

THE PERCEPTION OF PROFESSIONALS IN THE FINANCIAL ACCOUNTING FIELD FROM ROMANIA REGARDING THE DIGITALIZATION OF THE ACCOUNTING PROFESSION

PODOABĂ LUCIA

ASSOC.PROF.PHD, FACULTY OF ECONOMICS AND BUSINESS ADMINISTRATION, BABEȘ-BOLYAI UNIVERSITY CLUJ-NAPOCA, ROMANIA

e-mail:lucia.podoaba@econ.ubbcluj.ro

ARMANĂ LUCICA

LECTURER PHD, FACULTY OF HORTICULTURE AND BUSINESS IN RURAL DEVELOPMENT, UNIVERSITY OF AGRICULTURAL SCIENCES AND VETERINARY MEDICINE CLUJ-NAPOCA, ROMANIA

e-mail:lucica.armanca@usamvcluj.ro

Abstract

The use and implementation of digital technologies related to the current economy will allow to the professionals in the financial and accounting field to become creators of added value, through the quality services provided. However, the digital revolution brings important changes in the work of the specialist in this field, forcing him to continuously improve his skills. Taking into account the implications and consequences of the digitization of the accounting profession, this paper actually represents a case study regarding the perception of accounting professionals regarding the future of the accounting profession in the digital economy. Its final conclusions highlight the fact that the accounting profession is not dominated by information technology, but is influenced by the level of digitization of the economic environment.

Keywords: digitalization, accounting profession, accounting education, cognitive factors in decision making

Clasificare JEL: M41, M49, I25, D91, O33

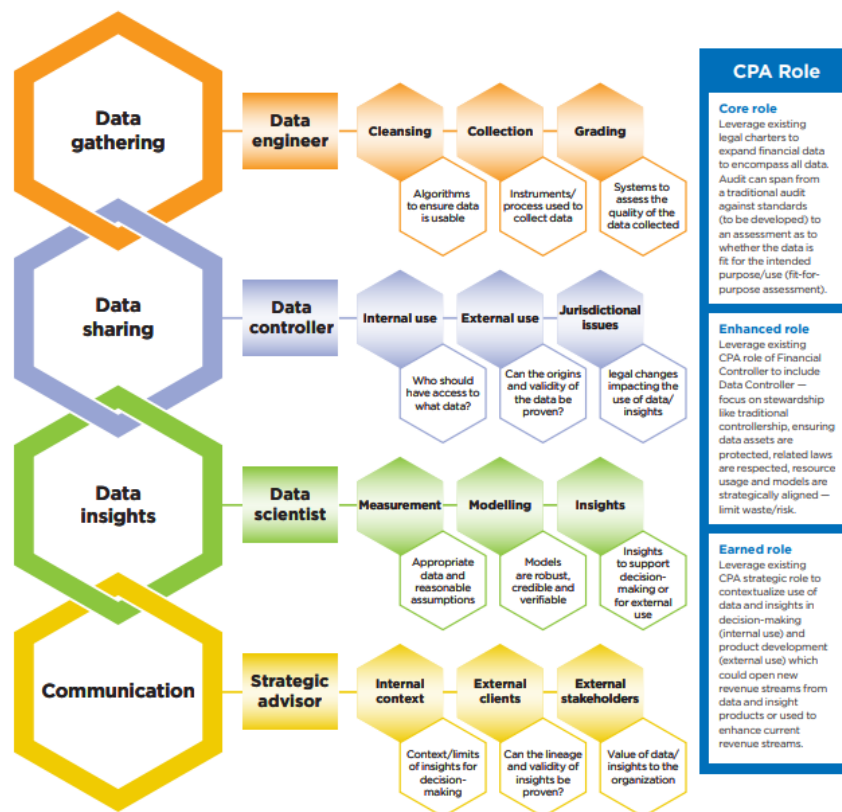
1. Introduction and context of the study

In today's global economy, data is an asset that can ensure correct decisions with multiple strategic impacts. The digital revolution brings major changes and multiple challenges, because regulatory standards have not always been at the level of the emergence of this new valuable asset. The global transition to a digital economy that ensures the profitability and sustainability of companies is directly influenced by the legal and regulatory environment, which allows the quantification and maintenance of all risks arising in order to carry out legal economic operations. The recognition of data as an asset has given rise to a new concept called the value chain of data management, which aims to create results. These outcomes can range from evidence-based organizational strategies to AI-based solutions (which benefit from self-learning but can generate routine decisions). In this context, the professionals in the financial and accounting field must adapt to continue to provide strategic contributions as value chains evolve from an industrial to a digital economy. Although these professionals have always managed valuable data/information, their professional experience can be focused on structured data sets and more recently unstructured data (financial and non-financial) to help companies make correct, timely and error-free decisions. risks (or with minimal risks). In order to ensure the proper fulfillment of the responsibility that characterizes them, the professionals in the financial and accounting field must complement their existing competencies with the skills and the necessary knowledge within the new value chain of data management.

According to IFAC [12]:

"A data management value chain (see Figure no.1), consists of processes associated with gathering, sharing, analyzing and communicating insights arising from data.

Figure no.1 Data management value chain



Through its Foresight Initiative, CPA Canada identified three categories of professional accounting roles within a traditional value chain:

- **Core role:** derived from the legal charters underpinning the profession, accountants are mandated to confirm financial data and that financial information has been fairly presented according to norms and standards;
- **Enhanced role:** focused on stewardship functions related to the financial and physical resources of the organization; required to ensure that only those with appropriate access use the organization's resources for legitimate purposes;
- **Earned role:** a strategic advisor integrating multiple perspectives to provide context for the financial information presented to decision-makers or communicated to stakeholders."

CPA Canada means Chartered Professional Accountants Canada.

Also, IFAC [12] pointed out that "the four key roles at play in the data management value chain and how professional accountants can perform in these roles. While some of the terms used to describe these functions may seem to place them outside the expertise of professional accountants, most can be effectively filled by those with a professional accountant's experience and training. The four roles are:

- **Data engineer:** ensures data used has integrity, is clean and reliable;
- **Data controller:** focuses on the stewardship of data resources, similar to the traditional controllership role (stewardship of financial and physical resources);

- Data scientist: analyzes and interprets complex data to develop insights to support decision-making;
- Strategic advisor: frames, analyzes and explains complex business issues within a local, national or global context based on an understanding of the strengths and limitations of the data, and the assumptions and models which underpin derived insights".

As the accounting profession is based on technical competence, skills, values, ethics and professional attitudes relevant in the current and future business environment, it is imperative that professional accountants maintain self-confidence and show an increased interest in agility and resilience. In order to achieve these goals, they must adopt a mindset that will allow their skills to evolve faster than in the past, as technological advances and societal demands change very quickly. At the same time, they must maintain their existing mentality of being vigilant about the risks that need to be managed and continue to bring ethical leadership in all categories of organizational decisions. As trustees of trust in the digital age [12], the technical competence of professional accountants will remain essential, but oriented towards new areas, thus demonstrating that the accounting profession responds to the needs of society.

Our concerns in this article are related to the perception that financial accounting professionals have regarding the future of the accounting profession in the age of digitization and how they are prepared to face this process.

2. Literature review

Since in this article we want to express considerations regarding the perception of professionals in the financial and accounting field in Romania on the digitization of the profession, we only carry out a review of the specialized literature that strictly refers to this topic.

In order to be able to deal brilliantly with the multiple transformations imposed by the digitization process, professionals in the financial and accounting field must develop multiple skills, to help at the right time, in making the most appropriate managerial decisions. Here's why, Vărgă Delia [10] believes that "cognitive complexity is a predictor of the rational decision-making style, and decision-making ability is a predictor of the adaptive control style of stress, vigilance. Under conditions of uncertainty, cognitive skills (described in terms behavioral), together with personality factors, best predict organizational decision-making efficiency and performance. In conditions of stability, the link between decision-making performance and these cognitive skills disappears. Thus, under conditions of current activity, general cognitive skills demonstrated their viability as predictors of decision-making performance. The personality dimensions, however, contribute significantly to the explanation and prediction of decision-making performance, under the conditions in which the influences determined by general cognitive skills have been eliminated, cognitive complexity and decision-making capacity. Thus, in the conditions in which we want to select a person for a leadership position, who will achieve performance in decision-making and we have several candidates with relatively equal levels of general intellectual level, decision-making capacity and similar cognitive complexity, we must take care of the fact that candidates will have different personality traits that will generate different decision-making performances".

The financial performances of companies are identified based on the information provided by accounting, and its changes in the digital age generate multiple consequences. In this regard, Botea Răzvan [1] opines that "accounting is the field in which automation and digitization have penetrated the most, along with audit activity. The accounting profession is in the area where 97% of activities are amenable to digitization, thus there is a need to adapt to the new reality and to reconfigure the accountant's activity."

David Delia and Cernușca Lucian [3] appreciate that "the accounting profession is currently dealing with great challenges as a result of the evolution of digital technology; companies

and organisations are changing their business models following the digital disturbance, and accountants must be prepared to offer advice to their clients".

Măța Veronica & Man Mariana [5] consider that "the professional accountant in the future will be relieved of performing repetitive, routine, non-creative work of added value, instead he/she will acquire increased responsibilities in consulting, analysis, forecasting activities, in the field of company management and financial management- accountant. As a result, for the accounting profession to become pro-active, it must continuously adapt to the demands imposed by the advancement of today's technologies".

Professor PHD Șova Robert Aurelian [7] believes that new technologies "can help professional accountants to better fulfill their duties towards the client and add more value to savings and the public interest".

Olaru Elena Alina [6] believes that "scientific research on the areas of use of advanced digital technologies in accounting is in its infancy. Professional accountants need to prepare to accept digitalisation as a challenge to become more experienced and to consolidate their status as a reliable third party".

Emphasizing the importance of the permanent adaptation of the Romanian accounting system to the changes in the IT field in recent years, Ursachi Antonela [9] is of the opinion that, "undeniably, we live in an era of computerization, which leads us to continuously adapt to the evolution of technology. From the simplest primary record document to the most complex financial analysis, they are all computerized and processed by more and more efficient software, which makes our work easier, helps us to prepare pertinent analyzes on time, determinants for the positive evolution of each economic-social entity. Thus, financial and managerial reports have an increased degree of transparency and faithfully present the economic reality of a company. At the same time, we take into account the fact that the processes of globalization and the expansion of capital markets require the reporting of a much larger volume of information through which the nature of transactions and economic-financial treatments can be accurately established."

Mr. Philippe Arraou, first vice-president of CILEA (Comité de Integración Latino Europa-América), during the XXII edition of the Congress of the accounting profession in Romania [11], an event that took place on September 28-29, 2018, emphasized the fact that "He who adapts to the change will survive, but he who does not keep up will be removed from the market".

The accounting profession must continue its efforts to adapt to the new changes taking place in the field of information technology. In this regard, Professor PHD Costel Istrate [13], president of the CECCAR Iasi Branch, believes that "it is necessary to update strategies, improve current practices, reset the way of interacting with customers. All these actions have the potential to create value both for the profession and for the clients of professional accountants or for the various users of the information provided by accounting (tax authorities, banks and other financial institutions, etc."

The risks generated by modern technology cannot be excluded (especially the one related to cyber security), but on them Bucată Paraschiva [2] emphasizes the fact that "they can be counteracted if we capitalize, as it should, the great advantages it offers us to obtain the finished product at optimal parameters. We realize that we live in a time where technology has advanced a lot and information can be gathered much more easily using search engines. Technology allows us to transfer data much faster, information circulates quickly, specialization is accessible to several categories of people, which also determines the development of the competitive spirit, contributing, at the same time, to the promotion of social communication skills".

Also, professor PHD Șova Robert Aurelian [8] appreciates that "software will never be able to replace human judgement, but it will increasingly take over repetitive activity".

In an analysis regarding the incorporation of Big Data technology in the accounting profession, Associate Professor PHD Groșanu Adrian (together with other specialists) [4] emphasized that accounting professionals do not keep up with the current economy, and the future

of accounting will be decided according to the choices of professionals, who are at opposite poles, either " traditional paradigm", or "promoting the future".

3. Research framework

The main objective of this paper is to observe and analyze the way in which PFA perceive the digitization phenomenon that occurred at the level of accounting and financial activity in general, respectively at the level of Romania in particular, mainly following the factors of influence, opportunities and challenges brought the profession by the digitization process.

Our research is based on 3 hypotheses formulated as follows:

H1 - The financial and accounting professional is influenced by the level of digitization of the economic environment in general, of the profession in particular;

H2 - Information technology can replace professional reasoning, against the background of diminishing responsibilities characteristic of financial-accounting practitioners;

H3 - The future of financial and accounting professionals in Romania depends on the real responsibility assumed by them for the challenges, opportunities and consequences determined by the digital revolution.

Thus, our research is descriptive of a transversal type, which is why, regarding the quantitative side of the research methodology used in the work, in the case study we included a survey type survey carried out by means of a predefined questionnaire. The predetermined answers to the questions asked were based on the Likert scale, using several answer options. This gave us a deeper insight into the evolution of the digitization phenomenon in the context of real life. Each question in the questionnaire was in turn described by a series of statements, to which we asked respondents to express their agreement, disagreement or abstention according to a multi-choice scale detailed in the following table:

Table no.1 Clarifications regarding the composition of the answer options of the questionnaire

Clarifications/details	Answer options
5 answer options were used, marked from 1 to 5, ie:	1 – Total disagreement; 2 – Disagreement; 3 – Indifferent/Neutral; 4 – Agreement; 5 - Total agreement.
3 answer options were used, marked from 1 to 3, ie:	1 – Positive; 2 – Negative; 3 - Abstention.
3 answer options were used, marked from 1 to 3, ie:	1 – Abstention; 2 – Agree; 3 - Totally agree.
2 answer options were used, marked from 1 to 2, ie:	1 – Yes; 2 – No.
3 answer options were used, marked from 1 to 3, ie:	1 – Yes; 2 – No; 3 - Absention.
3 answer options were used, marked from 1 to 3, ie:	1 – Disagreement; 2 – Total disagreement; 3 - Abstention.
3 answer options were used, marked from 1 to 3, ie:	1 – Yes; 2 – No; 3 - I can't pronounce.
4 answer options were used, marked from 1 to 4, ie:	1- Inappropriate; 2 – I can't pronounce; 3 – Good; 4- Very good.

On this scale, each answer was assigned a numerical value (1, 2, 3, 4 or 5). This numbering sometimes corresponds to the idea that a higher score given to a statement expresses total agreement with it and a closeness to the general objective pursued, and a lower score given to a statement reveals the total disagreement of the respondent. Other times, on the other hand, a score given starting with the number 1 reveals the order of priorities of the statement for the respondent, respectively the meaning of a positive or negative answer to the question asked (for example: 1-Yes, 2-No). The reason why I chose such variations of the answer options was not to confuse the respondent, but to be able to more easily select the positivity or negativity of the respondents' perception of the subject under evaluation.

Thus, the questionnaire is made up of Lickert scale questions, which express both agreement/-disagreement with some statements and the intensity of these two answer options. The questionnaire includes two categories of questions:

• **General questions:** to provide an overview of the personal profile of the financial accounting professional in the sample. These are formulated with the aim of finding out data and characteristics about the

respondents such as: age, gender, status, the fields in which they operate, professional experience, the relationship with the state authorities, respectively with professional bodies, etc.

• *Cause-effect type questions*: to determine the respondents' perception of the problem of digitization of the accounting profession.

The cause-effect questions analyze the perception of PFA regarding:

- the impact that digitization had on the evolution of the profession in Romania;
- the need to use information technologies in the exercise of activities as well as the need to possess digital skills;

- the urgent need to modernize and improve the education methods of future accounting professionals and the connection with the academic environment;

- information technology versus professional reasoning;

- increasing the role of professional bodies (Corporation of Chartered Accountants and Chartered Accountants from Romania - abbreviated CECCAR, Chamber of Fiscal Consultants - abbreviated CCF, Chamber of Financial Auditors from Romania - abbreviated CAFR) in the digital revolution of the profession (through specific measures to organize courses and seminars for members of the bodies mentioned above within the continuous professional training programs);

- the motivations and challenges generated by the implementation of new technologies such as Data analytics and forecasting (improvement of Big Data capabilities), RPA (Robotic Process Automation), Cloud and SaaS (Software as a Service), Artificial Intelligence (AI) and Blockchain (digital register) in the Romanian accounting environment;

- the role of professional accountants within organizations and how they influence managerial decisions;

- the issue of information confidentiality and cyber security;

- the responsibility of accounting professionals following the digital revolution and its consequences;

- the need to acquire technical skills and the estimated expenses to be achieved by accounting professionals, against the background of digitalization and cyber security necessary to be implemented.

- the need to digitize the Romanian tax system and the role of professional accountants in taxpayers' tax compliance;

- digitization of ANAF and the introduction of the Ro E-invoice and Ro E-Transport systems, the establishment of the new SAF-T information declaration (only in general, because we have carried out a wider research on this subject, the results of which will be presented in the future, in another article).

The period of time provided for carrying out this survey was the period May 2023 - October 2023. The target audience of this survey was made up of professional accountants, mainly members of CECCAR and/or other certified professional accounting bodies (such as: tax consultants - members of Chamber of Fiscal Consultants, financial auditor - members of the Chamber of Financial Auditors from Romania) from three counties Cluj-Napoca, Bistrița-Năsăud and Satu-Mare. The contact method used was by electronic mail (e-mail).

Right from the beginning, we state that we abbreviate the words "professionals from the financial and accounting field" as PFA and this abbreviation we will use in this article.

We emphasize that, in the first part entitled A, our article presents the necessary information on the respondents, and in the second part entitled B we will highlight their questions, answers and necessary explanations.

4. Research results

A. Application of general questions - characteristics of respondents

The questionnaire was sent to a total of 280 PFA, of which 204 responded, their responses being recorded as valid in a percentage of 73%. The remaining 47 people answered evasively and incompletely, i.e. a percentage of 17%, and 29 people did not answer, i.e. a percentage of 10%. The distribution of the 204 respondents by county is highlighted in the table below:

Table no.2 Distribution by county of respondents to the questionnaires

County	Number of PFA (number of persons)	Percentage of total validated respondents (%)
Cluj-Napoca	80	39
Bistrița-Năsăud	65	32
Satu-Mare	59	29
Total	204	100

From the table above (Table no. 2) we notice that the distribution of respondents by county is relatively homogeneous, there are small variations of the respondents from the point of view of the selected locations, a fact that suggests the rather high interest shown by PFA regarding the subject of digitalization of the accounting profession. We observe that the majority of respondents come from Cluj-Napoca county with a percentage of 39%, followed by those from Bistrita Nasăud county with 32% respondents and from Satu-Mare county with a percentage of 29%. The gap of 7% and 3%, respectively, in the distribution of people by county can be caused by the different interest expressed by the respondents in the subject of the research.

Regarding the age criterion of the PFA who participated in the research, 64 people are between 30-40 years old, 106 people between 40-50 years old and respectively 34 people over the age of 50. The distribution of respondents according to age is shown in the figure below (Figure no. 2)

Figure no.2 Distribution of respondents according to age (number of persons)



The figure above (Figure no.2) illustrates the fact that the majority of respondents in the sample are aged between 40-50 years, which suggests that they are PFA with experience, familiar with the evolution of information technology in the accounting activity and who show a real interest in the challenges and opportunities of the digitization of the accounting profession. The same is the case with respondents aged between 30-40 years, but they also have the advantage of youth, motivation and increased appetite for knowing everything that digital and fiscal transformation means. As for people over 50 years old, we notice that they also showed a real interest in our research, the motivation for choosing to answer the questionnaire in their case being the concern expressed regarding the subject of the digitization of the accounting profession and the tax system, as well as the desire to adapt to new market requirements in digital and accounting

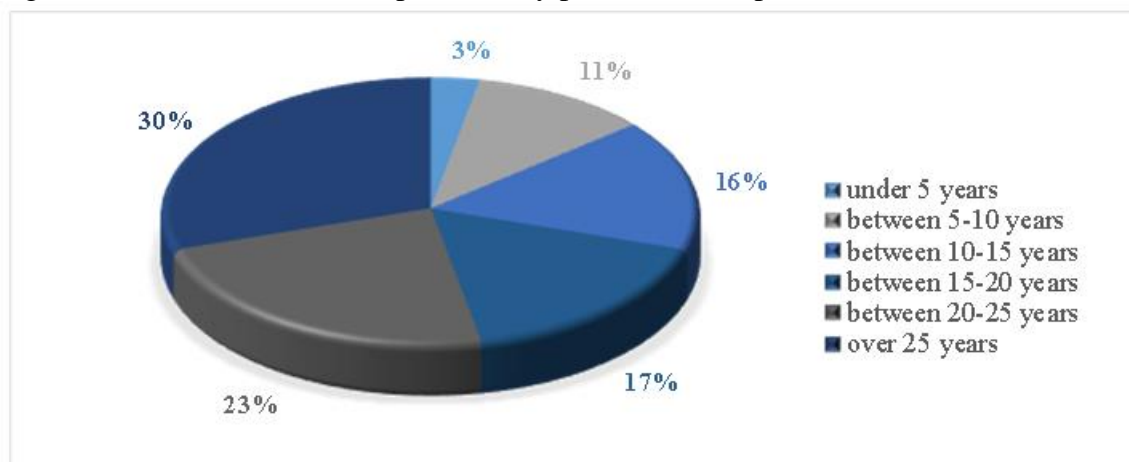
matters. Regarding the competences of the PFA surveyed and their distribution by gender, we identified the following structure, which we have centralized in the table below (Table no.3).

Table no. 3. Distribution of respondents by professional competence and gender

<i>The professional competence of the respondents in this case</i>	<i>Total number from which (persons)</i>	<i>Women (persons)</i>	<i>Men (person)</i>
Accounting experts (CECCAR members)	111	75	36
Certified accountants (CECCAR members)	63	39	24
Tax consultants (CCF members)	18	4	14
Financial analysts (CAFR members)	12	2	10
Total	204	120	84

From the table above (Table no. 3) expressed in absolute values, we can see the following: the professional competence of the sample is mainly made up of accounting experts and certified accountants members of CECCAR, and in terms of their gender, the majority of respondents are female, which can be explained in terms of different gender characteristics, for example women are much more attentive and meticulous to the phenomena that take place around them and especially their career. Among the questions regarding the respondents' characteristics, it was relevant to include data regarding their professional experience. Thus, the answers to the question related to the professional experience of PFA are centralized in the figure below (Figure no. 3).

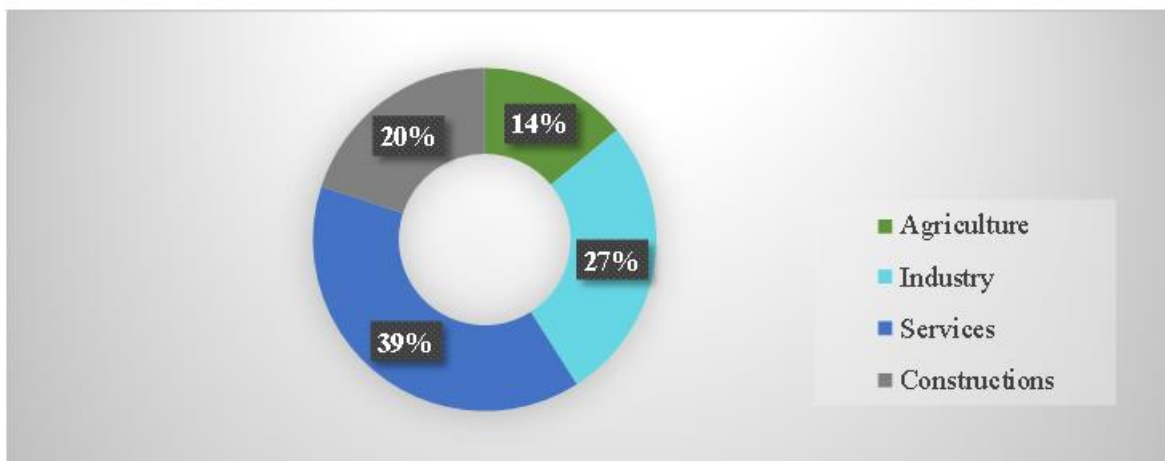
Figure no. 3 Distribution of respondents by professional experience (%)



Analyzing the figure above (Figure no. 3) we find that the majority of professional respondents in the field of finance and accounting have a consistent professional experience moderately between 10-15 years, respectively more than 25 years at most, which helps us in our approach to research, because they are familiar with the concepts presented, understand their correct meaning and can offer, based on the experience gained over the years, an overall and comparative view of the evolution of the accounting profession and how it has been digitized over time.

In carrying out our study, we were also concerned with the areas of activity of the clients for which PFA carry out their specific activities, and these are presented in the figure below (Figure no. 4).

Figure no. 4 Distribution of PFA by the fields of activity in which their clients act (%)

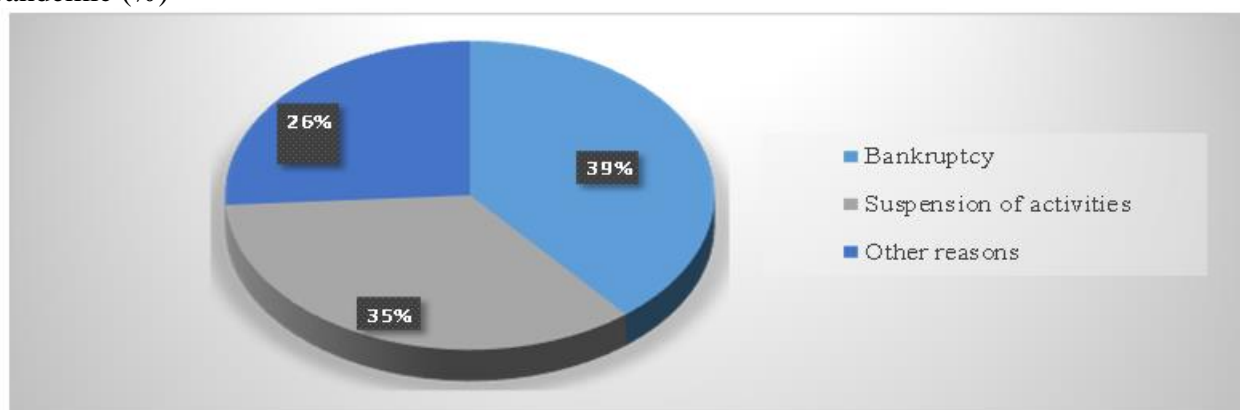


From the figure above (Figure no. 4), we find that the majority of PFA work in the service sector (ie 39%), followed by the industry sector in proportion to 27% and construction in a percentage of 20%. This distribution can be explained by the fact that most PFA in Romania are active in the economy through accounting offices, which is why companies in the service sector are much more chosen by them, from the perspective of the workload. Another explanation can be given by the rapid development registered in recent years in the field of services in the economy.

Since the COVID-19 pandemic affected everyone, including professional accountants, in our study we also asked the question about keeping their clients during the epidemic, and the answers we received showed that: 59% of clients were retained and 41% of customers were not retained.

Of course, we also asked for details about the reasons for not keeping clients, and based on the answers we received, we concluded that the Covid-19 pandemic had quite serious repercussions on the activity of PFA, because many of their clients suspended their activity, others went through the bankruptcy procedure or other various reasons (for example: internal personnel changes at the level of economic companies). The reasons for non-retention/loss of clients by PFA are shown in the figure below (Figure no. 5).

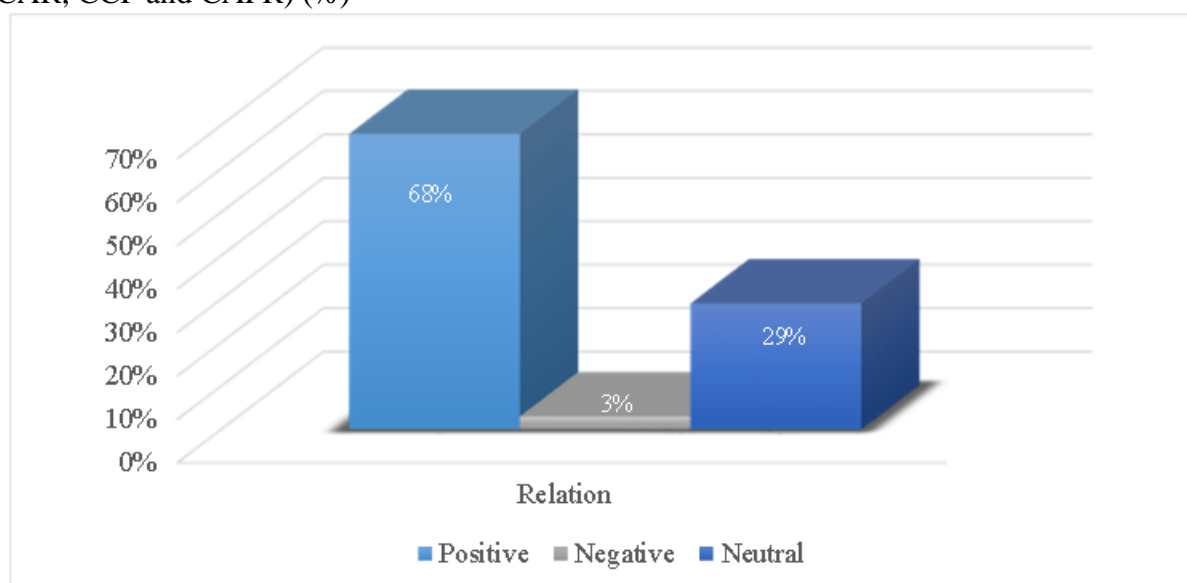
Figure no. 5. Reasons for non-retention/loss of clients by PFA during the COVID-19 pandemic (%)



In conclusion, the Covid-19 pandemic has restricted the activity of PFA, affecting them financially by reducing income, due to the loss of clients. Since Romania, as a member of the EU, can benefit from non-reimbursable European funds, and legal entities have applied for such funds, along with those from government subsidies, we wanted to track the extent to which PFA were

involved in such programs. Following the answers received, we conclude that: 83.06% gave affirmative answers and 16.94% gave negative answers. We notice that during this period the majority of accounting professionals got involved in financing projects from European funds and/or government financing, both for their own business and for their clients. The percentage of 16.94% as a negative response of PFA was justified by them by the desire of accounting experts and/or authorized accountants to leave involvement in financing projects and government financing to specialized consulting firms, guiding clients to the services of these companies. Regarding the relationship with the state authorities and with the professional bodies (with the CECCAR branches in the 3 counties, with the CCF and with the CAFR) professional accountants had interesting answers, reproduced in the figure below (Figure no. 6).

Figure no. 6 The relationship of PFA with state authorities and professional bodies (CECCAR, CCF and CAFR) (%)



The majority of PFA had a positive reaction to the question regarding the relationship with state authorities and professional bodies (CECCAR, CCF and CAFR). 68% of accounting professionals described that they have a positive relationship, while 29% positioned this relationship as neutral, and 3% as negative. Mainly the relationship of professional accountants with state authorities and professional bodies was achieved through:

- work meetings/online discussions, congresses, conferences;
- meetings with ANAF representatives, Chamber of Labor, City Hall- Direction of Taxes and Fees;
- continuous improvement courses on the desired research subjects and themes;
- guides published on the websites of professional bodies and ANAF;
- online discussion forums with answers to experts' questions;
- CECCAR project with European funds for the practice of accounting, accounting expertise and auditing (through which the practice tutors were paid, free courses for students and master's students enrolled in the project, prizes awarded to students and master's students on the occasion of their employment at practice firms of CECCAR member tutors).

We also wanted to determine and track the degree of involvement of PFA in the relationship with the academic environment in Romania, and we obtained the following results for this question:

- 82% - Yes;
- 2.5% - No;
- 15.5% - I can't pronounce.

The people who could not speak were those employed in large companies, and maintaining

a connection with the academic environment did not depend on them. However, 82% of the participants in this questionnaire answered affirmatively, and the relationship of financial professionals with the academic environment took place through:

- various meetings and discussions with teaching staff regarding the curriculum of the disciplines in the accounting profession in general, accounting practice in particular;
- concluding collaboration contracts with higher education institutions to support the practice of future economists, granting private scholarships, paid internships, joint projects with European funds.

These were some general questions outlining the personal profile of the respondents, their connection with the state authorities, professional bodies and the academic environment.

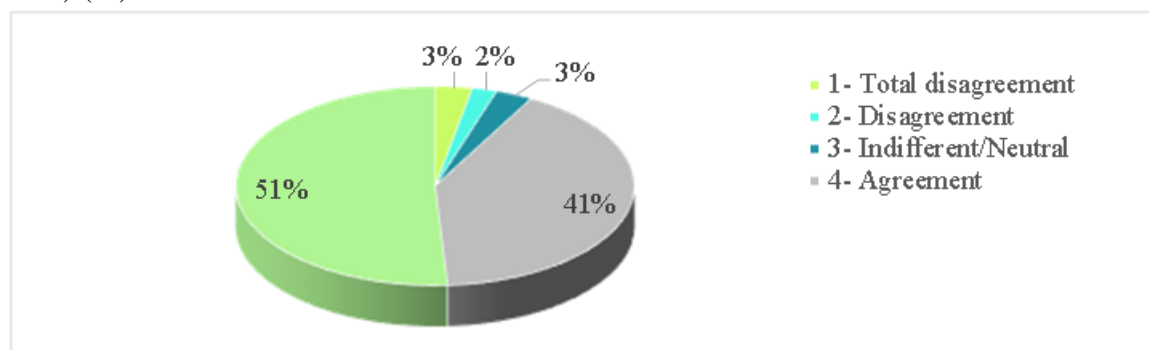
B. The actual running of the questionnaire

In this part of the case study we will present the questions, the results and the interpretations of the statements that follow the main topic of the paper, namely the perception of PFA regarding the digitization of the intensive accounting and tax activity occurring at the national level. On each statement/question we asked professional accountants from the sample to express their agreement or disagreement according to a scale with multiple answers.

Question no.1: Do you consider that the frequent legislative changes before, during and after the COVID-19 pandemic (especially those related to the digitization of the profession) have negatively influenced your work, emphasizing an increased responsibility, in all aspects?

The answers to this first question are reproduced in the figure below (Figure no. 7).

Figure no. 6. The perception of PFA regarding the impact of legislative changes before, during and after the Covid-19 pandemic (especially those related to the digitization of the profession) (%)



As the figure above (Figure no. 7) also illustrates, we notice that most respondents agreed that frequent legislative changes, especially during the COVID-19 pandemic (especially those related to the digitization of the profession), affected their work in a significant way, because 51 % strongly expressed their opinion by totally agreeing, and 41% by agreeing with the given statement. There were also respondents who did not feel the frequent legislative changes as threatening to their work, this being reflected in the lower percentages for the variants total disagreement (3%) and disagreement (2%). And a percentage of 3% of the respondents were neutral from this point of view. Regarding this neutrality, we believe that it could translate into the idea that the COVID-19 pandemic and the frequent legislative changes during it, were not more pronounced compared to the frequency of changes in legislation before the pandemic and with which professional accountants are faced normally. Overall, the results obtained for this item clearly suggest a slowdown or a blockage in the activities of PFA, because it is difficult for them to keep up and adapt to the increasingly frequent legislative changes, and the COVID- 19

accentuated this phenomenon (appreciated by many specialists in the field as a factor of influence with negative consequences on the practice of the profession).

Question no.2: What is your opinion regarding the actual costs estimated to be incurred for the robotization of the information programs at your disposal, as well as the acquisition and/or improvement of your technical skills, under the conditions of ensured cyber security and compliance with the GDPR (General Data Protection Regulation)?

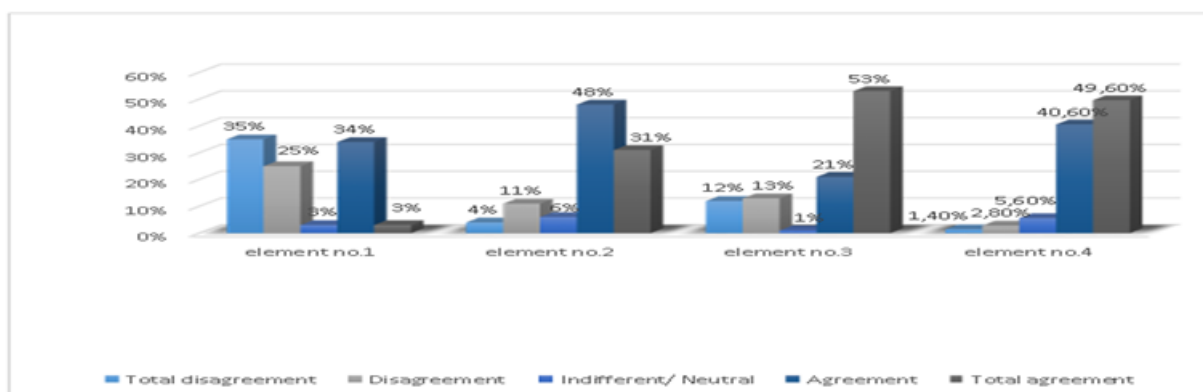
In order to understand the answers given to question no. 2, it is necessary to specify concretely what are the elements considered in this case - these are shown in the table below, Table no.4:

Table no. 4. The elements that make up the estimated actual expenses variable for the robotization of informative programs and the acquisition/improvement of the technical skills of accounting professionals (%)

Current number	Elements	Answer options				
		1- Total disagreement	2 - Disagreement	3 - Indifferent/Neutral	4 - Agreement	5 - Total agreement
1.	The costs of robotization are too high, and the current income does not allow me to achieve them.	35,00%	25,00%	3,00%	34,00%	3,00%
2.	The professional courses for improving advanced IT knowledge, carried out with no. raised by participants at acceptable costs	4,00%	11,00%	6,00%	48,00%	31,00%
3.	Professional courses carried out together with other professionals (e.g.: computer scientists, lawyers, etc.) offered as a package with robot programs, at promotional prices	12,00%	13,00%	1,00%	21,00%	53,00%
4.	Cyber security and data privacy (in the case of Big Data, Cloud Accounting and others).	1,40%	2,80%	5,60%	40,60%	49,60%

In order to reproduce and interpret the obtained results, we made the figure below (Figure no.8):

Figure no. 8. The elements that make up the estimated actual expenses variable for the robotization of information programs and the acquisition/improvement of the technical skills of PFA (%)



Regarding element no. 1 entitled "the cost of robotization is too high and the current income does not allow me to achieve it", opinions were divided. We observe that 35% of respondents *totally agree*, and 25% simply *disagree*. This can be interpreted from the perspective of the fact that the robotization of informational programs would not represent an excessively high expense for them, and the revenues are sufficient for the investment in this action, since this is a necessity to ensure the activities are carried out in the best possible conditions, based on the knowledge of new technological changes that occur. This is why, for these professionals, the income is enough. However, there were also professionals who were firmly convinced that the robotization of informational programs in the current conditions, where their incomes did not rise to the desired level, is not a good solution, and they *agreed* with our statement in proportion to 34% (along with *totally agree* in the proportion of 3%). Other respondents, in a rather very small percentage (3%) preferred to be somewhere in the middle by adopting a *neutral/indifferent* position, which means that for them expenses are not necessarily a problem, but the percentage that would represent the process of robotization itself.

Regarding element no. 2 which refers to the participation in "professional courses to improve advanced IT knowledge, held with a large number of participants at acceptable costs", the majority of respondents *agreed* (48%), respectively 31% *totally agreed* that this component of estimated expenses to be carried out, to keep up with the digitization process, which has occurred at the level of the accounting profession. According to the respondents, these courses would allow them to acquire the news related to the implementation of new technologies in the financial-accounting activity, would allow them to obtain advanced digital skills, so that they can more easily adapt to the recently recorded accelerated rate of digitization. At the same time, this agreement expressed by respondents shows us the motivation and willingness of professionals to learn and adapt to the challenges generated by the automation of activities, something that can only make us happy. On the other hand, there are also respondents who *disagreed* with the given statement (in proportion to 11%) and *totally disagreed* respectively (in proportion to 4%), because in their opinion, the courses will not help to adapt to the process of digitization, but the uncertainty regarding the automation of accounting processes will increase, and the acquisition of certain skills requires continuous professional training, which is why they appreciate that the level of expenses generated by the courses will continue to increase. However, 6% of the respondents adopted a *neutral* position, reasoning that not the expenses incurred by the courses or the acquisition of digital skills would be the problem for them, but the uncertainty regarding the quality of the courses and the online environment in which they take place (appreciated much more heavily than the physical presence at courses).

The responses received from professionals to the 3rd element regarding participation in "professional courses held together with other professionals (eg: computer scientists, lawyers, etc.) offered as a package with robot programs, at promotional prices" are interesting. They highlight the fact that the

majority of professionals *totally agreed* (in proportion to 53% of the total) and/or *agreed* (in proportion to 21% of the total) to participating in such courses, which suggests that professionals are willing to learn new things, trying to gather information from other fields, in order to be able to apply them in various forms in their work (especially when it comes to the use of technologies, the interpretation of tax laws and the implementation of the acquired knowledge for the benefit of themselves and the economic entities they belong to). This is why, professionals appreciate that the promotional prices of these courses present an important advantage for them, especially since they take place alongside computer scientists, lawyers, etc. with whom I can exchange opinions and interesting ideas. But, 13% of the respondents expressed their *disagreement*, together with 12% who were in *total disagreement* regarding this element, based on the motivations related to the lack of time, the lack of desire to invest in such courses, respectively the lack of financial possibilities such as and the uncertainty about the effectiveness of the courses, which cannot be measured correctly, if they are part of a promotional package of multiple services. Only 1% of the participants in the questionnaire expressed their *neutral* opinion towards element no. 3, motivating the fact that they agree that technical progress in any field brings news and that these must be known to everyone who wants to work efficiently on the labor market.

The last element no. 4 regarding "cyber security and data privacy (in the case of cloud accounting, big data and others)" we consider to be one of the most important aspects, which aroused interest and attracted a lot of favorable responses. The majority of respondents strongly agreed (49.6%) and agreed (40.6%), considering that any expense incurred in investing in data cyber security and privacy is necessary, especially in a context such as the COVID-19 pandemic, which moved the activity of financial - accounting professionals online (an environment marked by uncertainty generated by identity and data theft by malicious individuals). But, low percentages were recorded in which professionals expressed their disagreement (2.8% of the total) and total disagreement with the given statement (1.4% of the total), while others preferred to take an indifferent attitude (5.6% of the total), perhaps due to skepticism, lack of interest or even lack of professional knowledge about what the use of big data and cloud computing technologies in accounting entails.

Question no. 3: What is your opinion regarding the stage of preparation of SMEs and micro-enterprises for the implementation of the new and increasingly sophisticated technological trends in the financial and accounting field and the favorable consequences of these applications on specific managerial decisions?

In order to understand the answers given to question no. 3, it is necessary to specify concretely what are the elements considered in this case - these are shown in the table below, Table no.5:

Table no. 5 The assessment of PFA regarding the implementation of new technological trends at the level of economic entities and the favorable implications on specific managerial decisions (%)

Current number	Elements	Answer options				
		1- Total disagreement	2 - Disagreement	3 - Indifferent/ Neutral	4 - Agreement	5 - Total agreement
1	Do you appreciate that SMEs and micro enterprises in Romania are ready for the implementation of Big Data, Cloud Accounting and other technologies?	32%	39%	0%	18%	11%
2	Do you appreciate that these trends expressed	9%	13%	4%	46%	28%

	in point (5.1) above have favorable implications on the specific managerial decisions taken at the level of economic entities?						
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Based on the responses received to the above items, we conclude the following:

- regarding the first element of question no. 3 from Table no. 5, the majority of respondents indicated a total disagreement (32% of the total), and a simple disagreement (39% of the total), which does not determine us to appreciate the fact that professionals consider that SMEs and micro-enterprises in Romania are not ready for the implementation of sophisticated technologies such as Big Data, Cloud Accounting and others, at the level of financial and accounting departments, as they do not have the necessary infrastructure, due to the lack of investments in infrastructure (they believe that the introduction these technologies and personnel training are difficult, expensive and time-consuming actions).

There are also authorized natural persons who believe that some of these types of companies would be ready for the implementation of new technologies, showing agreement (18% of the total) and total agreement (11% of the total) from the point of view of the desire to implement know-how in order to obtain correct and compact data and to facilitate the realization of complex activities (which involve a very large volume of data).

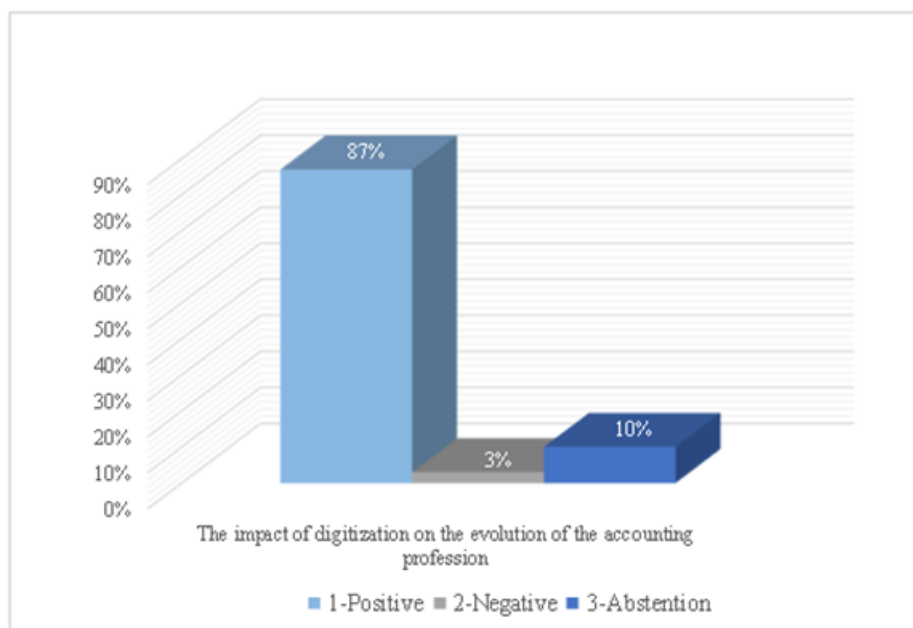
- regarding the 2nd element of question no. 3 from Table no. 5, the majority of professionals agreed (46% of the total) and totally agreed (28% of the total).

The motivation behind these favorable opinions lies in the fact that, in order to provide effective and quality information to management, professionals call on the advantages of using information technologies that help to simplify the processes of legal entities with a large volume of data, thus offering new approaches adapted to the external dynamics of the economic, political and social environment. Economic reality has demonstrated that a company's competitiveness on the market requires modern technologies. However, there were respondents who do not agree with this topic, expressing their disagreement in the proportion of 13%, precisely due to the assumption of a high level of the costs of implementing these new technologies. In addition, these last professionals whose opinion we discuss, appreciate the fact that the simple data processed by a more sophisticated type of technology cannot support managerial decisions, if the financial accounting professional does not have the necessary skills and reasoning to use them for the benefit the company.

Question no. 4: How do you assess the impact of digitization on the evolution of the accounting profession, based on the implementation of new information technologies within CECCAR (and other professional bodies - CCF and CAFR)?

The answers received are highlighted in the figure below (Figure nr.9).

Figure no.9 The impact of digitization on the evolution of the accounting profession, as a result of the implementation of new information technologies within CECCAR (and other professional bodies - CCF and CAFR)



The majority of respondents (87% of the total) declared that the impact of digitization through the implementation of new information technologies within professional bodies was positively felt, because the introduction of new technologies generated the appearance and support of new professional training courses, the multiplication of meetings and debates online and/or face-to-face on financial-accounting topics between members and decision-makers (especially during the COVID-19 pandemic). However, 10% of respondents refrained from commenting on this topic, while 3% of professionals stated that the impact of digitization on the body was felt negatively, as they could not get in touch with professional bodies for personal reasons (most often health).

Question 5. How do you assess the way of action/response of professional bodies to the challenges and opportunities specific to the digital revolution (controversies, opportunities, etc.)?

The controversies and opportunities generated by the digitization of the profession refer to:

- under the influence of accounting information technology, the stage of recording past financial information has been surpassed and the phase has been entered in which the professional in the financial and accounting field manages complex financial and non-financial information, regarding the up-to-date situation of the company for which he works, foreshadowing the possibility of offering some anticipatory information → the final estimated result: under the impact of the globalization trends of the regulations in the field, as well as digitalization, appears the opportunity to diversify the services offered in the public interest, which will allow the inclusion in the accounting sphere of some elements that currently cannot be quantified monetarily (either by identifying alternative methods of quantification, or by presenting it in much more detail in the financial statements);

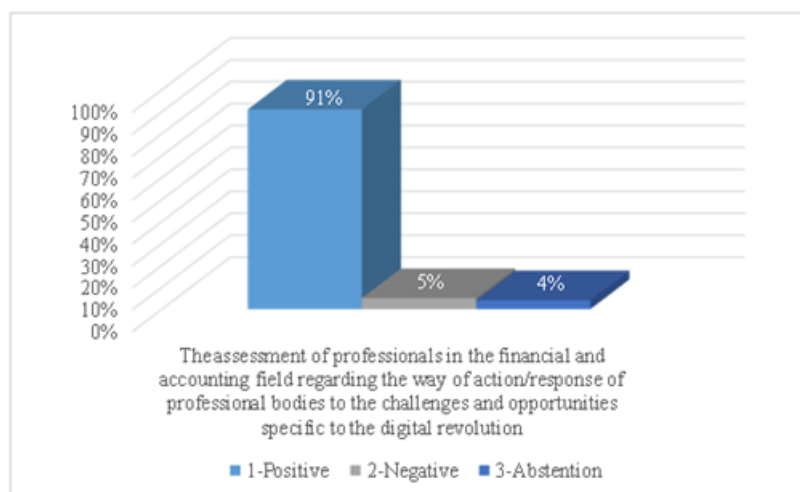
- the new information technologies will generate a decrease in jobs in the financial-accounting field, so that the professional no longer has to limit himself to the role of data operator, but, with the help of his economic knowledge, he has to demonstrate the applicable professional reasoning (with respect for ethics in the work carried out) → the estimated final result: the professional will become a visionary person, whose activity will focus more on providing financial and accounting consultancy, thus demonstrating his

skills in interpreting data processed with the help of high-performance computer programs (programs generated by the application of digitization);

- digitization in the accounting field (completed with the fiscal one) will generate the transposition of accounting data into a unique informational system, connected with reality, against the background of the creation of organizational models aimed at creating value and meeting the needs of the top strategic management → estimated final result: the informational system it will generate the improvement of companies' performances, increasing their characteristic competitiveness, against the backdrop of the transformation of accounting into the art that "ensures the success" of the companies that will implement the newest informational technologies.

We underline the fact that question no. 4 is totally different from question no. 5, because if the first refers to the introduction or not of the novelties generated by digitization at the level of professional bodies, the last one refers to the way of action of these bodies vis-à-vis these changes informational. These two activities of implementation and continuation of the application of legislative novelties were carried out by the professional bodies in order to help its members, who are permanently subject to these changes, being aware of the responsibility assumed in front of their clients and the accounting and fiscal control bodies. The centralized answers of the respondents (for question no.5) are highlighted in the figure below (Figure no.10).

Figure no.10 The assessment of PFA regarding the way of action/response of professional bodies to the challenges and opportunities specific to the digital revolution (%)



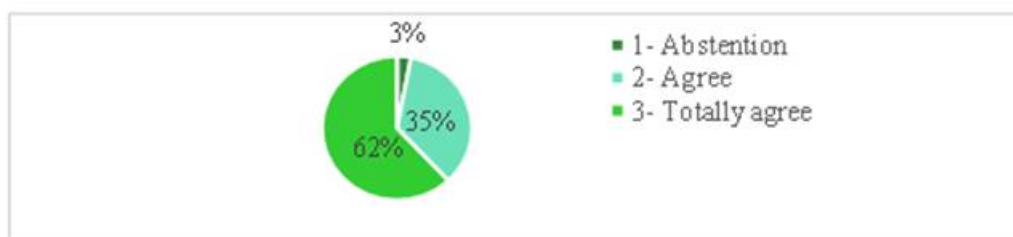
Most of the professionals surveyed (91%) believe that the professional bodies (CECCAR, CCF and CAFR) have responded and continue to respond positively to the aspects assumed by the digital revolution at the level of the accounting profession, alongside the fiscal one. For them, the professional bodies represented a real help through the guidelines posted before, during and after the pandemic period, the close connection they tried to maintain with their members through technology (online discussions through specific platforms, question and answer forums to various accounting problems, presenting the latest legislative changes and initiating discussions based on them). Also, many of the 91% of PFA respondents emphasized the need to apply the blended learning method in the continuous improvement courses run by the professional bodies, because it combines the classic learning method with the online training methods. Thus, they will have the opportunity to discuss face-to-face, together with the training lecturers, certain problems they face in their work. There were also respondents who preferred to refrain from issuing a favorable or negative opinion on this question (4% of the total), but there were also respondents (5% of the total) who considered that professional bodies still have to do improvements in reactions to the positive or negative aspects brought to the profession by the digital revolution. This last

answer can be taken into account when it is observed that the digital revolution brings with it a general state of uncertainty, which is why it can be difficult for professional bodies to adopt a prompt response to the risks that digitization entails.

Question no.6: Do you think that accounting and IT education must undergo changes in the current context of the digital revolution and business globalization?

The centralized answers of the respondents are presented in the figure below (Figure no. 11).

Figure no. 11. The perception of PFA regarding the changes in accounting and IT education, in the context of the digital revolution and the globalization of business (%)

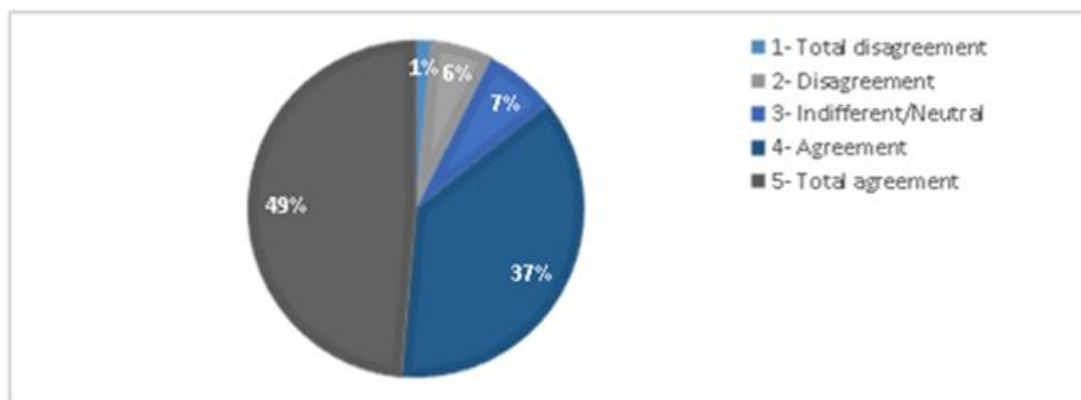


The results in the figure above (Figure no. 11) highlight the fact that the majority of respondents (62% of the total) totally agree and 35% agree with the statement that accounting education must undergo changes, especially in the context of the revolution digital and business globalization. This shows us the need for the accounting educational system in Romania to be reorganized to be able to keep up with the increasingly high expectations and demands that the external environment has from future economists. A small percentage of respondents (3%) refrained from giving an answer, due to their skepticism about the phenomena of globalization and digitalization. To this question, we asked the PFA to provide a recommendation regarding the modification of accounting education, which is why they proposed the introduction of courses for the development of technical skills and the use of new technologies such as: Creative reporting, international and national tax law with valences specifics of the digital economy, Integrated systems: Cloud accounting and Big Data, etc. What was also proposed referred to the alternation of theoretical and practical university education (one month of theoretical teaching and one month of practical teaching through internships paid to students, based on collaborations between the academic environment and companies in the field).

Question no.7: Do you appreciate that the digitization of accounting education and continuous professional training will generate an improvement in the quality of the educational process, based on the reduction of costs and the time allocated to the documentation activity?

The centralized answers of the respondents are presented in the figure below (Figure no. 12).

Figure 12. Appreciation of the digitization of accounting education and continuing professional training as a factor that determines the improvement of the quality of the educational process from the perspective of costs and time allocated to documentation (%)

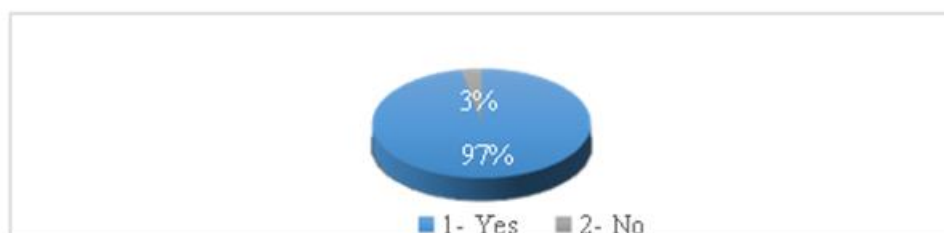


From the figure above (Figure no. 12) we notice that the majority of respondents agree (49%) and totally agree (37%) with the idea that the digitization of accounting education will determine the improvement of the educational process from the perspective of costs and time allocated to documentation. This was demonstrated by the pandemic period in which most of the courses were carried out online, the cost of rent and transport was saved, but the search time for the materials needed for the study increased, by accessing the digital catalog of the university libraries. However, there are also respondents (7% of the total) who refrained from commenting on this topic, as well as respondents (6% of the total) who disagreed with the given statement. For the latter, the digitization of education brings difficulties, the traditional method (physical presence in classes and materials in paper format) turns out to be a much better learning method, despite the high costs.

Question no.8: Do you consider it necessary to permanently improve the professional knowledge of employees in the field of accounting and/or accounting expertise and/or audit and/or IT (so that they maintain their competitiveness at work)?

The centralized answers of the respondents are presented in the figure below (Figure no. 13).

Figure no. 13: The need for continuous improvement of PFA knowledge in the field of accounting and/or accounting expertise and/or auditing and/or IT (%)

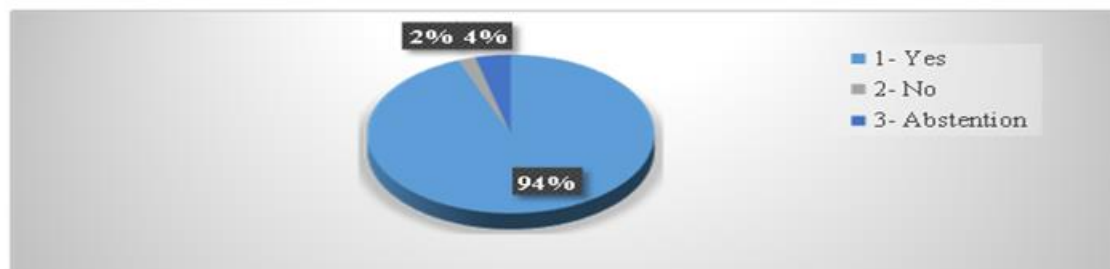


The figure above (Figure no. 13) clearly illustrates the firm response of the PFA, i.e. 97% of them believe that the permanent improvement of professional knowledge has now become an imperative requirement to maintain relevance and remain competitive, not just in the workplace, but in the economy as a whole.

Question no.9: Do you consider it necessary to periodically evaluate the practical skills (owned by the PFA) through the continuing professional training programs offered by Professional bodies?

The centralized answers of the respondents are presented in the figure below (Figure no. 14).

Figure no.14 The need to assess PFA practical skills through continuing professional training programs

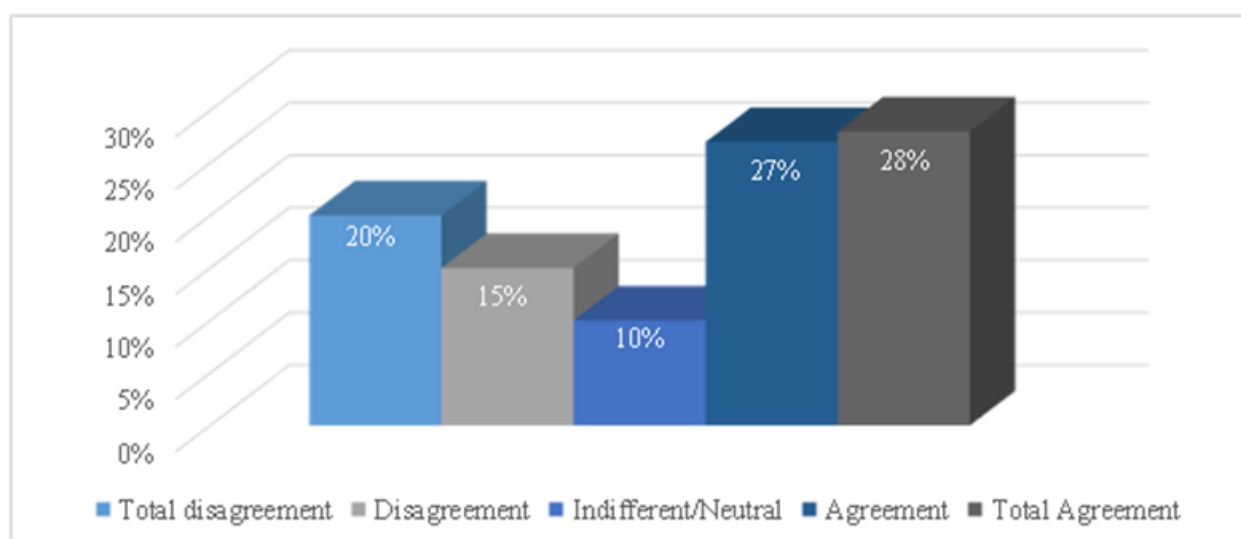


The results in the figure above (Figure no. 14) indicate that the majority of PFA (94%) consider that the periodic assessment of practical skills through continuous development programs offered by professional bodies is necessary. However, 2% of respondents believe that the assessment of practical skills will make no difference, and 4% of them refrained from expressing an opinion. However, we appreciate the fact that the evaluation of each PFA allows the awareness of gaps or lacks of professional knowledge and/or the future improvement of existing ones through continuous learning.

Question no.10: Do you appreciate that some of the competences held by the PFA (e.g. the preparation of supporting documents, tax returns, annual tax statements, files for obtaining bank loans, files for the lease purchase of tangible assets, projects on European funds, etc.) will no longer be relevant in the near future, as a result of the digitization of the accounting profession?

The centralized answers of the respondents are presented in the figure below (Figure no. 15).

Figure no. 15. Maintaining the relevance of the skills held by the PFA in the future, as a result of the digitization of the profession (%)



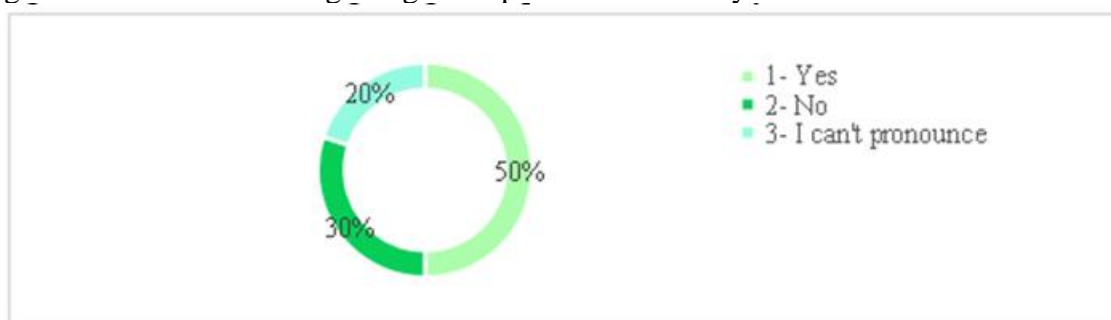
The answers given in the figure above (Figure no. 15) show us the controversies raised by this question among the respondents. The centralized results in the figure show us that the majority of PFAs

strongly agree (28%) and agree (27%) with the fact that, job-specific skills (e.g. the preparation of supporting documents, tax returns, annual tax statements, files for obtaining bank loans, files for the lease purchase of tangible assets, projects on European funds, etc.) will disappear in the future as a result of the implementation of artificial intelligence in accounting programs. There are also respondents who do not agree with this item (20% totally disagree, 15% disagree) because they believe that in addition to these practical skills, PFAs possess something that artificial intelligence will not be able to replace, namely professional reasoning. 10% of the respondents were neutral in expressing the answer, because the disappearance of PFA skills in the future is an uncertain matter.

Question no.11: Do you think that the responsibility of the PFA (in the case of controls carried out by tax inspection bodies or others with control powers) will be affected in the near future by the digital revolution and the globalization of business?

The centralized answers of the respondents are presented in the figure below (Figure no. 16).

Figure no.16 Assessments regarding the impact of PFA liability in the case of fiscal controls

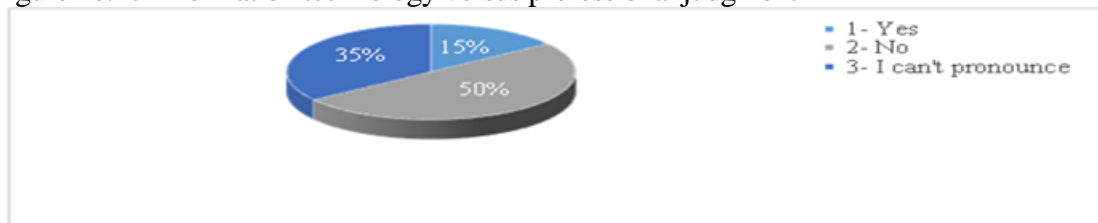


From the figure above (Figure no.15), it can be seen that half of the PFAs subject to research (50%) believe that the digital revolution will affect their liability to the control bodies, which is why they expect their liability to decrease with the implementation of artificial intelligence, at the level of accounting programs. However, a percentage of 30% of respondents gave the answer "no", which they justify by the state of fear and uncertainty, brought by the digital revolution, considering that their liability and responsibility will increase and have negative effects (in the case of some mistakes maybe imperceptible to them in automatic data processing). So, it is correctly assessed that it is not the program that will be held responsible for the first time, but the accountant. A significant percentage of 20% of the respondents answered that they cannot pronounce, as they are not sure that their liability and responsibility before the control bodies will change in the future.

Question no.12: Do you think that professional reasoning, which is the foundation of accounting policies, can be replaced by information technology?

The centralized answers of the respondents are presented in the figure below (Figure no. 17).

Figure no.17 Information technology versus professional judgment



From the figure above (Figure no. 17) half of the surveyed PFAs (50% of the total) categorically stated that negative, since human reason and the way of posing problems is the main characteristic that distinguishes them from IT programs and technologies. But 35% of PFA respondents fear that in the future this could be possible, given the unprecedented development of informational intelligence. However, 15% of the surveyed PFAs were in a neutral position, because the future is uncertain and it is not possible to know exactly what the evolution of the accounting profession will be.

5. Conclusions

Nowadays, the updating of the accounting profession allows accounting to ensure the success of the registration and analysis of the economic activity of companies, only if the professional in the financial accounting field knows how to use the new information technologies.

The majority of PFA from the counties of Cluj-Napoca, Bistrița-Năsăud and Satu-Mare supported the fact that developments in the field of information technology and digitization enable the prerequisites for updating and changing the accounting profession. These changes require the permanent improvement of the specialist's professional knowledge in this field, in order to remain competitive at work. The skills of using advanced digital technologies have become indispensable for professionals in the financial and accounting field who are aware of their importance and benefits, which are materialized in cost reduction and work time efficiency.

Against the background of frequent legislative changes that make the work of professionals more difficult, however, the surveyed specialists appreciated that the change in accounting education was positively appreciated, because the new requirements imposed by the implementation of technology in the field must be known. Here's why, the people surveyed appreciated that in professional schools and in the training courses provided by professional bodies, more emphasis must be placed on the information technology side in the field of accounting.

Through the process of implementing new information technologies in the field of accounting, part of the manual activities performed by specialists are taken over by the computer programs used in companies, which is why they must continuously improve their skills in IT, to support their clients with relevant analytics to help them increase their profitability.

In the continuous work of learning, professionals are supported by the professional bodies of which they are a part. However, regardless of the changes generated by the digitization of the profession, the professionals in the financial and accounting field emphasized in the responses that the professional reasoning will not be affected, given their responsibility and increasingly important role in society.

Based on the responses to the questionnaire questions, we conclude that the first and third hypotheses were validated, but the second hypothesis was invalidated.

The answers received were presented schematically in the conclusions above, but the results obtained from the research carried out allow us to conclude with the following important ideas, related to the subject analyzed in this article:

- the level of digitization of the economic environment influences the accounting profession, but information technology cannot replace professional judgment;
- responsible and ethical work governs the work of PFA in Romania;
- the future of PFA in Romania exists only if they will be able to face in real time the challenges and opportunities generated by the digital revolution.

The digitization of the accounting profession is also strongly influenced by the fiscal one. Fiscal digitization in Romania directly affects the work of the PFA, but the influencing factors, consequences and the perception of specialists in this field will be analyzed in another article of ours, in the future.

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