al., 2008; Yip and Young, 2012). The mechanism through which the IFRS reduce negative association between FRQ and EPU could be linked to:

a) a single set of accounting standards ensure comparability of financial statements and facilitate the investors understanding and analysis of financial statements which can reduce the earnings management;

b) IFRS are principles-based accounting standards which allows firms to adapt and update their accounting policies and practices to their current circumstances; therefore, in times of uncertainty, they present better in financial statements the actual performance;

c) IFRS are investors-orientated accounting standards, which help investors to better understand the financial statements and firm performance, and together with the fact that they ensure comparability, may help investors to detect earnings management more frequently compared to other accounting standards.

To examine whether sensitive industries (as defined in Section 3) are more vulnerable to EPU, we introduce an interaction term between SENSITIVE and EPU. The principal effect (SENSITIVE) is not included in the model because it is a time-invariant variable that is perfectly collinear with industry fixed effects. The positive coefficient indicates that the FRQ of firms operating in sensitive industries are more vulnerable to EPU. The coefficient is statistically significant at the 1% level. This finding is similar to what Bermpei et al. (2021) noted for US. Previous research suggests that the reason for the negative association between FRQ and EPU is to show better performance and, therefore, to create a sense of stability when EPU is high. The firms that operate in sensitive industries being subject to more intense scrutinity face a greater pressure compared with other

firms, as a consequence management use earnings management more frequently.

We demonstrate that the FRQ of IFRS firms is less affected by EPU. We analyze whether this result persists for IFRS firms operating in sensitive industries, in Models 4, 8, and 12, by introducing an interaction term between EPU, IFRS, and SENSITIVE. The positive coefficient reveals that IFRS are not sufficiently strong to mitigate the effect of EPU on FRQ in sensitive industries. The coefficient is statistically significant at levels of 10%, 5%, and 1% in Model 4, Model 8, and Model 12, respectively. A possible argument for this finding is that IFRS allows certain flexibility in accounting practices, which combined with the pressure faced by the management of firms operating in sensitive industries override the benefits of reporting in accordance with IFRS.

The results of the control variables are consistent with those of previous studies (Che et al., 2020; Ettredge et al., 2010; Dechow et al., 2010; Anagnostopoulu and Tsekrekos, 2017). SIZE, AUD, and ROA are positively associated with FRQ while RES and LEV are negatively associated with FRQ.

Table no. 7 show the results for Model II, there are three regressions.

Table no. 7. Regression results for Model II

	(1)	(2)	(3)
	AF	**AF**	**AF**
EPU	-0.0207***	-0.0249***	-0.0194***
	(-9.49)	(-9.24)	(-8.78)
SIZE	0.0363***	0.0362***	0.0362***
	(32.17)	(32.11)	(32.17)
LEV	0.0502***	0.0501***	0.0502***
	(6.52)	(6.52)	(6.53)
DCE	-0.0430***	-0.0430***	-0.0430***
	(-5.54)	(-5.55)	(-5.55)
AUD	0.0159***	0.0160***	0.0159***
	(4.86)	(4.88)	(4.87)
AS	0.0535***	0.0532***	0.0535***
	(10.31)	(10.25)	(10.31)
EPU#AS		0.0106*	
		(2.32)	
EPU#SENSITIVE			-0.0366**
			(-2.89)
Observation	165,603	165,603	165,603
R-squared	0.1169	0.1177	0.1177
Country and Firm Fixed Effects	Yes	Yes	Yes

*This table presents the regression results for Model II. In each case, we employed an OLS regression with fixed effects. EPU#AS, EPU#SENSITIVE, and are the interaction terms for our variable of interest. In the interaction terms, EPU was centered by subtracting the mean value. In each model, the standard errors are clustered at the firm level. The T values are in parentheses. The significance levels at 10%, 5% and 1% are represented by *, **, and ***, respectively.*

We can observe that the EPU is negatively associated with AF. The coefficient is -0.0207 and is statistically significant at the 1% level. This means that when uncertainty increases by one unit, the audit fees decrease by 0.0207. The result is consistent with the previous studies mentioned in Section 2. Furthermore, we can observe that the interaction term between EPU and IFRS is positive and statistically significant at the 10% level. This indicates that the negative association between EPU and AF is less pronounced for firms that report under IFRS. Regarding the interaction term between EPU and SENSITIVE, we can observe a negative coefficient, which is statistically significant at the 5% level. Therefore, the negative association between AF and EPU is more

pronounced for firms operating in sensitive industries. In this case, we use firm and country fixed effects since audit fees mostly depend on the characteristics of the firm.

EPU is high during certain events that increase financial pressure on firms which negotiate lower audit fees in an attempt to cut their operating costs. Lower audit fees may result in lower audit effort, which is not desirable in the context of high EPU, which is negatively associated with FRQ. However, a recent study argues that even if the auditors decrease their fees, they know that EPU is negatively associated with FRQ; therefore, they involve more senior and experienced employees to perform the audit of listed firms (Yongsuk & Shin, 2023). Consistently, Yongsuk & Hongmin (2021) demonstrated that audit hours increase during high EPU. Therefore, despite the fact that AF decrease when EPU is high, auditors concentrate their effort by increasing the seniority level and the number of hours to combat the decrease in FRQ.

5. Conclusions

We examined the impact of EPU on FRQ using a large international sample of 285,513 firm-year observations from 29 countries. Our results revealed that the EPU negatively impacts FRQ and that this effect is more pronounced for firms operating in sensitive industries. Furthermore, we demonstrate that IFRS plays a significant role in combating the effects of EPU on FRQ. However, this effect is not observed for all firms. For firms operating in sensitive industries, which are more vulnerable to EPU, industry characteristics prevail over the positive impact of IFRS on FRQ.

We also show that AF is negatively associated with EPU, which means that auditors reduce fees when EPU is high. The results are consistent with those of the literature. However, we argue that this does not impact the audit effort. Auditors acknowledge that EPU is negatively associated with FRQ and allocate more senior resources and more ours to the audit of listed entities. Our results were analyzed including fixed effects of country, industry and firm in the regression models. Therefore, our results are robust since we control for country, industry, and firm characteristics.

Our study has several limitations. The FRQ has many dimensions, and there are many empirical models through which this can be measured. In our study, we mostly focused on accrual-based models, and we are not able to generalize the findings to other FRQ dimensions. Potential research could try to identify and use other models to measure the FRQ. We are able to determine only the impact of EPU on AF. Our results are consistent with the literature. However, we refer to previous literature to argue the connection between lower FRQ and lower AF during high EPU. Future research could obtain a more in-depth connection using other measures for audit effort more directly connected with audit work.

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