

THE IMPACT OF ARTIFICIAL INTELLIGENCE ON THE ACCOUNTING PROFESSION

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Abstract

The present article reflects the role and importance of artificial intelligence in the accounting profession by defining the concept of artificial intelligence. The literature research brings to light the influence of these intelligent systems on the dynamics of the progress of accounting and accounting professionals. The purpose of the article is to illustrate the vision of professional accountants, these being the main actors provided in the application part of the work, regarding the implementation of new accounting tools that work with the help of digitization and technology. The research tool used is the questionnaire applied to professional accountants, exactly 100 employees, with different ages and professional experiences within companies, from several sectors of activity in the year 2025 and questions related to the perception of new technologies based on intelligent systems and how they foresee the following as they will intervene in accounting for their current jobs. Interviewed about the notion, but also the impact of artificial intelligence, which tends to be a positive one. Many of those interviewed answered favorably about the technology of accounting activities; there are also exceptions that consider this term as the main factor for which they will remain without jobs in the future.

Keywords

artificial intelligence, digitalization, accounting profession

JEL Classification

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Introduction

Artificial intelligence (AI) has become a topic of general interest for companies, becoming a topic of debate in many meetings organized by companies in order to improve performance and efficiency. The notion of AI dates back to 1936, with the

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emergence of the concept of a universal machine, but the implications of AI on human perception came many years later, more precisely in the 1997s. Artificial intelligence is thus becoming increasingly present in everyday life, not just in business life.

Nowadays, it has become very difficult to imagine life without the use of artificial intelligence. "Self-driving cars, mobile phones that can receive voice commands, complete words, even give advice through spoken language" (Makridakis, 2017).

The notion of AI, often associated with machine learning (building systems that can learn or improve their performance based on the data they process), generates among companies the desire to invest significantly in intelligent technologies and data science equipment.

Historically, accounting has been characterised by manual processes that involved time-consuming tasks. The emergence of artificial intelligence has enabled accounting professionals to automate routine activities, extract information from large databases, and provide data-driven recommendations promptly.

The automation of accounting processes was also driven by the accelerated growth of data generated by organisations. This influx of data could be managed much more efficiently by accounting professionals through the use of artificial intelligence, which allows them to identify patterns, detect anomalies, and extract useful information much more quickly and accurately.

The accounting profession has undergone profound transformations over the past decade, fueled by advances in technology, artificial intelligence, revolutionizing traditional accounting practices. In this rapidly evolving landscape, AI plays a defining role in the transformations that the accounting profession has experienced under the umbrella of revolutionary technology.

AI users are promoting this technology time to streamline tasks, such as certain accounting processes that involve routine and long execution times. According to research conducted on the specialized literature, it is observed that AI can be a main developer of the value of a company by an easier approach to the volume of data (Big Data), as well as by automating activities. "AI has simplified operations and empowered accountants to focus on value-added tasks that require critical thinking and judgment" (Muhammad A. 2024).

Today, accounting professionals deal with a wealth of data that must be processed, then analysed, and interpreted with precision. The use of AI-based tools and algorithms allows accountants to find patterns, detect anomalies, and extract useful insights much faster and more accurately than ever before.

Improving company performance and productivity by replacing routine tasks with digitalisation is a pawn for companies.

Although the progress made is a real added value, at the time of the research there is no international regulatory authority that can "control" this growth, which also implies high risks of accounting fraud.

However, artificial intelligence is not always viewed positively by the workforce, with many employees believing that replacing professional activities with technology can lead to a loss of reasoning and critical thinking. Based on this aspect, the main purpose of this article is to observe how companies manage their human resources, what their

opinion is on new technology, that of digitalisation, and how it impacts, depending on the industrial sector in which companies operate, their performance.

1. Review of the scientific literature

Artificial intelligence has been integrated into accounting since 1957. Arthur E. Carlson (1957), an associate professor at the University of Washington, wrote an article at the time about “automation in accounting systems.” Arthur E. Carlson concluded in his article that “automation in accounting and finance offers significant benefits in terms of efficiency and accuracy,” but that “automation also presents challenges that must be addressed.” These challenges, which have persisted, include data security, maintaining ethical standards, and managing workforce transitions.

The four giants (Big 4) in the global accounting sector (Klynveld Peat Marwick Goerdele- KPMG, PricewaterhouseCoopers-PwC, Ernst & Young, Deloitte Touche Tohmatsu Limited) have invested significantly in technological innovation and are using AI in various ways in accounting and auditing.

We analysed a series of articles and scientific writings that address the subject of the impact of technology on accounting, but also the perception of human power on AI.

Cotîrşău (2023) presents in his article the evolution of technologies in the accounting profession, starting from the initial phase in which accounting activities were carried out in paper and pen format, reaching the use of intelligent accounting software, which, with a simple click, performs tasks that previously took several hours. At the same time, the author presents both positive and negative aspects that automation implies for accounting, but also towards professionals.

Starting from the research done in the previous article, Dumitraşcu (2024) also presents the impact of artificial intelligence on the accounting profession, more precisely through the ChatGPT case. Dumitraşcu (2024) highlights the changes that have occurred in accounting through the implementation of intelligent systems, as causes of globalisation, legislative changes and innovation. Given the current situation of the accounting profession, which is in a state of continuous automation, the author conducts research on the ChatGBP application, more precisely, analyzes what the advantages and disadvantages of its use by accountants, but also for other professions, concluding that AI has a positive impact (through innovation, elimination of routine activities, creativity) on the health sector, accounting, and other fields of activity, but the use of these intelligent systems should take into account the risks they imply, critical thinking and reasoning remaining essential elements for the good performance of tasks.

Another research conducted by Edwards (2024) shows that AI has a significant impact on several business areas, with accounting being the most influenced by automation. According to the author, AI in the accounting profession can be used to automate, streamline various repetitive, routine or even more complex tasks. According to a study conducted by him, automation, fraud prevention, financial forecasting, document analysis, automated auditing, but also tax compliance assistance are just some of the advantages that the implementation of AI in accounting activities can have.

A study by researchers at the University of Pennsylvania and OpenAI (developer of the ChatGPT artificial language model) concluded that “technology, over time, will make at least 10% of the tasks performed by 80% of workers more efficient and half of the tasks performed by 19% of them”.

In an article by Wamba-Taguimdje et. al. (2020), intelligent systems are presented, similar to the other previously written articles, with both benefits and disadvantages for companies. The authors illustrate that AI offers businesses the opportunity to improve their economic performance, but many companies predict that the applications provided by new technologies would not have the ethical component very well implemented, the lack of reasoning and professional critical thinking being a weak point currently for companies, some of them recommending researchers and developers to build ethical intelligent systems.

Stanciu and Rîndașu (2020) present in their article AI as a main factor that has determined the dynamics of accounting and accounting professionals. The reason for the changes that have occurred in the accounting profession through the implementation of new technologies to streamline economic processes (big data, robotisation, blockchain) is the starting point and initiative of companies to introduce staff training courses in the use of intelligent systems. It is also desired to implement training courses in this regard in universities for young students, who are in full professional ascent, but, although this need is increasingly noted, courses related to AI in European universities show a slow evolution of introduction. At the same time, within the article, a study conducted by the World Economic Forum (WEF) in 2018 shows that in approximately 4 years, the financial-accounting profession will disappear by being replaced by new technologies and robots. Thus, starting from this hypothesis, and taking into account the National Strategy for the development and support of digitalization, the academic field has adhered by increasing the number of courses in IT, as well as creating new ones related to the field of artificial intelligence.

Like Stanciu and Rîndașu (2020), Bordian (2024) points out the importance of improving accountants' digitalization skills and adapting them to the major changes that have occurred with the emergence of intelligent accounting systems. Professionals must develop critical thinking skills about AI systems. Bordian (2024) conducts a bibliographic analysis of publications in international databases, and his conclusions indicate the importance of educating the accounting profession in terms of automation and the development of AI systems.

Also, the audit and accounting profession benefits from the strengths brought by AI in the performance of the activities and tasks of the field, technology being essential in efficiency, also increasing the quality of the actions carried out, according to the authors Frunze and Cușmănușă (2023). They signal, according to other researchers, the importance of training professionals in the field of digitalization.

Concluding the research part of the literature conducted, the impact of digitalization and automation, which are in full development in many fields of activity, including the accounting and auditing profession, is, on the one hand, positive, through increased efficiency and benefits brought to companies, and on the other hand, negative, through employee opposition to change or high implementation costs, these aspects being reported by Stoica and Ionescu-Feleagă (2024).

2. Research methodology

In the DESI Report (2022), Romania ranked 27th out of the 27 Member States of the European Union, scoring 30.6 points compared to the European average of 52.3 points

in terms of progress in the digital field. The efforts made by state authorities to increase the level of digitalization, aiming to facilitate the interaction between the state and companies, oblige companies to digitize themselves. The perception of accounting professionals regarding the digitalization of the profession is a key interest given the challenges encountered.

Starting from the theoretical elements identified by the researchers and illustrated previously, a study was conducted based on an empirical analysis of the data taken through the creation and provision of a questionnaire on 100 employees working in the economic and financial field, but from different sectors and industries. It is specified that their selection criteria were used, such as: age, gender, sector of activity and seniority in work/enterprise. As has been observed, artificial intelligence can influence a company more or less positively depending on the specific activity, a significant part of those impacted by new technologies being employees in the professional accounting field.

Those who were part of the analysis, more precisely, those who responded to the questionnaire sent, were 100 accounting specialists from various industries, presented in Table no. 1:

Tabel no. 1 – Structure of the respondents

<i>Nr. Crt.</i>	<i>Profession</i>	<i>Industrial Sector</i>
1	Accounting professionals	Finance/Public Administration
2		Education
3		Health (Hospital)
4		Tourism
5		Economic
6		Trade and Services
7		Other

Source: Own processing

It can be seen from the analysis of table no. 1 presented above that accounting professionals from 7 industrial sectors were interviewed (finance/public administration, education, health, tourism, economic, trade and services, other sectors).

3. Results and discussion

The evolution of artificial intelligence and its impact on the accounting profession requires in-depth research to understand the transformative influence it is having on accounting. The automation of routine tasks, while promising efficiency gains and cost reductions, also requires research into the impact on potential job displacements within the accounting workforce.

The primary purpose of the study is to assess the impact of artificial intelligence on the evolving role of the accounting professional. The study examines how the accounting professional will adapt as routine tasks are taken over by AI. While some roles may be impacted, the research seeks to identify opportunities for professional development, education, and training in AI-based accounting practices. This includes assessing the skills, competencies and knowledge areas needed by accounting professionals for the effective use of artificial intelligence-based technologies, as well as examining the role

of academic institutions, professional associations and continuing education programs in preparing the new generation of accounting professionals for an artificial intelligence-based future.

In a first phase, a series of questions were asked related to their profile, obtaining the following results:

To the question "How old are you?", most respondents (65%) are between 26-35 years old, followed by those aged between 36-50 and over 50 years old, with an equal share of 15%, only 5 of them choosing the age category 18-25 years old, aspects also illustrated in Chart no. 1. It can be seen that most of those surveyed are mature people, followed, at the opposite pole, by employees aged 18-25 years old, which will highlight the perception of young people in parallel with that of mature people in relation to new technologies, putting different perceptions of mentality in parallel.

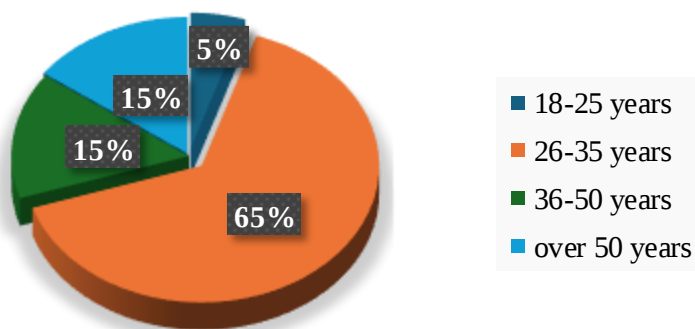


Chart No. 1 Age of respondents

Source: Taken from the questionnaire sent

When asked "What is your gender?", 55% of those surveyed are female, the rest being male, a proportion that highlights that the questions are asked relatively equitably between the sexes, the majority being reached by the fairer sex and thanks to the fact that, most often in practice, accounting fields are carried out by women. The analysis of the results for this question clearly highlights the fact that the gender of the respondents cannot be treated as an independent variable.

The third question, "In which sector do you currently work?" presents varied answers provided in Chart no. 2 below. Most are accounting professionals in companies with the finance/public administration field of activity, followed by 15% of those in the health, tourism and education industry categories. The rest of those surveyed are part of companies with economic, trade and services field of activity, only one of them choosing the "Other categories" section.

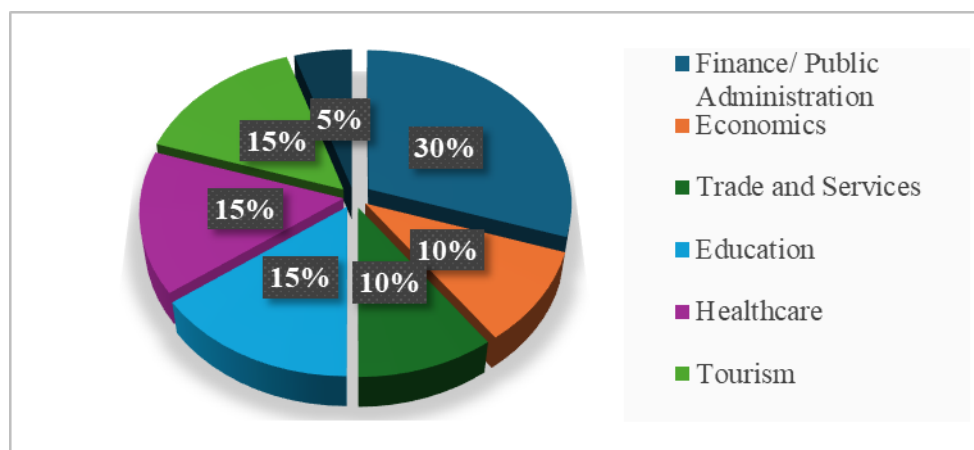


Chart no. 2 – Respondents' sectors of activity

Source: Taken from the questionnaire sent

The last question in the first set “How long have you been working in your current company?” highlights, according to Chart no. 3, that most of the accountants surveyed have over 10 years of experience in their current job, which indicates that professional experience will also come first in interpreting the results of the questionnaire regarding artificial intelligence and its impact on the accounting profession. One fourth of those surveyed answered that they have had experience between 1-5 years, another between 6-10 years, and only 20% of the respondents, have had experience in the unit for less than one year.

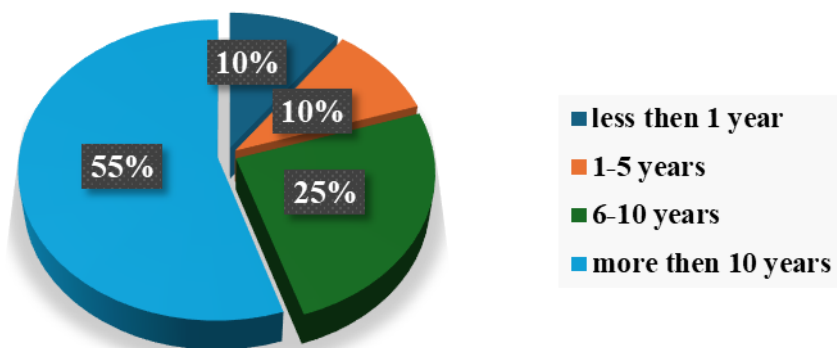


Chart no. 3 – Respondents' length of service in the company

Source: Taken from the questionnaire sent

Going through the first set of questions, it can be seen that the sample is varied, if analyzed as extremes (by taking the highest and lowest weights, respectively), the majority of employees being female, from the finance/public administration sector with over 10 years of experience in the unit, and the fewest being represented by men who carry out their professional activity in the industrial, trade, services and economic sectors, with a short experience (less than one year in the unit).

The second set of questions addressed to the 100 accounting employees concerns questions related to their perception of the role and impact of artificial intelligence on their profession.

To the first question, "Have you heard of AI (Artificial Intelligence)?", all those surveyed answered affirmatively, which denotes the impact that artificial intelligence has on society, accounting professionals, regardless of age, gender, seniority or industry, having heard at least once about the term artificial intelligence.

Question number 2 "Do you have a good opinion about the potential of integrating AI technologies into accounting operations?" It can be seen that most respondents answered positively, which highlights a general favourable opinion of 85% that accounting employees have regarding the implementation of new intelligent technologies in their professional activity. A very small number, only 15% of those surveyed, stated the opposite opinion they have regarding the integration of digitalization into economic processes.

The third question, "Do you think AI could contribute to improving accounting operations?" shows that most mention that intelligent systems, through their implementation, will bring a plus to accounting operations. The other 30% believe that the technologization of accounting operations undertaken by employees could not positively influence their improvement, thinking that their performance would be maintained or, in the worst case, would diminish its quality. There is a sizeable group (70%) that sees value in artificial intelligence, but despite this, there is a significant minority that has a negative attitude when it comes to the impact that AI has on accounting operations.

Question number 4 "Do you think that AI could influence the need for human resources within the department?" provides results according to which 85% of employees believe that, similar to the article published by Ciarnau (2023), the introduction of intelligent systems in the company could have an effect on the need for human resources, both in terms of numbers and in terms of their efficiency. Only 15% of the respondents do not consider new technologies to have an impact on the need for employees.

The fifth question, "Do you consider that AI could be considered a control measure in managing identified risks?" shows that the vast majority affirm this, with 70% considering that technology can be a foundation in establishing control measures to resolve risks found at the level of the company in which they operate.

Question number 6, "Do you think that the use of AI technologies will affect the financial resources necessary for accounting operations?" is surprising because 70% of those included in the sample believe that artificial intelligence would have an unfavourable economic impact on the company they work for. Thus, the opinion of specialists in the economic-accounting field, when asked about financial resources, only

30% believe that the implementation of digitalization will not have negative effects on the economic and financial performance of the company.

The seventh question "What do you consider to be the advantages of using AI for the accounting professions?" illustrates a series of answers also provided in Chart no. 4, the vast majority considering the concentration of professionals on more important activities or those involving a higher degree of decision-making, as the main advantage that the digitalization of the accounting profession has on it. Although there were 15 employees who presented a negative opinion towards the new intelligent systems, they also expressed their opinion on the existence of benefits in using smart technologies.

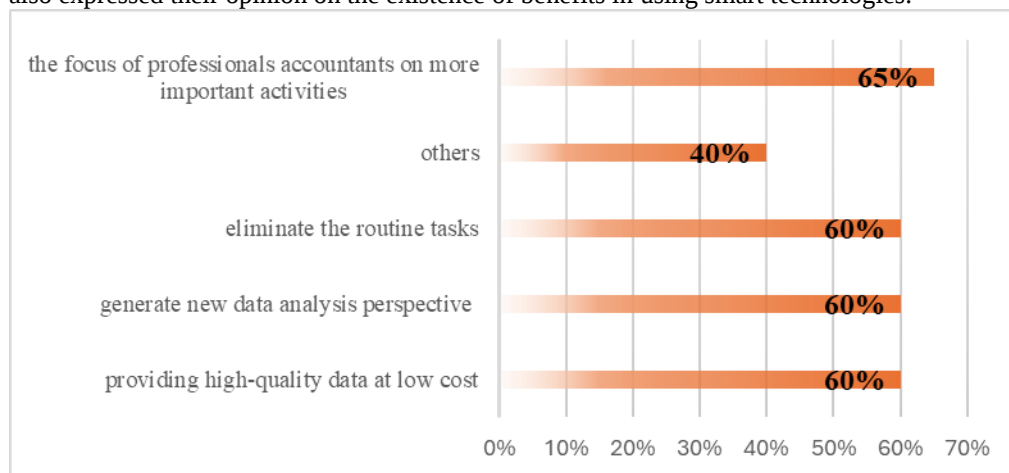
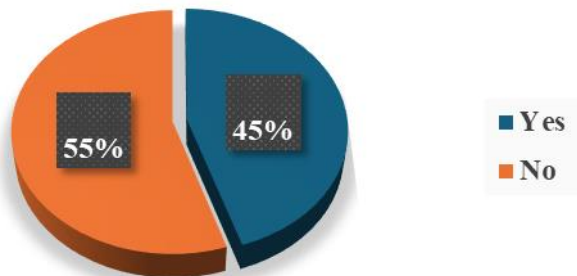


Chart no. 4 – Advantages of using AI

Source: Taken from the questionnaire sent

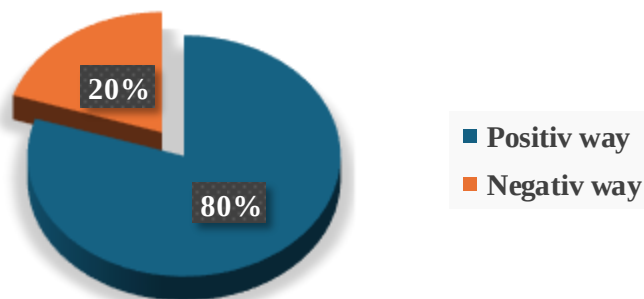
To question 8, "Do you think that the introduction of robots would steal your jobs in the future?" the answers are roughly provided in the extreme, more precisely, 55% of the employees deny this aspect, and 45% affirm the fact that digitalization could take over their jobs. Like the study conducted by Ceslav (2020), in which he outlines that in the next 20 years, the accounting profession will disappear to the detriment of intelligent systems, 45% of the respondents fear that they will lose their jobs with the introduction of AI in companies.



Graph no.5- Do you think the introduction of robots would steal your jobs in the future?

Source: Taken from the questionnaire sent

Question 9 "How do you think AI will contribute to the development of the company you work for?" indicates answers (80%) positive regarding the contribution that digitalization would have on expanding the performance of the company in which employees carry out their activities. The remaining disparege the impact of AI on the development of society, 20% of them considering that the new systems do not intervene effectively.

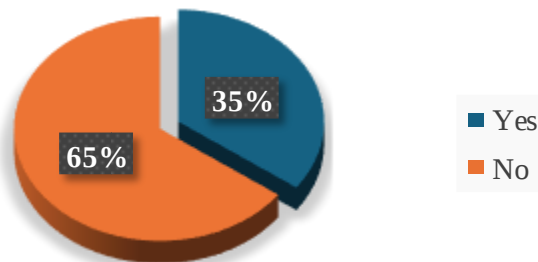


Graph no. 6 - In what way do you think AI will contribute to the development of the company you work for?

Source: Taken from the questionnaire sent

The last question, "Do you think that AI will completely replace the accounting profession in the future?" illustrates the scepticism of the sample, with the majority concluding that they do not believe that the implementation of intelligent technologies within the company, implicitly in the accounting professional field, would completely replace this profession. 35% of the respondents, however, confirmed that, in the coming

years, through artificial intelligence, classic accounting undertaken by specialists will disappear.



Graph no.7- Do you think that AI will completely replace the accounting profession in the future?

Source: Taken from the questionnaire sent

Following the results obtained and interpreted, it can be seen that opinions are divided. While some accountants and accounting professionals believe that implementing AI systems within the company they work for would positively impact its performance, as well as reducing the time required to complete various routine or time-consuming tasks, another part of the respondents believes that new technologies can negatively impact both society and the accounting profession, most of them fearing that they will be completely replaced by AI in the future.

Anin D. Luthfiana (2024) concluded in an article that “everything can be transformed into data, given the accelerated evolution of technology, and we will probably eventually be replaced by robots, which lack imagination and reasoning, specifically human attributes....AI as data processing, spreadsheets, data analysis, etc. is a useful tool only if people know how to use it.”

Artificial intelligence is evolving at an accelerated pace and will replace accounting professionals in performing routine tasks because AI can perform them faster and more accurately. However, if accounting professionals continuously develop their skills and competencies, there is a minimal risk of increasing the unemployment rate among the accounting profession.

From the analysis of the questionnaire, we can conclude that accounting professionals, users of spreadsheets and manual writing instruments, will be replaced by new generations who will use artificial intelligence in their interest by reducing working time as well as in the interest of users of financial information by producing information of exemplary accuracy "at the speed of light".

Conclusions

The accounting professional plays an essential role in the economy. Through professional skills and advanced digital knowledge, accounting specialists are actors of major importance in ensuring the success of an entity. In an era of digitalization, it is

essential that the accounting profession adapts to changes, continues to develop its skills and treats each challenge as an opportunity for learning and evolution. The digitalisation of the accounting profession allows the automation of a very large number of tasks, so future generations of accounting professionals will also have to acquire knowledge in the IT field, thus evolving from a “numbers man” to a “multilaterally developed” person. The information system transforms accounting into the art that “ensures its success” and takes the accounting professional out of their professional comfort zone, thus promoting lifelong learning.

The questionnaire represented an essential working tool, which facilitated the formulation of relevant opinions in relation to the researched topic.

Thus, the integration of artificial intelligence into accounting offers considerable benefits. Working together, accountants and developers of artificial intelligence can harness its full potential for the benefit of humanity, with the caveat that there is still reluctance regarding intelligent accounting systems, the fear that in the future they could take over current jobs and affect the perception of employees.

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