

The Impact of Artificial Intelligence on the Accounting and Auditing Professions
A qualitative study of the case of 16 accounting and auditing offices in Algeria

SEFFAHLLOU Rachid¹: Lecturer « A » Djilali Bounama University of Khemis Miliana, Algeria

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Abstract

This study aimed to highlight the impact of using economic intelligence tools in accounting and auditing. To achieve the goal, a sample of accountants and auditors was interviewed in their offices and it was concluded that the opinions are very positive and tend to exploit the opportunity, as the profession actually knows many amendments, but it is not on the way to disappearing, and it will be redefined. The entire role of the accountant, as repetitive tasks are performed by machines, which will free up more time for the accountant who will become an advisor to his clients, devoting himself to tasks with high added value. A certain knowledge of artificial intelligence is also considered more than necessary for the good practice of the accounting and auditing profession, and the training in this profession will be rethought and adapted.

Key words: Artificial Intelligence; automating; Accounting; Audit; financial Statements

Jel Codes Classification : Q55, O32, M41, M42.

1 - Author Corresponding: SEFFAHLLOU Rachid Laboratory of Emerging Enterprises and Economic Diversification
, Email:r.seffahlou@univ-dbkm.dz

أثر الذكاء الاصطناعي على مهنتي المحاسبة والتدقيق (دراسة نوعية لحالة 16 مكتب محاسبة وتدقيق في الجزائر)

– سفاحلو رشيد¹: أستاذ محاضر "أ"، جامعة الجيلالي بونعامة خميس مليانة، الجزائر

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ملخص

هدفت هذه الدراسة إلى إبراز أثر استخدام أدوات الذكاء الاقتصادي في المحاسبة والتدقيق وتحقيق الهدف تمت مقابلة عينة من المحاسبين والمدققين في مكاتبهم وتوصلت الدراسة إلى أن الآراء إيجابية للغاية وتميل إلى استغلال الفرصة حيث تعرف المهنة فعليًا العديد من التعديلات، لكنها ليست في طريق الاختفاء، وسيتم إعادة تحديد دور المحاسب بالكامل، إذ يتم تنفيذ المهام المتكررة بواسطة الآلات، مما سيوفر المزيد من الوقت للمحاسب الذي سيصبح مستشارًا لعملائه، ويكرس نفسه للمهام ذات القيمة المضافة العالية. كما تعتبر معرفة معينة بالذكاء الاصطناعي أكثر من ضرورة للممارسة الجيدة لمهنة المحاسبة والمراجعة كما سيتم إعادة التفكير في التكوين في هذه المهنة وتكييفه.

الكلمات المفتاحية: الذكاء الاصطناعي؛ الأتمتة؛ محاسبة؛ تدقيق؛ القوائم المالية.

التصنيف: JEL: Q55، O32، M41، M42.

¹-المرسل، سفاحلو رشيد، مخبر إستراتيجيات المؤسسات الناشئة والتنويع الاقتصادي، r.seffahlou@univ-dbkm.dz

Introduction:

We are currently experiencing a new industrial revolution. It is important to seize the opportunities offered by new technologies, such as artificial intelligence (AI), robotization, cloud computing and many others because they will have a considerable impact on all sectors of production and will touch the whole world, we even talk about globalization 4.0, as he confirms (Mateu & Pluchart, 2019). Innovation and mastery of new technologies will therefore be a key success factor for businesses. Indeed, if they succeed in their digital transition, they will then gain a considerable lead over players, less inclined to use these technological opportunities.

The rise of artificial intelligence in accounting and auditing firms is undeniable. We are witnessing both a breakthrough in technologies, with the arrival of increasingly mature and efficient solutions, but also an evolution in uses. Much effort has been made in recent years to develop complex systems based on artificial intelligence (AI). The aim was to increase the performance of accountants and financial auditors and, therefore, bring more value to organizations and improve the quality of business and investment decisions, which is in line with the main mission of the profession accounting and auditing. Indeed, according to authors like (LIN & Hazelbaker, 2019), it is thanks to the development of technologies, accounting systems and operations have moved from paper and ledgers to digital formats with the use of computers and expert systems. More recently, with advances in artificial intelligence, the accounting and auditing professions are experiencing their greatest transformation.

In the same perspective, (Kaya & Birol, 2019) claim that, according to estimates, robotics and automation have eliminated around 40% of the work that accounting professionals performed. Indeed, intelligent robots are currently used to carry out inventories, manage bank audit confirmations, read contracts or other documents to generate relevant information, plan the audit, evaluate evidence, analyze specific accounts or even produce audit reports (LIN & Hazelbaker, 2019).

Digital processing or in other words automation of accounting data is only the first step in the digital transition. Financial executives or business leaders have been looking for how to handle accounting tasks, whether technical or manual, in a more precise, more thoughtful manner and at lower cost. Artificial intelligence is being developed to perfect two new fundamental factors: learning and problem solving. It is from this perspective that the study aims to examine the effect of artificial intelligence on the accounting and auditing professions by articulating the research problem around the following main question:

What is the impact of artificial intelligence on the accounting and auditing professions in Algeria?

To answer the main question we must answer the following sub-questions:

- What are the theoretical concepts and technologies of Artificial Intelligence?
- How are Artificial Intelligence tools used in accounting and auditing?
- Is artificial intelligence an opportunity or a threat for the accounting and auditing professions?

Research hypotheses:

Three research hypotheses were formulated in this work, namely:

- **Hypothesis No. 1:** the introduction of artificial intelligence will lead to the creation of positions with a new skills profile for the accountants and auditors of tomorrow
- **Hypothesis No. 2:** Artificial Intelligence would lead to the elimination of accounting and auditing professions;
- **Hypothesis No. 3:** Artificial Intelligence will have a positive effect on the future of accounting and auditing professions.

Research importance:

In 2013, two researchers from the Oxford Martin School published a study which predicted that 47% of total American jobs have a high risk of being fully automated, over an undefined number of years and occupations related to Accounting and auditing are directly concerned. It is therefore very interesting to do research to find out if these professions will disappear or be transformed with the rapid spread of artificial intelligence.

Research objectives

This research attempts to clarify and analyze to what extent artificial intelligence can contribute to improving or deteriorating the accounting and auditing professions, based on an analysis of the responses received from 16 accounting and auditing offices in various states of Algeria.

Previous studies

There exist various literatures in many websites and electronic journals as well, so this study will try to elaborate the subjects in both theoretical and applied sides.

Study of (Kroon, Do Céio Alves, & Martins, 2021): The Impacts of Emerging Technologies on Accountants' Role and Skills: Connecting to Open Innovation—A Systematic Literature Review: This paper reviews the recent accounting literature focusing on emerging technologies' impacts on accountants' role and skills. Specifically, it determines what emerging technologies are most studied concerning their impacts on accountants' role and skills, which research strategies are used in the studies that focus on this theme, and the impacts of the identified emerging technologies on accountants' skills. : The main analytical results of the study identify the skills that today's accountants must have and what role is assigned to them. This study provides an integrated understanding of the implications of recent technological developments on the accountant's role and skills that have been hitherto discussed in the existing literature in a fragmented way.

Study of (Hasan, 2022): Artificial Intelligence (AI) in Accounting & Auditing: A Literature Review This is a revision work in the field of application of Artificial Intelligence (AI) in accounting and auditing. A semi-systematic or narrative review approach was employed to analyze relevant published books and journals. The study concluded that The development and implementation of AI in the accounting and auditing profession can be defined as a double-edged sword. What happens is subject to change over time, but it is certain that the accounting and auditing profession as we know it and have known it will change significantly in the coming days.

Study of (Amerahom, 2022) The impact of using artificial intelligence applications on the future of the accounting and auditing profession, A study to investigate how accountants and auditors perceive their careers in the context of the advancement of artificial intelligence technologies. The findings of the survey indicated that professionals in the accounting and auditing industries are aware of the significance of the impact that approaches using artificial intelligence have had on the methodologies used in these fields. Therefore, accountants and auditors cannot compete without understanding these approaches. This necessitates the integration of these techniques into the accounting and auditing professions as well as boosting the level of awareness among professionals about how to improve the utilization of these technologies.

Study of (HUTZLI, 2021): Comment l'intelligence artificielle va-t-elle impacter le métier de comptable? The objective of the study was to know how professions that present

robotizable tasks will be impacted and how companies will manage this massive automation. The study concluded that the accounting profession will evolve and we must prepare and anticipate the changes, because the digital revolution will be beneficial for those who anticipate and accept the use of new technologies, and it will undoubtedly have an impact very negative on those who are resistant to change.

Study of (Aljaaidi, Alwadani, & Adow, 2023) : The impact of artificial intelligence applications on the performance of accountants and audit firms in Saudi Arabia. The purpose of this study is to investigate the impact of using artificial intelligence applications on the performance of accountants and audit firms. The final sample for this study comprises 38 audit firms. This study uses a survey-based methodology in the context of Saudi Arabia. The results of the multiple regression revealed that the audit firms using artificial intelligence applications perceive them as useful instruments that increase the performance of accountants and audit firms. They can reduce the cost, effort, and time of the audit process, achieve a competitive advantage for the audit firms, help auditors better determine materiality, achieve a competitive advantage, improve the performance of the audit team, carry out the continuous audit process better than the traditional audit, enable auditors to select audit samples with high efficiency, improve the quality of control procedures on electronic transactions and files used by the client, contribute to the management of operations and tasks with more sophisticated and intelligent mechanisms, increase the efficiency and effectiveness of the audit process and the efficiency and effectiveness of planning and supervising the audit process, reduce uncertainty and audit risk.

Study of (Rodrigues, Pereira, da Silva, & Ribeiro, 2023) The impact of artificial intelligence on audit profession: There is an expectation that the introduction of artificial intelligence (AI) will bring about profound changes in the current paradigm of the audit profession, ensuring better reliability and security in the analysis of financial statements. This paper reports the results of a questionnaire survey to ascertain the perceptions of certified auditors, from two Portuguese districts, regarding the impact of artificial intelligence on the audit profession. Findings reveal that the respondents believe that the profession's future depends on the implementation of AI, namely in the efficiency and effectiveness of audit procedures, sampling techniques, cost-benefit relationship and recognizing material distortions.

I- Theoretical concepts and technologies of Artificial Intelligence

Before analyzing how artificial intelligence is used in the accounting profession, we try to define it to better understand what it is used for then we give an overview of artificial intelligence technologies to understand how it works.

I-1- Definition of the concept of artificial intelligence

John McCarthy is considered the founding father of artificial intelligence; he first used the term in 1955. (HUTZLI, 2021). He is the co-founder with John McCarthy of the Artificial Intelligence Group at the Massachusetts Institute of Technology (MIT) which defined artificial intelligence as follows: *"The construction of computer programs which undertake tasks which are, for the moment, accomplished more satisfactorily by human beings, because they require high-level mental processes such as: perceptual learning, memory organization and critical reasoning."*

Along the same lines, the father of artificial intelligence, John McCarthy, adds *"AI is The science and engineering of making intelligent machines, particularly intelligent computer programs."* (John McCarthy, 1998).

According to the (Oxford Dictionary): artificial intelligence is defined as *"The theory and development of computer systems capable of performing tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making and translation between languages."*

We can therefore say that artificial intelligence is the imitation of the functioning of human intelligence by machines so that they are capable of carrying out tasks that require human intelligence, such as communication, critical reasoning, independent learning, understanding, decision-making and much more.

I-2- Weak and Strong Artificial Intelligence

Artificial intelligence has evolved enormously over the past 60 years and is increasingly close to human intelligence. On the other hand, this technology does not yet have quite the same autonomy as a human being. It is important to differentiate between 2 types of artificial intelligence (LIN & Hazelbaker, 2019):

Weak artificial intelligence, which is the one currently used, and which is used to solve problems with the intervention of a human, in particular to enter data and tell the AI what is expected of it. (Mateu & Pluchart, 2019), It represents 99% of all AI that currently exists.

strong artificial intelligence which should be capable of reacting autonomously and intelligently thanks to a consciousness close to human beings. It should even be able to experience feelings, but this form of AI does not yet exist and human intervention therefore remains necessary in order to provide a social and empathetic aspect. Strong artificial intelligence which is capable of doing other things that were not initially planned and operates at the same level as humans.

I-3- Some Artificial Intelligence technologies

There are several artificial intelligence techniques, including:

I-3-1- Optical character recognition (OCR)

Optical character recognition is an electronic conversion of typed, handwritten or printed text images. Character recognition technology works like an intelligent scanner, it can recognize texts inside images like scanned documents. With OCR, a large number of paper documents can be scanned into machine-readable text, regardless of the language and format in which they are written. This technique not only facilitates storage, but also makes available data that previously was difficult to access.

I-3-2- The expert system (ES)

An expert system is a computer program that simulates the decision-making process of human experts. It exploits a knowledge base specific to a domain, and uses an inference engine to simulate reasoning based on known facts and rules implemented initially. He can make deductions or conclusions, and explain how the results were obtained. It is designed to solve complex problems by reasoning through a set of existing experiences and knowledge, typically represented as if-then rules of necessary conditions. (LIN & Hazelbaker, 2019)

I-3-3- Robotic process automation (RPA)

Robotic process automation is described as a system that captures, manipulates and interprets transactional data from a myriad of IT applications at the same time. An employee with limited programming knowledge can easily create a process for a robot to automate selected tasks (Tietz, 2020).

I-3-4- Machine Learning or automatic learning

Machine learning involves technology recognizing and applying patterns based on existing data or examples, deriving its own algorithms and refining them over time. The principle of this type of AI application is that when we give a machine access to data, it can continue to improve its performance without human intervention. (Stancheva-Todorova, 2018)

I-3-5- Deep Learning

“Deep learning” is a type of machine learning in which a model learns to perform classification tasks directly from images, text, or audio. Deep learning is generally implemented using the architecture of a neural network. The term "deep" refers to the number of layers in the network. The more layers there are, the deeper the network. Traditional neural networks contain only 2 or 3 layers, while "deep" networks can have hundreds. (IAROCCE, 2021)

II-Use of artificial intelligence technologies in accounting and auditing

Before seeing how artificial intelligence tools are used in accounting and auditing, it is useful to have a general overview of the tasks performed there.

II-1- Tasks performed in accounting and auditing

The accounting and auditing professions encompass all accounting and auditing activities carried out by accountants, auditors and chartered accountants.

II-1-1-Tasks performed in accounting

Accounting is a system of organizing information that involves systematically collecting, recording, classifying, analyzing and presenting the financial and economic transactions of an entity. It mainly aims to provide an accurate and transparent picture of the entity's financial position, performance and profitability in financial statements such as the balance sheet, income statement, the cash flow statement and the statement of changes in equity.

Thus, to achieve this, the accounting manager must carry out several tasks such as:

- Entering accounting transactions;
- Preparation of the trial balance before inventory;
- Carrying out the physical inventory
- Treatment of discrepancies observed after the physical inventory;
- Bank reconciliation;
- Calculates and enters depreciation and possible losses in value of assets;
- Processing and recording of provisions;
- Recording of end-of-cycle settlement entries;
- Preparation of financial statements;
- Establishment of salaries.
- Establishment of the tax balance sheet from the accounting balance sheet after possible restatements;
- Preparation of monthly tax and parafiscal declarations;
- Preparation of possible consolidated balance sheets, etc.

II-1-2- Tasks performed in auditing

On the other hand, the audit is an independent mission which has for and objective the examination of the financial statements, the accounting and financial operations of an entity, as well as its internal control systems, carried out by an external auditor for the purpose of 'evaluate whether the financial statements are prepared in accordance with applicable accounting standards, whether they accurately reflect the financial position, results of operations and overall performance of the entity, and whether they are free from material error, fraud or irregularities

To succeed in his mission, the auditor must carry out several tasks such as:

- planning of the audit mission;
- Evaluation of the entity's internal control system;
- Establishment of an audit strategy and an appropriate work program;
- Collection of sufficient and appropriate supporting evidence;
- Assessment of audit risks;
- Carrying out analytical procedures

- Preparation of audit reports etc.

The tasks mentioned above, carried out in accounting or auditing, due to their nature, cannot all be automated, and however, some of them can be automated using the artificial intelligence technologies mentioned above, as follows.

II-2- Use of the Expert System (ES) in accounting and auditing

Studies show that the Expert System provides vital functionality to the areas of financial accounting: cash flow assessment, investment decisions, determination of financial position through ratios, leases and analyze financial reports. Expert systems are also used in the field of taxation. They have the ability to offer tax treatment on share investments. They provide advice regarding corporate tax accumulation and planning process, value added tax, tax return preparation system and corporate tax planning. In the field of international taxation, there is an expert system for international tax planning and optimization of the international tax situation of companies.

An expert system can help auditors improve the quality of their service in terms of audit planning, internal control assessment and audit risk identification. In the field of internal audit, expert systems are used to filter and verify transactions susceptible to fraud. (Chukwudi, 2018).

II-3- Use of Optical Character Recognition (OCR) in accounting and auditing

Optical Character Recognition defined above, can be used in accounting to automate the entry of invoices in a context of increasing dematerialization where economic actors have to process both paper invoices and digital invoices.

The invoice is scanned then analyzed by the system, which will recognize the characters. Thanks to intelligent data extraction technologies and machine learning, (OCR) is able to find the various information in the invoice and carry out the accounting translation.

By investing in such solutions, companies and accounting firms seek to gain time and efficiency in processing invoices.

II-4- Use of Robotic Process Automation (RPA) in accounting

Robotic process automation can be used in accounting, for example, to reconcile information from multiple sources, such as QuickBooks accounting software, Excel spreadsheets and customer invoices. For example, in accounting, a reconciliation employee can create a bot to automatically compare three data sources and determine discrepancies in less than a minute.

As an example, here are details of the operations carried out by an accounts payable robot (Tietz, 2020).

1. The bot monitors an email account for supplier invoices in PDF attachments. Once a PDF document is located, it is downloaded and saved by the robot in a cloud folder for supplier invoices.
2. Once a day, the robot transfers relevant information from supplier invoices to an Excel spreadsheet. For example, this data may include the supplier name, date, purchase order number, and quantity purchased.
3. The bot looks for a purchase order number on the supplier invoice. If a purchase order number is found, the bot compares the invoice to the purchase order and makes the decision whether to approve it and continue or mark the purchase order number as an exception requiring human review.
4. The robot accesses the company's accounts payable system and triggers the supplier payment process.
5. The robot follows all company rules related to paying suppliers. When it detects an exception, the transaction is flagged for human review.
6. The bot sends a confirmation email to the accounts payable employee, confirming task completion

Thus, ARP significantly reduces the time spent performing repetitive tasks. As AI is integrated into ARP systems, the capabilities of these bots will continue to expand significantly.

II-5- Use of Machine Learning (ML) in Accounting and Auditing

Machine learning is used in accounting, among other things to analyze models and make forecasts. The software applies machine learning techniques to an organization's past financial statements and as a result, the predictive model learns the traits and characteristics of the organization's financial and non-financial information. This information is then used to produce new information. Machine learning technologies are also used to automate the process of recording transactions in accounting ledgers, which is the most routine and time-consuming part of accounting work.

The system allows specific coding of accounting entries. Complex business transactions are easily disaggregated, described in accounting terms, and recorded in general ledgers. Fraud prevention and detection is another area where machine learning-based applications are used. Fraudulent activities such as asset theft, tax evasion and falsification of financial statements are predictable and identifiable through machine learning modeling of “normal” activities (Stancheva-Todorova, 2018).

II-6- Using Deep Learning (DL) in Accounting and Auditing

Machine learning is based on the integration of examples and their modeling. Deep learning makes it possible, using databases, those of the company or even open sources, to analyze the content of documents and check their accounting consistency: formal regularity, financial and economic regularity, contextual consistency, etc. . This automation is gradually becoming effective in companies and accounting firms. In addition, the chronological recording of operations can be secured by the use of blockchains. Ultimately, the integrity of the accounting bookkeeping is increased in terms of the completeness and fidelity of the recording of operations in accordance with the accounting plan.

These technologies will certainly affect the organization and functioning of the accounting departments of companies or consulting firms. They will not call into question their existence to the extent that man must retain overall control. The professional also remains the arbiter of complexity, that is to say the resolution of conflicts between several rules or the interpretation of the documents and operations to be recorded.

Thus, far from downgrading the accountant, these new tools should make it possible to improve their activity and increase their potential, particularly in their advisory role. Artificial intelligence applied to the systematic processing of operations must also be devoted to the redundant analysis of the coherence and regularity of operations.

From the point of view of auditing accounts, AI must make it possible to guarantee their faithful image, eliminate fraud and thus offer greater security to shareholders, staff representative institutions and third parties. Thus, AI offers a cross-reading of internal data with external data, according to a typological library of risks making it possible to detect anomalies.

III- Qualitative Study

To answer the problem raised, I conducted a qualitative study structured around interviews to design the future and the impact of AI on the accounting and auditing professions in Algeria.

III-1- Research methodology

First of all, I did some research on the internet and in books, and I found several articles on the subject. I realized that there were two established scenarios for the future of this profession with the arrival of AI. The first was optimistic and spoke of a transformation of the profession thanks to AI which will increase productivity and save time, while the second was pessimistic and spoke of a significant wave of technological unemployment and the

disappearance many positions. To get my own idea I decided to interview figures professionals to see how they react to AI, to see if they know its tools, if they already use it in their process, or if they have for their project to integrate into their firm and whether they consider AI as a threat to their profession or rather as an opportunity. I based myself on semi-structured interviews, in order to leave a certain freedom to each of the interviewees to speak openly, in the words they wish and in the order that suits them. My research is part of a qualitative approach through an interview guide through semi-directive interviews, based on an interview guide composed of direct questions addressed to 16 firms of auditors and chartered accountants in certain Wilaya of central and western Algeria. For each interview, we have made appointments in advance. The average duration of each interview was 30 minutes in the form of recording of conversations and taking notes. This study was carried out during the months of October and November 2023.

III-2- Analysis of responses

Several questions were asked to obtain as much information as possible from figures professionals; here are the most important ones:

III-2-1- Level of knowledge of Artificial Intelligence tools

To assess the interviewers' level of knowledge of AI tools, the following question was asked:

On a scale of 1 to 10, what is your knowledge of Artificial Intelligence tools?

1: I don't know them 10: I know them very well.

the average response was 6.33. This rating is above the average rating of 5, which is in the middle of the rating scale, so the answer get is pretty good. Although AI is a new technology, accountants and auditors know it quite well.

III-2-2- Level of confidence placed in Artificial Intelligence

To get the level of confidence that interviewers place in AI, the following question was asked:

On a scale of 1 to 10, how much confidence do you have in Artificial Intelligence?

1: I don't trust him 10: I trust him completely.

The average of responses was 7.88. It is above the knowledge level score. The level of confidence is higher than the level of knowledge.

III-2-3- Advantages and Disadvantages of using Artificial Intelligence

To highlight the advantages and disadvantages of using AI, the following question was asked:

what are the advantages and disadvantages of using Artificial Intelligence?

Almost all of those interviewed cited the following:

Advantages: Speed and time savings, automation, reduction of errors, productivity, efficiency and precision...

Disadvantages: Risk of power and machine breakdowns, computer viruses and cybercrime, unemployment and loss of jobs...

III-2-4- Accounting and auditing tasks that will be automated

To find out which tasks will be automated, the following question was asked: **In your opinion, which tasks will be automated?**

All of those interviewed responded that the tasks that will be automated are repetitive and time-consuming tasks, namely:

In Accounting: Entering accounting entries; Invoice management; Electronic document management; Tax and parafiscal declarations; Cash management; Customer and supplier management; Calculates depreciation; Closing of annual accounts. Other tasks by their nature cannot be automated.

In Audit: Audit planning, evaluation of internal control, identification of audit risks, filtration and verification of transactions susceptible to fraud. Several other tasks cannot be automated.

III-2-5- Artificial Intelligence Opportunities

To highlight the opportunities linked to AI, the following question was asked: **In your opinion, what are the opportunities linked to Artificial Intelligence?**

Almost all of the interviewees declared that by integrating AI as a new axis of productivity allowing to save time, because the work would be carried out 7 days a week and 24 hours a day without any break, as long as the tasks are made by machine, not by man, which will save energy and resources. In addition, the risk of errors made by machines is almost non-existent. Reports can be generated and sent to relevant people with automated tracking. This is an opportunity to gain productivity and efficiency...

The audit specialist interviewees affirmed that AI in audit makes it possible to analyze entire populations of data (analysis previously done by sampling) and to identify outliers or exceptions....

III-2-6- Artificial Intelligence Threats

To highlight the threats linked to AI, the following question was asked: **In your opinion, what are the Threats linked to Artificial Intelligence?**

30% of those interviewed showed their fear of job losses, especially in small firms which risk failing to adapt and therefore, subsequently, disappearing. They also said that if artificial intelligence is in the wrong hands it will be a serious threat to humanity. According to them, everyone should be worried about the consequences that AI could have.

The remaining 70% said there is no threat from AI, as long as accounting and auditing firms in developed countries have successfully transitioned to AI, making references to the Big Four (EY (Ernst & Young), PwC (PricewaterhouseCoopers), KPMG and Deloitte).

III-2-7- Training to work with Artificial Intelligence tools

To find out the opinions of the interviewees regarding training to work with AI tools, the following question was asked: **Would you consider doing training to learn how to work with Artificial Intelligence tools?**

80% of those interviewed declared a strong need to train themselves and all their staff in this direction, so that they are part of the change and future digital transformation. Because quite simply, the accounting and auditing function will experience an emergence given that people working in this field must have programming knowledge.

The remaining 20% of those interviewed declared that given their ages, it is very likely, by then, to retire and make way for young people...

III-2-8- Ability to support necessary investments in Artificial Intelligence

To find out the interviewees' ability to invest in AI, the following question was asked: **are you ready to make the necessary investments to work with Artificial Intelligence?**

80% of those interviewed responded that, in order for them to follow the news and be aware of everything that is happening, they are ready to invest huge sums of money to be able to integrate AI technologies as they go. that the market becomes increasingly competitive and that regulatory bodies take a firmer stance against the pitfalls of the profession.

The remaining 20% of those interviewed said that if the amount of investments will be too high, the return on investment will be minimal; they will be forced to withdraw from the function, or will continue to work without AI, if the law does not prevent them.

III-2-9- Future of accounting and auditing professions

To get an idea of the future of the accounting and auditing professions, the following question was asked: **How do you envisage the future of the accounting and auditing professions with the arrival of Artificial Intelligence?**

All of those interviewed responded that AI will have a strong impact on the future of the accounting profession, in particular on the basic accountant type profile which will disappear,

on the other hand the future of auditing will belong to those who know how to audit with AI tools. They reported the creation of new positions.

III-2-10-Training for future accountants and auditors

To find out what professionals think about the training of future accountants and auditors, the following question was asked: **What do you think of the program currently taught for accountants and auditors, and should it be changed?**

The majority of those interviewed responded that the current program is too theoretical and should be oriented towards practice by integrating accounting software, while in the future program, it will be imperative to integrate training on new artificial intelligence tools. Future accountants will have to be up to date with new skill requirements, such as machine programming, etc. This is why the entire school program must be rethought.

III-3- Discussion of results

After having conducted interviews with accounting firms, I noted that the results show that accountants and auditors agree that Artificial Intelligence will have a positive influence on the performance of accounting operations, it will make it possible to achieve repetitive tasks, solving problems that take a lot of time, and thus saving a lot of time for professionals, consequently better productivity and competitiveness is displayed. The qualitative study shows that the firms are perfectly in agreement with any change which will constitute an opportunity for them to seize. Artificial intelligence is undeniably part of our future. Rather than experiencing its arrival, it is therefore important to prepare to best predict the changes that are coming. Not to mention, implementing AI requires a significant amount of money to be able to invest in new technologies. It should be noted that certain missions of experts remain inaccessible to AI, they remain skills that distinguish them such as negotiation, social foresight, team training, trainee training, persuasion and decision-making, in addition new professions and skills were appearing because this environment will become a highly technological environment, in which those who are not initiated into it will no longer have their place. This is why some of these uninitiated people may consider a career change. However, AI in no way replaces the creativity and ability to learn inherent in humans. Its role will be more to reposition employees on tasks with higher added value rather than a change or reorganization in accounting firms. So, AI will take its place as an innovative technology, a still new technology in full development, with a profound transition of certain positions, the disappearance of others and the creation of new ones. AI alone cannot improve the accounting system and humans will always remain at the center.

III-4- Summary

Following reading of various studies, articles and books with the responses collected during the interviews, I noted that accounting will be among the professions most impacted by AI. Auditors and accountants have agreed on the integration of AI within their firms. They realize that this digital revolution brings many advantages such as saving time, improving productivity, quality and efficiency of work since it allows them to minimize or eliminate errors. The biggest fear is the unemployment that this new technology will cause. But, to cope, employees are moving towards other tasks that have a relationship with AI, we must react more quickly to train employees in the use of technologies and develop new skills. If this transformation is not carried out on time, then employees will be threatened by unemployment.

The majority of interviewees agree on the fact that the tedious tasks of entry, classification and archiving will be assigned to the machine. Their role will then be completely redefined and will tend towards a “consultant” function for clients. This role evolution will necessarily involve the development of new skills while retaining those that were initially essential to the profession. “Soft skills”, which are difficult to apply through artificial intelligence programs, will take precedence over technical skills.

The future profession of accounting and auditing will undoubtedly transform radically. The profile of the future accountant will have to harmonize with these technological developments. Human contact will take a primordial place, the quantity of work could be reduced, the accountant will instead have the responsibility of verifying the entry made by the artificial intelligence program and his role will mainly be to interpret this data to the beneficiaries of accounting and assist them in understanding their financial statements. Their role will also be that of advisor and consultant to clients.

As for the skills essential to future accountants, and as soon as there is no longer any manual entry to be made, advising clients will be the main activity of the profession. The accountant will therefore have to sharpen his analytical skills and his ability to be an educator. With this saving of time dedicated to client meetings, possible thanks to artificial intelligence, the accountant will have to master his field and that of the client even more, in order to provide personalized advice. The same goes for the law, which is an essential element that the accountant must master. He must be introduced to computers and machine programming.

III-5- Response to the problem

Before responding to the problem posed, I first try to accept or reject the hypotheses put forward at the beginning of this study.

Thanks to the various studies, readings, articles and interviews that I have carried out, I am able to conclude that:

For the First Hypothesis which was: "the introduction of artificial intelligence will lead to the creation of positions with a new skills profile for the accountants and auditors of tomorrow", This hypothesis is accepted from the moment when the theoretical study and The qualitative study concluded that artificial intelligence will lead to accountants and auditors who work with new technologies, having social, communication and listening skills.

For the Second Hypothesis which was: "Artificial Intelligence would lead to the elimination of accounting and auditing professions", This hypothesis is rejected from the moment when the theoretical study and the qualitative study showed that the tasks performed in accounting and auditing cannot all be automated and therefore the accountant and the auditor will always be there.

For the Third Hypothesis which was: Artificial Intelligence will have a positive effect on the future of the accounting and auditing professions. », This hypothesis is accepted since the theoretical study and the qualitative study have highlighted the multiple advantages that AI brings to the accounting and auditing professions.

After having dealt with the hypotheses put forward, I can now respond succinctly to my problem which was: **“What is the impact of artificial intelligence on the accounting and auditing professions?”**

Thanks to the various studies, readings, articles and interviews carried out, and based on the hypotheses discussed, I can conclude that artificial intelligence will impact the accounting and auditing professions from several angles, namely:

Good Impact on employment: elimination of some jobs and creation of new positions.→

Impact on productivity, efficiency, speed: reduction in the number of errors and saving time to devote to high value-added tasks;

Impact on the future of the accounting and auditing profession: need to learn to work with new technologies;

Impact on the necessary skills: knowledge of new technological tools, communication and listening skills, and development of “soft skills”;

Impact on initial training: need to integrate training on new artificial intelligence tools and computer science subjects;

Impact on continuing education: evolve with new technologies and remain attractive on the market.

Therefore, AI will have a positive impact on the accounting and auditing professions, you just need to prepare well and anticipate the changes, to make a good transition, because this revolution will be beneficial for those who anticipate and accept the use of new technologies, and that it will have a very negative impact on those who resist change.

Conclusion

Artificial intelligence is arriving at high speed with its share of changes and will disrupt the current economy, it is therefore essential to take an interest in it now, in order to understand it, to know its capabilities and limits, in order to welcome him.

The aim of this study is to show the different artificial intelligence tools and determine the impact of their future use on the accounting and auditing professions. To do this, a literature review was carried out and a sample of auditors and accountants were interviewed in their firms, and the following results were arrived at:

- The accounting and auditing profession is not doomed to disappear and artificial intelligence will be a real opportunity for their field, some jobs will disappear, but new jobs with higher added value will be created;
- The accounting and auditing profession will be transformed: the tedious tasks of entry, classification and archiving will be assigned to machines and those with greater added value will be focused on analysis and advice;
- The need to develop new skills while retaining those that were initially essential to the profession. “Soft skills”, which are difficult to apply through artificial intelligence programs, will take over technical skills;

Auditors will experience a renaissance, with immense opportunities for those entering the profession to drive innovation and progress. The essential concept at the heart of the audit which is the strengthening of confidence in the information will remain unchanged, however, the way in which the engagement teams which carry out audits will change, and the capacity of exercise of the auditors, the Judgment and critical thinking will be more essential than ever as they use new technologies.

- Artificial intelligence will have a positive impact on those who anticipate and accept the use of new technologies, and it will have a very negative impact on those who are resistant to change.

Recommendations:

This study can be crowned by the following recommendations:

- To successfully transition to artificial intelligence, it is necessary for accounting and auditing firms to prepare well for the changes, train employees and have them accept and make the best use of this technology.
- To successfully transition to artificial intelligence, training must also evolve. Accounting and auditing schools and universities must rethink the curriculum to take these changes into account and train students to use artificial intelligence tools. Basic accounting knowledge must be retained because it allows you to understand accounting mechanics and is necessary to control what the machine does and take over in the event of a breakdown.
- Numbers professionals absolutely must win their bets against the machines. This is an opportunity for them to prove the superiority of human intelligence over artificial intelligence, by cooperating with the machine so that it replaces them in tasks that they no longer wish to accomplish.

Endnotes:

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