

**MINISTRY OF EDUCATION  
UNIVERSITY "1 DECEMBER 1918" OF ALBA IULIA  
DOCTORAL SCHOOL OF ACCOUNTING**

**SUMMARY OF THE DOCTORAL  
THESIS**

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UNIVERSITY "1 DECEMBER 1918" OF ALBA IULIA  
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**PARADIGMS AND ORIENTATIONS  
OF ACCOUNTING  
IN PRE-UNIVERSITY EDUCATION**

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**Accounting**

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## ABSTRACT

Reflecting on the evolving nature of accounting, this research is an analytical and synthetic investigation of the approach to pre-university accounting education under the pressures of the emergence of new accounting paradigms, the evolution of the accounting profession and the disruptive changes in the economic environment. Therefore, the aim of the research is to improve the explanatory power of the theoretical models used in pre-university accounting education, by investigating the new paradigms of accounting, the new directions and orientations of the accounting profession, using a holistic approach to the pre-university economic education environment and exploiting the feedback provided by accounting practice. The work is therefore descriptive, explanatory and comprehensive, and is constructed in the style of an investigative essay, based on bibliographical and legislative research, with a logical and reflective exposition of ideas, complemented by case studies.

The investigative itinerary has the following path: (I) presentation of the scientific, social and historical dimensions of accounting, by retracing the winding path of accounting science towards the new paradigms, from the perspective of the Khunian theory; (II) research of the new paradigms and orientations of accounting: Integrated thinking, digitalization, globalization, green accounting, strengthening resilience and developing business ethics; (III) analyzing the evolution of the accounting profession to ensure its sustainability and identifying future competences, called extended competences, which will allow a deep understanding of emerging topics; (IV) studying the implications of new paradigms and orientations of accounting on pre-university accounting education in Romania; (V) analyzing the sustainability of pre-university economic education, by creating a theoretical model to identify the sustainability profile of economic colleges in Romania.

Therefore, viewed from a pragmatic perspective, the research provides relevant data for possible interventions on how to organise accounting education in pre-university education, develop new curricula and establish the most effective learning strategies to assimilate the necessary skills, essential prerequisites for ensuring the sustainability of the accounting profession. The whole endeavour represents a step up in a broad research effort that looks at the implications of the new accounting paradigms for the transformation of the accounting profession and the reorganisation of pre-university accounting education.

## **KEYWORDS:**

- ✓ paradigm
- ✓ accounting theory
- ✓ accounting paradigms
- ✓ digitization
- ✓ integrated thinking
- ✓ accounting globalisation
- ✓ green accounting
- ✓ strengthening resilience and developing business ethics
- ✓ the accounting profession
- ✓ extended skills
- ✓ accounting education
- ✓ pre-university accounting education
- ✓ education for sustainability
- ✓ sustainability accounting education
- ✓ sustainability profile of business colleges

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## RESEARCH OVERVIEW

### **Motto:**

*"Where a paradigm can no longer respond to an intrinsic logical criterion, it enters a crisis in the form of a crisis of theory. That theory can no longer be in agreement with itself and with the meaning of a given empirical fact, so that it either denies itself in order to agree with empirical novelty, or it ignores reality and thus loses its character of scientific theory, it becomes mere ideology. The crisis can only be overcome by the intervention of another theory, i.e. another way of solving the problem than the established one, which leads to the salvation of the theory, through its reconstruction." (Bădescu, 2002)*

The accountant of the future is expected to be a modern, flexible, IT and marketing-savvy figure, adaptable to the ever-changing emerging business environment. We believe, therefore, that the paradigm shift and change of orientation in the field of accounting and the accounting profession must begin with the first steps in the professional training of the future accountant, i.e. from the first years of economic high school.

Education is rightly considered the foundation of development. The changes in pre-university education in our country, as indeed throughout the world, have been both manifold and radical. Under the impact of major labour market trends, shaped by the complex process of globalisation, these changes have a continuity that has already become a constant. In addition, the society in which we live today, an information and knowledge society, generates an increase in the complexity of life and amplifies the process of permanent improvement of each actor involved in economic and social activities, a process whose success also depends on the quality of education (Ristea and Ioan-Franc, 2013).

The integration of Romanian pre-university education into the "European area", but also the confrontation with globalisation, increases the pressure of competitive forces on an increasingly large "market" such as the education market. In addition to this external dimension, there is the internal dimension of the quality of pre-university education, which is the responsibility of each education provider. From this perspective, the major challenge facing pre-university education institutions is the constant change and diversification of requirements, and the aim of modern pre-university education is to train specialists, not only through the passive

consumption of specialist literature, but also through direct contact with innovation and scientific creation, in an appropriate communication framework.

In the modern, knowledge-based society, education in general and accounting education in particular helps to shape a specific way of thinking and acting, to develop analytical and problem-solving skills and to adapt to the national and international economic environment. However, in a constantly evolving society, the demands on the level of individual training are dynamic. The gap between the training of graduates available for the labour market and the real requirements of employers in terms of knowledge, skills and abilities is the 'keystone' of all our specialised education (Istudor, 2013). We rightly ask the question 'How useful is the knowledge taught in pre-university and then university education for a constantly dynamic European labour market?' It is imperative that pre-university economic/accountancy education be brought into line with contemporary trends in the globalisation of the economy, accounting services and the labour market. The accounting curriculum is anchored (perhaps not enough) to the Romanian economic reality, which is referred to in the thematic approach, but, more often than not, it has difficulty keeping up with the changes in global economic and social realities. Therefore, a modernisation, indeed a redefinition, of pre-university accounting education is naturally required. *The symbiosis between academic research*, on the one hand, and *the promotion of a dynamic accounting education* that aims at guiding students to enhance their creative skills, personal development, stimulating critical thinking, analysis and synthesis capacity, while transmitting theoretical knowledge on the subject and method of accounting, on the other hand, would certainly position Romanian pre-university economic education at global standards.

The theoretical accounting support, through the models provided, often creates a *laboratory reality*, rarely encountered in the real economy. In this respect, we highlight a lack of infusion of information from the economic reality to the theoretical support (the textbook). As long as we believe that theory "works" as a valid framework for evaluating an economic and financial situation, without taking into account the natural (human) critical factor, we remain in an autonomous formation with respect to the new directions and orientations of accounting. But what happens when the model breaks down? What happens when traditional paradigms fail to provide legitimacy to the scientific discourse in accounting, when normative theories do not satisfy the criteria of 'scientificity' valid in any field considered scientific, and when accounting positivism, like any other positivist discourse in the social sciences, transforms accounting into

a deterministic social mechanics, devoid of any ethical purpose and therefore of the human perspective? (Ionaşcu, 2003). Throughout the research work, we will note that there is a life span of theories and, therefore, a replacement of theories at a certain interval of time, depending on the evolution of society and economy.

## **MOTIVATION FOR THE CHOICE OF THE RESEARCH TOPIC**

Structural changes in the sphere of information and communication technology, the globalization of business, the implementation of the concept of integrated thinking, are part of the new normality of the accounting profession, expressed from a double perspective: of the employee but also of the employer (Rebele & Pierre, 2019). In this way, the employer's expectations are required to be designed, on the one hand, within the learning programs of the educational institutions, so that they contribute to shaping the digital profile of the pupil/student in order to prepare for a strong labor market globalized and imprinted by digitization and modern technological tools (Duncan-Howell, 2012, p. 827), on the other hand, within the continuing education courses provided by professional bodies for current professionals. Technological changes, generated by the 4th industrial revolution and the perspective of Industry 5.0 that will require a new approach (Mitchell & Guile, 2021, p. 1), represent a central theme that outlines the identity of the accounting professional and, at the same time, generates a great challenge for accounting education. Changing the vision regarding the content and role of accounting education in pre-university education could have as its starting point the modification of the way in which economic education institutions manage, analyze and use data (Guşe & Mangiuc, 2022).

The main motivation for this research is based on the topicality of the topic studied and its importance in ensuring the relevance and resilience of the accounting profession in a global economy concerned with sustainable development.

The analysis of the current state of knowledge at the level of accounting research in Romania, but not only, indicates the existence of several studies on the perspectives of accounting, the accounting profession and accounting education, in the context of current transformations. For example: Şova & Popa, 2020; Arteaga et al., 2021; Alexander et al., 2019; Molina et al., 2021; Yaremenko et al., 2021, perform pertinent analyses on the impact of

digitization on accounting education; Tiron-Tudor, 2014; Lacurezeanu et al, 2020; Groşanu, 2020; Hunter, 2021; Prinsloo, 2020, highlight new dimensions and challenges of the accounting profession while Lungu, 2018; Wolff et al., 2017, Jora et al., 2020; Casarejos et al., 2017; Beuron et al., 2017; Weiß and Barth, 2019 and Fakir & Jusoh, 2020, highlight the implications of accounting for sustainable development. Therefore, our investigation adds to the palette of these concerns, and even offers a new perspective, in that we extend the scope of the research by analysing, on the one hand, the new paradigms of accounting and the profile of an accountant prepared to address them in the future, and on the other hand, the speed of response of pre-university accounting education to these new challenges. Reflecting on the changing economic environment, this research explores the context that is driving changes in the role of accountants in organisations and the implications this has for accounting education in secondary schools by establishing the skill sets of future accounting graduates.

Therefore, sustainable development based on economic, social and environmental objectives requires accounting that is oriented towards advanced technology and advanced forms of decision-making and accountability, in the context of integrated thinking and the globalisation of accounting standards. These new orientations, which are generating an accounting paradigm shift, are affecting the evolution of the accounting profession and determining its future. Educational institutions, through economic colleges and faculties of economics, together with professional organisations and their members, have to find viable solutions that respond to the major challenges facing the accounting profession.

## **RESEARCH STRUCTURE AND OBJECTIVES**

The aim of the research is to make an in-depth foray into the current evolution of accounting and to analyse and evaluate how new accounting guidelines and paradigms impact the field of accounting, how they transform the accounting profession and influence pre-university accounting education in Romania.

Therefore, our investigation is thus part of a descriptive, explanatory and comprehensive logic, being built according to the pattern of an investigative essay, based on bibliographical and legislative research, with logical and reflective exposition of ideas, complemented by case studies, through which we aimed to formulate answers to the following **research questions**:

*Q1. What are the new accounting orientations and paradigms affecting accounting theory and thinking and the accounting profession?*

*Q2. How is the accounting profession responding to current and future challenges?*

*Q3. What are the skills that shape the profile of a future-ready accountant?*

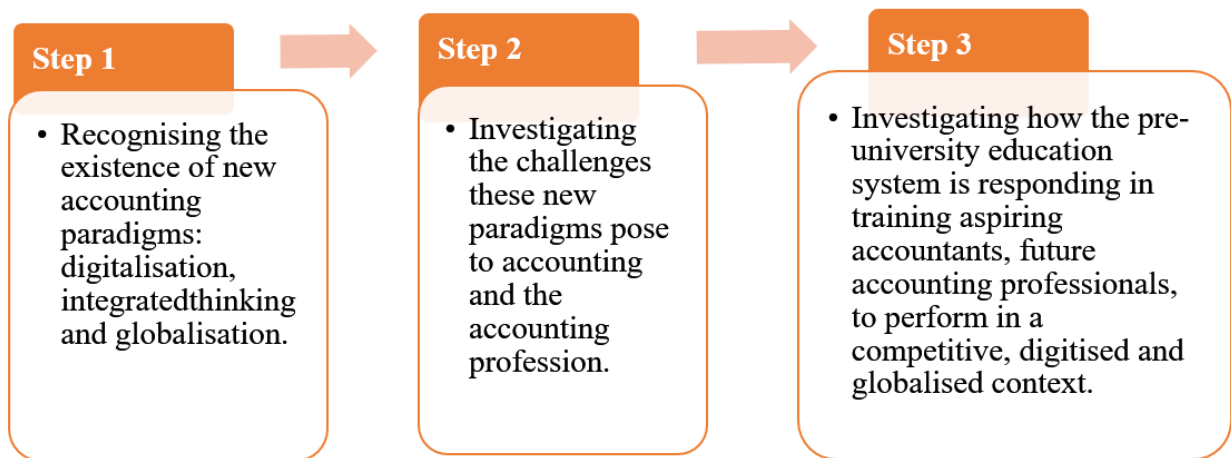
*Q4. To what extent are new accounting paradigms driving a change in approach to the skills that will support the mission and role of the accounting practitioner?*

*Q4. What is the "reaction" of undergraduate accounting education to the changes affecting the accounting profession?*

*Q5. What is the sustainability profile of Romanian business colleges?*

*Q6. Is there a correlation between the sustainability profile of Romanian business colleges and their performance as reflected in the results of the baccalaureate examination?*

Business schools, universities and professional bodies are equally responsible for training future and current accounting practitioners. We believe that this goal can be achieved in three steps, which will be followed in our investigative itinerary, as shown in the figure below:



**Figure 1** The investigative path of new accounting paradigms and their implications for the accounting profession  
*Source: own projection*

Throughout the paper accounting is seen as an intellectual "construction", as a form of representation of a reality. Like any form of rational human knowledge, it is considered a social phenomenon (Ionaşcu, 2003).

The following chapters develop the path of the doctoral research, from the presentation of the main theoretical concepts studied and the hypotheses tested with the help of the case study, to the application of methods, tools and interpretation of results.

*The fundamental hypothesis* of the work "*Paradigms and orientations of accounting in pre-university education*" is that only through an in-depth research of new paradigms and orientations of accounting, we can understand the evolution of the accounting profession and therefore improve the explanatory power of theoretical models used in pre-university accounting pedagogy.

In order to validate the hypothesis, the study develops along three main lines:

A. To present the scientific, social and historical dimensions of accounting by analysing, on the one hand, the effort of elaborating the scientific discourse in accounting, and on the other hand, the process of constructing a theoretical body of accounting that can be validated by observation or experimentation. The lack of consensus on a universally accepted theory, through the existence of a plurality of explanatory discourses in accounting, highlights the eclectic nature of accounting and the openness to evolution and progress of this science (Chapter 1).

B. Accounting research, whereby we aim to adapt accounting to new information needs, expand its scope, and above all advance accounting knowledge. It can be accepted that there can be one or many paradigms in a given field. The existence of paradigms in accounting confirms its status as a mature scientific discipline. The lack of uniqueness of scientific discourse should not call into question the scientific character of knowledge through accounting. This statement can also be argued by the fact that in the social sciences the uniqueness of scientific discourse is a rare thing, and accounting - as a field integrable into the social sciences - can be considered "a science with multiple paradigms". Since no single paradigm answers all the problems it defines, but opens up new perspectives for approaching them, we can ask ourselves what place accounting can occupy in a polymorphous social reality. It is obvious that the new economy needs new accounting management. At the same time, a new accounting order and new accounting directions are emerging. Research in accounting science highlights major changes not only in accounting science but also in the accounting profession, changes that need to be taken into account by professional bodies, universities and business colleges, the latter being the main promoters of initial accounting education. We believe that more attention needs to be paid to the teaching component in pre-university education, with the economic colleges being the real nursery for the faculties (Chapter 2 and Chapter 3).

C. Accounting education in pre-university education in Romania. In pre-university education, the accounting approach, as a study discipline as it appears in the curriculum, is

presented by some authors of school textbooks as a suite of accounting records, the highlighting of transactions following the chart of accounts. Through this approach, accounting is reduced to the condition of a simple technique for recording economic-financial operations, without an explanatory doctrinal support, dominated by fiscal rules in permanent change, and the aspects regarding the role of accounting information in decision-making is almost neglected. Thus, we naturally ask ourselves the following questions: *What character should accounting education take on in this sense? What is the ratio, which educational systems should promote, between accounting training with a general scientific character and training in a direct relationship with market needs, focused on a specific combination of skills corresponding to an occupational profile? In what contexts should training take place to deal authentically with the current and future challenges of society? How can we correlate the need for skills in the business environment with what the pre-university education system delivers?* These are just some of the questions that generate the framework for debate, analysis and research in chapters 4 and 5 of the paper.

The doctoral thesis comprises **5 chapters**, structured in **31 sub-chapters**, contains distinct sections **of keywords, the motivation and topicality of the research topic, objectives, research methodology and the structure of the paper**. Each chapter begins with a **preamble** and ends with **partial conclusions**. The final section presents the final **conclusions of the thesis, own contributions, limitations, perspectives of the research and the ways of disseminating the partial results of the research**. The thesis contains **59 tables, 59 figures** and a number of **423 bibliographic sources**.

The graphic representation of the research approach from the paper "Paradigms and orientations of accounting in pre-university education" is made in figure no. 2:

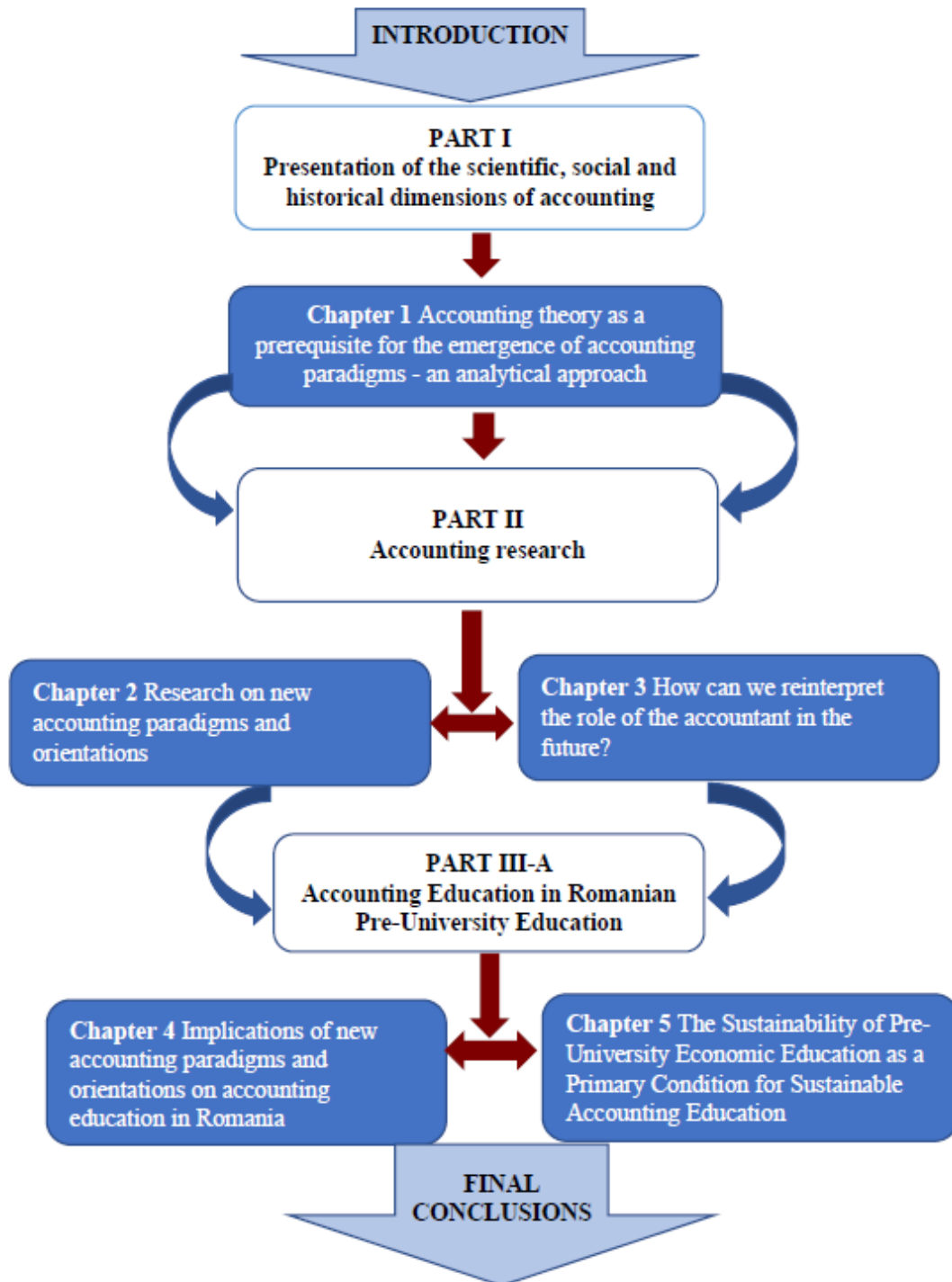


Figure no. 2 Graphic representation of the research approach  
Source: own projection

The general objective we pursue by completing the thesis "Paradigms and orientations of accounting in pre-university education" is to improve the explanatory power



of the theoretical models used in pre-university accounting education, by researching the new paradigms of accounting, the new directions and orientations of the accounting profession, appealing to a holistic approach to the contemporary economic environment and to capitalizing on the feedback provided by accounting practice.

In order to achieve this central objective, we propose the following **stage objectives**:

- ✓ Determining the progress elements of accounting and the modernization directions of accounting theory (chapter 1);
- ✓ Presentation of the emergence and historical evolution of commercial education in Romania and its influence on Romanian accounting culture and thinking (chapter 1);
- ✓ Identifying the new accounting paradigms that have emerged as a result of the emerging problems of the field and society and analyzing their impact on accounting theory, thought and practice (chapter 2);
- ✓ Researching the current challenges and opportunities of the accounting profession under the impact of new paradigms and accounting guidelines (chapter 3);
- ✓ Analysis of the skills needed to outline the profile of an accountant prepared for the new economic and social reality (chapter 3);
- ✓ Critical analysis of the implications that recent accounting paradigms have on pre-university accounting education in Romania (chapter 4);
- ✓ Researching the current situation of accounting education in pre-university education (chapter 5);
- ✓ Analysis of the financing mechanism of pre-university economic education units (chapter 5);
- ✓ Evaluation of the sustainability profile of economic colleges in the country, according to the adapted Deming's spiral model (chapter 5);
- ✓ Analysis of the correlation between the sustainability profile of economic colleges in Romania and their performance, reflected in the results of the baccalaureate exam (chapter 5).

In order to achieve these objectives, the research work is developed in 5 chapters as follows:

In chapter 1 "Accounting theory, premise of the emergence of accounting paradigms - an analytical approach", we analyzed the winding road of accounting science towards the new paradigms, from the perspective of Kuhnian theory, addressing the following aspects:

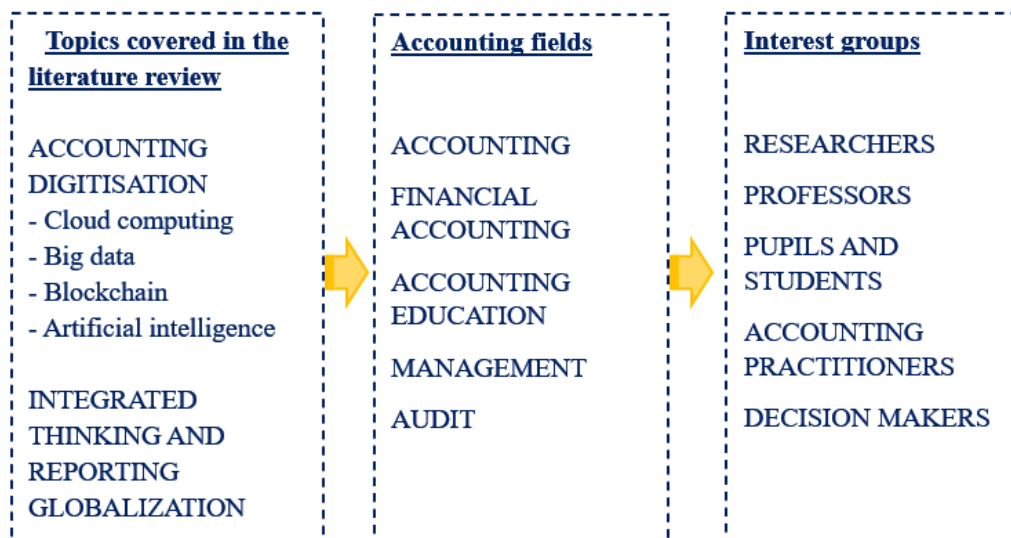
presentation of the main reflections and moments on the mechanism of the formation and evolution of accounting theory, making a brief history of the development of accounting science, highlighting the transformations undergone and the evolutionary quests, analyzing the phases of the maturation of accounting science and its periods of crisis.

In modern society, accounting cannot be analysed and understood in a fragmentary way, but as a whole and in its complexity, in the systemic and interdependent unity of its components. This requires an effective knowledge of economic reality, accounting thinking and people's understanding and perception. We can therefore say that the subject of accounting is historical in nature, in the sense that it is constantly undergoing quantitative and qualitative changes. The result of these stages in the maturing of economic and accounting thought is the set of principles and methods from which a generation of economists and accountants, a school of accountancy or a current of accounting thought, starts its research into reality, and for which the American professor Thomas S. Kuhn (1976) used the term paradigm. According to him, the paradigm is "the set of theories, techniques and values shared by the community of scientists, a matrix of science that provides the conceptual framework for research". In this chapter, without seeking to make an exhaustive analysis of accounting theory, we intend to present the main reflections and moments on the formation and evolution of accounting theory, against the background of economic-social, political-institutional and spiritual development, from ancient times to the present day. In addition, the development and evolution of commercial and later economic, pre-university education in Romania is analyzed. With the establishment of the first commercial schools, the germs of a proper accounting thought appear and the premises for the spreading of accounting knowledge and the development of a specialized literature are created. Through our approach, we have sought to identify the essence and logical coherence of what the theoretical landscape of accounting thought has meant throughout the various eras of human history. Therefore, approaches, ideas, theories and currents of accounting thought from antiquity to the present, both from an international and a national perspective, are analysed. Starting from the premise that in the evolution of science, ideas are transmitted through theories (Ionescu, 2006), we have paid particular attention to those ideas which, through their evolution and movement of "expansion-contraction" both in time, from one era to another, and in space, from one type of society to another, have given the character of paradigm to some theories. Consequently, once an idea crystallises in a generation or era, in the form of a current of thought promoted by a

scientific community, the theory acquires the value of a scientific paradigm. Throughout the paper we will note that there is a life span of theories (Bădescu, 2011), and depending on the evolution of the economy and changes in society, there is a replacement of old theories with current ones.

In Chapter 2 "Research on new paradigms and orientations of accounting", we have focused our research on the three main units of analysis: digitisation, integrated thinking and globalisation, which provide a complete and complex picture of the new accounting paradigm as a perspective for the sustainability of the accounting profession. This chapter also analyses other new accounting orientations such as green accounting, respectively, strengthening resilience and developing business ethics, which add to the picture of new challenges for accounting, the accounting profession and, by extension, accounting education.

Thus, we have set as an objective of this chapter, to conduct a structured literature review on the new paradigms and orientations of accounting in order to highlight how they are producing changes in the future evolution of the accounting profession, as shown in Figure no. 3:



**Figure no. 3** The architecture of the structured literature review of the new accounting paradigms  
Source: own design

This chapter therefore addresses the following research questions:

*Q1 How is research on new accounting paradigms and orientations developing?*

*Q2 What is the focus and critique of the literature on new accounting paradigms and orientations?*

*Q3 What is the future of research on new accounting paradigms?*

All the evolutionary changes in the economy and society have generated a qualitative leap in the development of accounting science, creating a holistic system of ideas, processes and relationships between its component elements, creating the premises for a new accounting paradigm and opening a new perspective for the accounting profession. The evolution of new digital technologies advanced with the globalisation of markets has "progressively" generated the need for changes in the way of reporting, which aims to encompass "integrated" financial, social and environmental aspects.

In Chapter 3 "*How can we reinterpret the role of the accountant in the future?*" we undertake a thorough investigation to foreshadow the future of the accounting profession in this context of global uncertainty, with the aim of understanding and analysing how the profession is metamorphosing to demonstrate its resilience and remain relevant. The chapter also presents a picture of the broad skills needed by future accountants with an impact on pre-university accounting education. In order to identify the competencies of the accountant of the future, competencies generated by the new accounting paradigms, we used a content analysis by first conducting a bibliometric search, using the Web of Science database, complemented by an inductive thematic investigation, through a review of the literature and the most recent reports (between 2016 and 2022) produced by the main international professional bodies. As a result of the research carried out, we made a correlation between the accounting paradigm and the skills that need to be trained and developed to ensure the relevance and viability of the accounting profession.

The research is developed by conducting a case study (No. 1) on the perception of accounting practitioners on the new extended competencies, in order to take the "pulse of the profession", to understand how the profession is responding to the trends foreshadowed before the pandemic but also to the challenges of the pandemic, to identify, based on the perceptions of accounting practitioners, which competencies are needed by recent economic school graduates. Our aim was to understand and explore how the accounting profession will move forward in the context of the 21st century, characterised by a global marketplace and real-time economy. In addition, our research will help to more clearly shape the skills needed by future

accountants, and thus to informally complement curricula and develop optimal teaching strategies. Therefore, in order to formulate an answer to the research question: To what extent do the new accounting paradigms generate a shift in approach to new skills that will support the mission and role of the accounting practitioner, we aimed to test two working hypotheses, represented in Table no. 1:

*Table no. 1 Hypotheses formulated and results obtained for the perception survey of accounting practitioners*

Hypothesis		Results
<b>H1</b>	There is a shift in the mindset of accounting practitioners on the new core competencies aimed at the accountant of the future.	Validated
<b>H2</b>	Broad skills (cognitive, digital, self-awareness and interpersonal) are formed in the pre-university and university education system.	Invalid

*Source: Own processing*

For an overview of respondents' perceptions of the broad competencies, we have ranked the top 5 competencies considered most important in the accounting profession, illustrated in Table no 2:

*Table No. 2 Ranking of most valued extended competencies*

<i>No. Crt.</i>	<i>Cognitive skills</i>	<i>Score</i>	<i>Digital skills</i>	<i>Score</i>	<i>Interpersonal skills</i>	<i>Score</i>	<i>Self-management skills</i>	<i>Score</i>
<b>1.</b>	Ability to learn	<b>4,89</b>	Digital learning	<b>4,71</b>	Emotional intelligence	<b>4,62</b>	Seriousness and perseverance	<b>4,86</b>
<b>2.</b>	Agility of thought	<b>4,74</b>	Digital ethics	<b>4,57</b>	Collaboration	<b>4,60</b>	Self-confidence	<b>4,74</b>
<b>3.</b>	Identifying relevant information	<b>4,74</b>	Cyber security	<b>4,51</b>	Organisational awareness	<b>4,48</b>	Self-development	<b>4,72</b>
<b>4.</b>	Time management and prioritisation	<b>4,71</b>	Statistical data analysis	<b>4,48</b>	Creating an inspirational vision	<b>4,40</b>	Knowing your own strengths	<b>4,71</b>
<b>5.</b>	Applying knowledge in different contexts	<b>4,71</b>	Understanding and using intelligent systems	<b>4,45</b>	Resolving conflicts	<b>4,14</b>	Courage to take risks	<b>4,63</b>

*Source: own processing based on the questionnaire applied*

In terms of how broad skills are acquired, the respondents interviewed believe that initial pre-university accounting education, and later that undertaken in a university environment,

contributes less to the development of these broad skills, whereas practical experience in the workplace plays the most important role in this respect.

Chapter 4 "Implications of new accounting paradigms and orientations on pre-university accounting education in Romania" analyses how trends in technology, environment and society are generating a long-term reconfiguration of accounting education, starting with pre-university education. All these challenges, launched by the sustainable development of society, create increased expectations on providers of economic education in general and on pre-university education as the first step in the training of the future professional in particular. In Chapter 4, we therefore follow the following investigative itinerary:

(I) a presentation of the international and European perspectives on accounting education, the reaction of professional bodies and researchers to the need for a paradigm shift in accounting education;

(II) an analysis of the national approach to accounting education in pre-university education. There is a concern to adapt the new education law in Romania to the demands and challenges of Education 4.0, but unfortunately the results of its implementation will come much later. According to this new law, students, as future participants in a highly digitised labour market, are to benefit from an accounting education harmonised with new digital technologies, using collaborative learning techniques and trans-, inter- and multidisciplinary approaches. In this sense, pre-university and later university business education institutions are forced to align with all these transformations in order to remain relevant (Madsen, 2015);

(III) a case study (no. 2) on the implications of the new paradigms and orientations of accounting on pre-university accounting education, by: a) identifying and analysing the level of digital competences, proposed by the curriculum, for students in pre-university economic education, a level that will ensure their adequate and harmonious development, as a fundamental prerequisite for the use of modern accounting software and IT platforms and for overcoming the obstacles and challenges brought about by the ongoing digitisation of the accounting field; b) identifying and analysing the level of integration of extended competences in the curriculum of pre-university economic education;

(IV) an analysis of the consequences, challenges and opportunities of digitising accounting education; (V) a case study (No. 3) by applying a perception questionnaire addressed to accounting teachers in pre-university economic education. The aim of the study was to

investigate how accounting teachers relate to the need for change in accounting education in pre-university education..

Based on the hypothesis - premise that accounting education in pre-university education is in need of "reform" as a result of global social and economic changes and new accounting paradigms that have impacted the accounting profession, 20 sub hypotheses were formulated, structured into 7 broad categories, as shown in Table 4:

*Table No. 3* Sub- hypotheses on the perception study of preuniversity accounting teachers.

<b>Category</b>	<b>Sub-hypotheses:</b>	<b>Validation</b>
<b>1) Need for technical support</b>	H 1: Accounting teachers received additional technical assistance for conducting online teaching in the accounting subject;	Invalidated
	H 2: Accounting teachers received technical support (tablet, laptop, internet connection) from the institution during the online courses;	Validated
<b>2) Need for methodical support</b>	H 3: Teachers felt a professional need for guidance in their teaching during the pandemic period.	Validated
	H 4: Accounting teachers received methodical support to carry out online teaching work effectively.	Validated
	H 5: Teachers exchanged teaching experience with other colleagues on teaching in the online environment.	Validated
<b>3) Improving the act of education</b>	H 6 Teachers felt ready to teach online when schools closed due to the Covid-19 pandemic.	Validated
	H 7 The didactic activity in the online environment improved the quality of the educational process.	Validated
<b>4) Continuing professional training</b>	H 8 Teachers feel that specific training is needed for teaching accounting online.	Validated
	H 9 Professional training is needed to integrate the challenges of the changing business environment and the digital revolution into pre-university accounting education.	Validated
<b>5) Adapting and improving the curriculum</b>	H 10 The current accounting curriculum is adapted for online teaching.	Validated
	H 11 Pre-university accounting education is adapted to the changes brought about by the globalisation of business.	Validated
	H 12 Pre-university accounting education corresponds to the changes taking place in the economic environment and in advanced technology.	Invalidated
	H 13 A revision of the curriculum in the accounting subject is useful to adapt it to the digitisation of accounting education.	Validated
	H 14 It is necessary to include cloud accounting technology in the accounting module curriculum.	Validated
<b>6) Developing pupils' competences and skills</b>	H 15 The skills and competences that students acquire in high school in the accounting subject will be relevant to the workplace or to the university of their choice.	Validated
	H 16 In the practice the learner acquires professional competences and skills.	Validated
		Validated

	H 17 For the development of professional competences of students, the contribution that the economic environment can bring is necessary.	
<b>7) The professional fulfillment of teaching</b>	H 18 Teachers feel inspired and creative in teaching.	Validated
	H 19 Pre-university teachers consider that they have a significant contribution to the professional training of students, future professional accountants.	Validated
	H 20 Teachers feel fulfilled in the teaching activity carried out.	Validated

*Source: own processing*

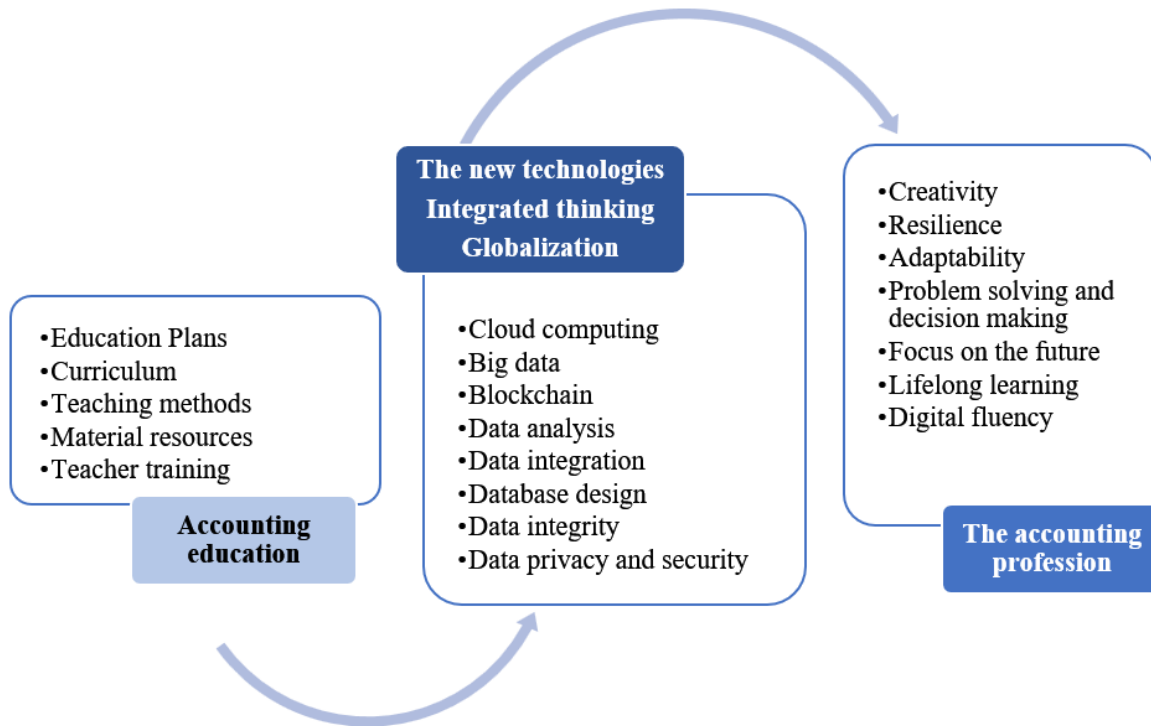
The research highlights the level of awareness among pre-service accounting teachers of the need to reform accounting education in line with new accounting paradigms and new changes in the accounting profession.

The transformations that the current social-pandemic context has generated, has influenced and continues to influence the emerging world of work, while generating new expectations and challenges for the educational system, through the implementation of the digitization of teaching-learning activity. These changes create the need for flexible, collaborative learning through digital platforms, ensuring that the education system adapts to the changing demands of society and thus prepares future graduates for success in the labour market.

Chapter 5 "*Sustainability of economics undergraduate education, a prerequisite for sustainable accounting education*" explores the sustainability profile of economics colleges in the country and critically examines their readiness and openness to implement new accounting paradigms that foreshadow the future of the accounting profession.

Education for sustainability has become an emerging and dynamic concept that offers a new vision for education, set by Goal 4 "Quality Education" under the 2030 Agenda. A suggestive representation of how accounting education can meet the sustainability requirements of the accounting profession is made in Figure no. 4 below:





*Figure no. 4* Implications of accounting education for the evolution of the accounting profession  
*Source:* own projection

Sustainable pre-university education requires a permanent review of the educational environment and the promotion of a new set of values in educational institutions that will guide the future model of progress. A pre-university business education institution is sustainable if it is able to adapt to medium and long-term changes that may affect future accounting professionals. These include, on the one hand, the new technologies that have invaded the accountancy profession and, on the other hand, the new transversal competences and new skills such as creativity, resilience, adaptability, lifelong learning, digital fluency that are the hallmarks of a future accounting professional.

This chapter therefore raises the issue of sustainability of education in general and accounting education in particular. In the first part, a conceptual approach and a bibliometric analysis of the sustainability of education are carried out, and in the second part, an analysis of the financing mechanism of economic colleges in Romania and a research to establish their sustainability profile, as a fundamental premise for the implementation of the new accounting paradigms in pre-university accounting education. The aim of this case study (no. 4) was to assess the sustainability of the economic high schools in the country through an adaptation of

the Deming spiral concept (planning, operationalization, reporting and innovation), starting from the analysis of secondary data, based on the online information provided by the high schools. Therefore, through this exploratory research, we investigated how economic colleges in Romania are advancing strategies towards sustainable development so that their graduates become agents of change and respond to economic, social and environmental challenges.

Also, by creating an econometric model, we analysed the correlation between the sustainability profile of economic colleges in Romania and their performance in the baccalaureate exam (case study 5). Therefore, we used regression analysis to establish the link between the independent and dependent variables and correlation analysis to identify the strength of this link. In order to test the statistical significance and the veracity of the regression model we resorted to the application of statistical tests as follows: (A) Student's t-Test (Two-Sample Assuming Unequal Variances), (B) Durbin Watson (DW) test for testing the autocorrelation of errors and (C) ANOVA analysis for testing the linearity and validity of the model. In order to test the validity of the model we used the F-statistic. The econometric model is found to be valid and the hypothesis of lack of significance of the independent variable is rejected in favor of the hypothesis that the regression model is a significant one or we can state that it is a test of significance on R<sup>2</sup>.

Therefore, following the econometric analysis, the hypothesis formulated "The results obtained in the baccalaureate exam influence the sustainability profile of the economic colleges" is validated with the mention that their influence is of low intensity, not having a decisive impact in shaping the sustainability profile of the college.

## **SCIENTIFIC RESEARCH METHODOLOGY**

**The research methodology** is configured according to the objectives of the work and the expected results, resulting in a combination of qualitative and quantitative research.

**Qualitative research** is carried out through a top-down deductive approach, starting from concepts, theoretical notions and regulations specific to the area of study. Among the methods and tools specific to qualitative research that have been used in this work are: literature review, historical research, theoretical analysis of the evolution of accounting, theoretical modelling. With regard to **quantitative research**, bibliometric analysis, questionnaire,

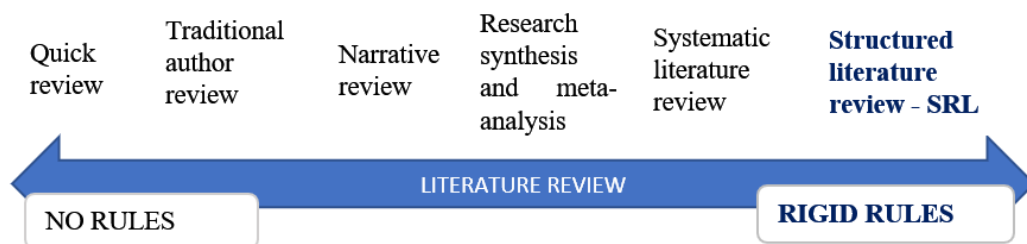
statistical index analysis and econometric modelling were used as methods and tools during the study. This research generated the need to investigate specific phenomena and processes in a constructivist approach, combining deductive logic (which implies starting from theory to arrive at an observation) with inductive logic (which implies starting research from observation to arrive at theory).

The definition and application of the above methods and tools are detailed below.

### **Literature review**

Documentation and content analysis are the most commonly used research techniques, which are mainly carried out by consulting the literature and the regulatory framework where appropriate. Knowledge of the field in which the research is to be carried out is a fundamental part of any PhD thesis. Through these methods, an in-depth analysis of previous studies was carried out, and then the basic concepts were defined and understood in order to build the conceptual framework of the thesis. To collect the necessary information, articles published in international databases such as Web of Science, Elsevier, Springer, ScienceDirect, publications of international, European or national organisations (ACCA, IFAC, EC, WEF) and books were analysed. We will also consider a practical documentation at the level of economically-oriented pre-university education establishments, in order to provide a basis for scientific research.

Literature review takes many forms, depending on the rules applied. A suggestive graphical representation of these is shown in Figure no. 5:



**Figure no. 5 - Methods of literature review**

Source: Adapted from Massaro, Dumay et al., 2016, p. 769

Two forms of literature review have been used throughout the work:

- Systematic literature review to analyse the evolution of accounting theories, to identify new challenges for the accounting profession and the broad skills needed to ensure the viability of the profession.

- Structured Literature Review (SLR) - to analyse new paradigms in accounting: digitalisation, integrated thinking and globalisation. An SLR provides an empirical basis for analysing and investigating relevant articles and reduces researcher bias (Tranfield, Denyer et al., 2003). This type of review is recent in accounting research, according to Stoica and Ionescu-Feleagă (2021).

The historical research used in the research is complex: a mixture of paradigms, approaches, types, methods and horizons. We use constructive philosophical research, an inductive approach, a mix of research types (narrative and interpretive), content analysis as a research method and three types of data collection (archival, secondary data and observation) (Barbu, 2006, p. 67). In this paper, historical research has been used for a longitudinal approach to the evolution of accounting from an international but also a national perspective.

Theoretical analysis of the evolution was used to present the concepts of "accounting theory", "accounting paradigm", "digitization", "integrated thinking", "globalization", "accounting profession", "accounting education" in the study. In parallel, comparative analysis was also used in order to better capture certain particularities and relationships between concepts.

**The development of theoretical models** was used to identify the sustainability profile of economic colleges, an essential condition for opening to the implementation of new accounting paradigms in the teaching of accounting and for the analysis of the correlation between the sustainability profile of economic colleges in Romania and their performance, reflected in the results of the baccalaureate examination.

**The bibliometric analysis**, conveyed multidisciplinary, has the role of mapping the science through distinctive techniques, with impact in shaping the current state of research in the chosen field, as well as future research directions in order to configure the study path, providing support to the researcher in the broad approach of the investigation (Fabregat-Aibar et al., 2019). This method was used to analyse the sustainability of education, calling on a bibliometric application with a role in science mapping, namely Biblioshiny, functionally via R studio (version used 1.4.1106).

**The questionnaire** used as a data collection method, was used in two key points of the research: (I) the case study on the perception of accounting practitioners on extended competences; (II) the case study on the perception of accounting teachers in pre-university

economic education on the digitalization of accounting education and the implementation of new accounting paradigms in their teaching activity. In both cases, the free platform [www.survio.ro](http://www.survio.ro) was used to develop the questions, complete the questionnaire and collect the answers.

**The analysis of the statistical indices** was carried out in two stages using two computer programs. The first stage consisted of cleaning the dataset using the questionnaire in [survio.ro](http://www.survio.ro) and the second stage consisted of the actual statistical analysis using MS Excel. The steps taken to analyse the statistical indicators, intermediate and final results are presented in detail in subchapters 3.4, 4.5, 5.5, 5.6 and 5.7 of the paper. In addition, based on the selected indicators, an **econometric model** was tested on the correlation between the sustainability profile of the economic colleges in Romania and their performance, as expressed by the baccalaureate exam results, using a linear regression (subchapter 5.7).

## **FINAL CONCLUSIONS, CONTRIBUTIONS, LIMITATIONS AND PERSPECTIVES**

The thesis is developed starting from the idea that education, research and accounting science need both an intra-connection and an interconnection with the current economic and accounting reality. The approach to pre-university economic/accounting education must take into account the fact that "contemporary economics is carried out between equilibrium, seen as a special case, and predictable chaos". This new paradigm suggests a holistic approach to the contemporary economic environment and understanding the phenomenon in its essence. It is imperative that in pre-university accounting education, the transfer of knowledge is associated with learning experiences that anticipate integration at the level of the productive dimension, in the sense of better compatibility with the requirements of the labor market. The increased mobility of graduates, on the one hand, and of the workforce, on the other, and the attempt to delimit some occupational standards at a supranational level, brings into focus the need for cooperation at the regional and international level to facilitate professional insertion on the market labor force, which is in a direct determining relationship with economic progress. The thesis thus brings to attention a series of national and international coordinates of the evolution of accounting and the accounting profession, in a contemporary context, marking these milestones with the exemplification of good practices of ensuring an effective partnership between educational institutions, professional bodies and all those interested.

In approaching the three axes of research of the work "Paradigms and orientations of accounting in pre-university education", namely: highlighting the scientific and social dimensions of accounting, the evolution of research in the sphere of accounting and perspectives of accounting in high school accounting education, the research strategy is one that respects the established stages of such a scientific approach. Thus, the beginning of research on the studied issue will be represented by the correct positioning in the sphere of knowledge, both of the general field of research in which the topic is oriented, and of its specific subfields.

The paper is designed as an investigation, both analytical and synthetic, of the way in which pre-university accounting education is currently approached, within economic colleges, under the pressure of the emergence of new accounting paradigms, the evolution of the accounting profession and changes in the economic environment. The viability of the profession

is ensured through a sustainable accounting education. A sustainable accounting education is guaranteed by educational institutions with an appropriate sustainability profile. Therefore, the entire approach represents a step up in an extensive research effort that pursues the implications of the new accounting paradigms in the transformation process of the accounting profession and in the reorganization of pre-university accounting education.

## **I. The synthetic exposition of the conclusions**

### **Conclusions related to the theoretical study**

Chapter I of the paper highlights, on the one hand, the existence of a plurality of explanatory discourses in accounting theory, and on the other hand, concerns for the development of a theoretical body of accounting in order to acquire the status of a mature scientific discipline, which evolves with economic and social changes. Accounting, like any discipline, has a limited scientific content from a historical point of view, but unlimited from the perspective of the reality and complexity of economic life. Accounting theories are developed as a result of past economic facts, but they are constantly checked and analyzed, because in accounting, as in economics, empirical facts are constantly renewed. Therefore, the continuous preoccupation of the accounting science with the review and critical analysis of its theories is fully justified, and the essential factor in the elaboration and foundation of new theories has been the theoretical thinking.

The general itinerary of scientific knowledge in accounting was marked by the continuous enrichment of knowledge accumulated by previous generations, by the continuous struggle between old and new theories, by an increasingly intense concern for a surprise of the objective world, of the dynamics of economic reality.

The confrontation between the paradigms of different historical eras and the new accounting paradigms, represents a crediting of the idea that the science of accounting has reached the stage of epistemological maturity, and creates the premises for the progress of scientific knowledge in the field of accounting. In addition, the concept of "accounting" must be "adjusted" by referring to the economic evolution and the trends of society in continuous transformation and the definition of accounting "reconsidered", by taking into account the implications of digitization, integrated thinking, globalization, the green transition and sustainable development .

In order to adequately respond to the evolution of advanced technologies, globalization and the change in the way of reporting, which characterizes this first half of the 21st century, the accounting profession must propose a new model. In addition, in order to be able to foreshadow the future of the accounting profession in a context of global uncertainty, it was absolutely necessary to understand and analyze how the profession is metamorphosing to "move forward" and to remain relevant. Therefore, the key trends that have already emerged in technology, environment and society that have stimulated the rethinking of the nature of the accounting profession, constitute the premises for the long-term reconfiguration of accounting education, starting with pre-university education. All these challenges launched by the sustainable development of society, create increased expectations for accounting education providers, starting with the pre-university environment.

The redesign of the accounting profession implies, on the one hand, the assumption of all digital transformations, new reporting models, changing regulations by the educational environment and professional bodies and, on the other hand, the necessary preparation for their application in accounting practice. The preparation involves at least two directions of action: (1) a pre-university and then university training of aspiring accountants carried out by educational institutions and (2) a training of current accountants carried out by professional bodies.

We are of the opinion that in order to ensure to aspiring accountants, the proper preparation for employment on the labor market, it is fundamental that pre-university economic education, as a starting point in accounting education, benefits from due attention, both from the decision-makers and from the part of professional bodies and the university environment. In addition, without concerted action by accounting teachers, practice tutors and professional bodies, the expected result will not be achieved: the skills necessary to ensure the viability and relevance of the accounting profession.

### **Conclusions related to the case studies**

*The conclusions of case study no. 1 regarding the perception of accounting practitioners regarding the new expanded skills (subchapter 3.4)*

Considering the fact that this research represents an exploratory study that aims to analyze some trends, we can consider the chosen sample representative, in order to outline a relevant image for the analyzed aspect: "an x-ray" of the perception of the current accounting



practitioners in Romania, regarding the new skills extended which, according to the accounting literature, create favorable conditions for increasing the relevance and viability of the accounting profession in the new economic and social context.

Seen from a pragmatic perspective, our research provides relevant data for possible interventions regarding how to organize accounting education in pre-university education, the development of new programs and the establishment of the most effective learning strategies for the assimilation of the necessary skills, essential aspects for ensuring the sustainability of the accounting profession . In addition, achieving a sustainable transition to the new dimensions of the accounting profession is supported by three main pillars: 1) a workforce endowed with expanded skills and competencies; 2) the capacity of the pre-university and university education system to form and develop these skills for future employees; 3) the ability of entities and professional bodies to create continuous training programs for employed accountants.

We believe that, in the current economic and social context, the new valences of the education of aspiring accountants arise from the needs of the market, from the digital revolution and from the whole phenomenon of internationalization and globalization of business.

The research carried out can be useful for teaching staff, professional bodies and other actors in the economic environment who will be influenced but also directly involved in the phenomenon of the change in the accounting paradigm generated by the expansion of advanced technologies, integrated thinking and globalization, an evolution that requires the development of new skills . The limit of the research is given by the geographical limitation for seven counties in different development regions of the country.

*The conclusions of case study no. 2 regarding the analysis of the correlation between the new accounting skills proposed by the professional bodies and the skills proposed by the current school programs for the "technician in economic activities" specialization (subchapter 4.3).*

Although the current curriculum, through a transdisciplinary approach, integrates within the specialized modules, some of the extended skills proposed by the professional bodies for the training of future accountants, in order to ensure an optimal level of training for future accounting professionals, we believe that the harmonization of the curriculum at accounting discipline with the current and future needs of the accounting profession in the field of using new information technologies is a difficult objective to achieve. In addition, this desired must

be corroborated with important investments in IT resources, a fact that represents an important restriction for pre-university education. In this sense, the change can be produced by the integration in the education plans of the subjects related to the technologies that are changing the accounting profession. We are, however, aware that the development and expansion of the accounting curriculum must be doubled by an adequate training of teaching staff regarding the IT field and the new intelligent solutions.

*The conclusions of case study no. 3 regarding the perception of accounting teachers in pre-university economic education, regarding the digitization of accounting education and the implementation of new accounting paradigms in teaching activity (subchapter 4.5)*

Starting from the hypothesis - premise that accounting education in pre-university education needs a "reform" as a result of global social and economic changes and the new accounting paradigms that have impacted the accounting profession, the answers of the 104 respondents, accounting professors from economic colleges in the country, generated the validation of 18 sub-hypotheses out of the total of 20 formulated..

The accounting teachers benefited from technical support (tablet, laptop, internet connection) from the institution (H2), but they did not properly receive technical assistance for conducting online teaching in the accounting discipline (H1). However, the respondents considered themselves prepared to teach online during the pandemic period (H6) and the didactic activity in the online environment improved the quality of the educational process (H7). At the same time, they highlighted the professional need to be guided in the teaching process in difficult times, such as the pandemic crisis (H3), an aspect that was achieved, both through methodical support to carry out the online teaching activity, effectively (H4), how much, especially, by making exchanges of didactic experience with other colleagues (H5).

The study highlights the importance of continuous professional training through the need to organize specific professional training courses for the online teaching of accounting and for the integration into pre-university accounting education of the new accounting paradigms generated by the changes in the business environment and the digital revolution (H8, H9). In addition, the importance of practice (H16) and the contribution of the economic environment (H17) is essential in order for students to acquire the professional skills and abilities required by the labor market (H15).

The respondents consider the current accounting curriculum as adapted for online teaching (H10) and the pre-university education in the field of accounting in accordance with the changes generated by the globalization of business (H11), however, it does not correspond to the changes taking place in the economic environment and in the field of advanced technology (H12). Therefore, the surveyed teachers highlighted the need to revise the accounting curriculum to be adapted to the digitization of accounting education (H13) and, at the same time, the opportunity to include cloud accounting technology in the accounting module curriculum (H14). The respondents feel inspired and creative in the teaching activity (H18), feel professional fulfillment in the teaching activity carried out (H20) and believe that they have a significant contribution to the professional training of students, future professional accountants (H19).

The two hypotheses that were invalidated highlight: (1) the lack of concordance between pre-university education in the field of accounting and the changes taking place in the economic environment and in the field of advanced technology (H12); (2) the fact that accounting teachers received little additional technical assistance for conducting online teaching in the accounting discipline (H1).

Therefore, the research highlights the awareness among pre-university accounting teachers of the need to reform accounting education, in accordance with the new accounting paradigms and the new transformations of the accounting profession. Equally, the study highlights the flexibility and ability of pre-university teachers to quickly adapt to change, to find effective didactic solutions and their willingness to openly, responsibly and courageously address these challenges.

Regarding the solutions proposed by the responding teachers to improve the curriculum and the contents related to the accounting discipline so that they are in line with the technological evolution, the economic and social environment, they targeted the following aspects:

- ✓ a reform of the school curriculum;
- ✓ reorganization of students' practice;
- ✓ continuous training of teaching staff on the topic of new accounting approaches;
- ✓ implementation of emerging solutions in pre-university accounting education;
- ✓ ensuring adequate financing of the economic education system.

Therefore, pre-university accounting education should combine the subject offered by the curriculum with economic reality, so as to meet the expectations of the accounting profession. Consequently, accounting specialists are responsible for developing accounting curricula, which, in our opinion, should, on the one hand, remain in line with the accreditations of the Ministry of Education, but on the other hand, meet the requirements of the bodies professional and of the labor market.

*The conclusions of case study no. 4 regarding the establishment of the sustainability profile of economic colleges in Romania (subchapter 5.6)*

This case study offers a mapping of the organizational culture of the 47 economic colleges in the country, but also an original perspective on the complexity and valences of implementing sustainability in economic pre-university education. Furthermore, highlights the essential role of the management of educational institutions to identify and successfully address the "windows of opportunity" for the transition to sustainability, an essential condition for a sustainable education and for a natural and, by no means formal, implementation of the new accounting paradigms: integrated thinking, digitization and globalization. Therefore, for a natural development of the European dimension of national education, in the global context of the "green and smart transition", economic colleges must increase their concern for achieving as many sustainable development objectives as possible.

Following a careful and thorough cross-sectional analysis of the public information presented by economic colleges in the country on their web pages, we found large discrepancies between them, regarding their level of sustainability. Taking into account the proposed theoretical approaches, between the analyzed schools there are similarities in the field of planning, reporting and mostly in the area of operationalization, but there are big differences in the field of innovation. Although, in the operationalization plan, there is an active dimension of sustainability through multiple partnerships and European projects implemented at the level of economic colleges, reporting and (internal and external) communication regarding sustainability is almost absent. The annual reports prepared by the schools do not directly provide information dedicated to the sustainable practices that the schools follow such as: energy saving, waste management or other aspects related to the green transition. In support of a future approach in this sense, the Educated Romania Law creates the reference framework for the "operationalization of the network of green schools and the network of European schools" (art.

25, paragraph (1) and (2) Pre-University Education Law no. 198/ 2023, p. 10). As a result of the research carried out, there is a deficiency of economic colleges in terms of initiative in creating sustainable networks, an aspect that certainly needs improvement in the near future.

The formation of a holistic and sustainable accounting education in pre-university education is the result, on the one hand, of the teaching activity carried out by teaching staff, and on the other hand of all the practices and beliefs that collectively comprise an accounting culture. Educational culture can be defined as a locally contextualized collection of educational beliefs, philosophies, and practices that aim to support and learn students while reflecting societal values. Educational culture begins in the classroom, through teaching, but ends outside it through extracurricular and transdisciplinary activities organized.

*The conclusions of case study no. 5 regarding the analysis of the correlation between the sustainability profile of economic colleges in Romania and their performance, reflected in the results of the baccalaureate exam (subchapter 5.7)*

Following the correlation analysis, we identified the existence of a direct positive link between the two variables (the sustainability profile – the dependent variable and the average at the baccalaureate exam – the independent variable), a link of low intensity, however, which indicates the reduced influence of the obtained average of students at the baccalaureate exam on the sustainability profile of the college. Regarding the unifactorial regression model, represented by the equation  $y = 1.8928x - 3.3418 + \varepsilon$ , it was validated.

In order to verify the statistical hypotheses, we used the Student's test for populations with unequal dispersions, through the "t-Test: paired two sample for means" function in Excel, which rejected the null hypothesis H0 (lack of connection between the two variables: the profile of sustainability is not influenced by the average of the college in the baccalaureate exam) and accepted the alternative hypothesis H1 (the existence of the statistical link between the variables: the sustainability profile of the colleges is influenced by the averages obtained in the baccalaureate exam). Following the ANOVA analysis, the econometric model proved its validity and the two estimators are statistically significant.

**In conclusion**, following our research we can outline several directions of action to reduce the gap between the evolution of new accounting guidelines, generated by the tumultuous evolution of society, and accounting education in pre-university education:

- ✓ As the traditional tasks performed by accounting practitioners change, the professional skills also change, in the sense that strictly technical skills are no longer sufficient, they must be supplemented with extended skills: digital, cognitive, interrelational and self-management;
- ✓ Curricula for accounting graduates must include the new extended skill sets that outline the profile of an accountant prepared to approach the new accounting paradigms in his current activity;
- ✓ Accounting teachers in pre-university education must understand the new expanded skills and aim to organize learning activities and adopt the appropriate teaching strategy, which facilitates the training and development of these new skills required in the labor market;
- ✓ It is necessary to stimulate the dialogue between the pre-university educational environment, the academic environment and the professional bodies, in order to broaden the informational horizon and skills, in the training of future accountants;
- ✓ It is beneficial to increase the sustainability of economic pre-university education institutions, in order to successfully manage future challenges generated by economic and social transformations, through a holistic approach to accounting education;
- ✓ Looking at the global landscape of economic education, we believe that it is absolutely necessary, that in the future, there should be more empirical studies, innovative approaches and good practices in the economic pre-university educational environment in Romania.

## **II. Presentation of personal contributions**

Through a thorough documentation and review of the specialized literature, the reports issued by professional bodies, the legislative framework, the curriculum documents, we believe that we have identified multiple aspects that can contribute to the development of the horizon of knowledge regarding the issue addressed. Therefore, starting from the research objectives, the author's contribution to the field can be systematized as follows:

- ✓ delimitation of the methodological framework used;
- ✓ the interdisciplinary approach to the theme, harmonizing during the research concepts from fields such as: accounting, history, statistics, education;

- ✓ analysis of concepts such as: accounting theory, accounting paradigm, accounting profession, accounting skills, accounting education, sustainable accounting education;
- ✓ identifying the essence and logical coherence of what the theoretical landscape of accounting theory and thought meant during various eras in human history and demonstrating the eclectic character of accounting theory in its evolutionary path towards new accounting paradigms (chapter 1);
- ✓ presentation of the crystallization of commercial education in Romania and its influence on Romanian economic-accounting culture and thinking (chapter 1);
- ✓ establishing a solid theoretical and conceptual framework, regarding how new accounting paradigms and orientations such as digitization, integrated thinking, globalization, green transition, impact theory, thinking and the accounting profession, by using a structured literature review (chapter 2 ).
- ✓ highlighting the main effects that the three new accounting paradigms: digitization, integrated thinking and globalization have on the evolution of the accounting profession, from the perspective of the main contributions they bring to accounting theory and practice and the ways of professional education and training (chapter 2);
- ✓ analysis of the changes that mark the accounting profession and future opportunities and the identification of the necessary skills to ensure the sustainability of the profession, through a systematic review of the specialized literature, but also of the reports of globally recognized professional bodies, in order to outline the profile of an accountant prepared for the future (subchapter 3.3)
- ✓ carrying out a quantitative analysis, by carrying out an opinion survey undertaken in the online environment, through the questionnaire, addressed to accounting practitioners. The case study sought to analyze how accountants relate to the new competencies that will support the mission and role of the accounting practitioner (subchapter 3.4)
- ✓ an analysis-diagnosis regarding the implications of the new accounting paradigms and guidelines on accounting education in Romania; (subchapter 4.2)
- ✓ carrying out a case study regarding the analysis of the correlation between the new accounting skills proposed by the professional bodies and the skills proposed by the current school programs for the "technician in economic activities" specialization (subchapter 4.3)

- ✓ carrying out a quantitative analysis, by carrying out an opinion survey undertaken in the online environment, through the questionnaire, addressed to accounting teachers in pre-university economic education. The case study followed the analysis of the respondents' perception regarding the digitization of accounting education and regarding the implementation of new accounting paradigms in the teaching activity (subchapter 4.5)
- ✓ carrying out a bibliometric analysis of the sustainability of education with the help of the bibliometric application: Biblioshiny, functional through R studio (used version 1.4.1106) (subchapter 5.3);
- ✓ the comparative analysis between Romania and other EU member states, regarding public expenditure for education between 2016 – 2020 and the investigation of the financing mechanism for economic pre-university education units (subchapter 5.5)
- ✓ carrying out an exploratory qualitative research, in order to establish the sustainability profile of economic colleges in Romania, as the main providers of pre-university accounting education, by creating a theoretical model, through an adaptation of Deming's spiral (subchapter 5.6).
- ✓ creating an econometric model in order to analyze the correlation between the sustainability profile of economic colleges in Romania and their performance, reflected in the results of the baccalaureate exam (subchapter 5.7)

Therefore, we consider that this research helps to enrich the specialized literature, through the innovative character of the subject addressed, on the one hand from a theoretical perspective, the new accounting paradigms: digitalization, integrated thinking and globalization which are concepts in full expansion, on the other hand , due to its practical utility. This fact is demonstrated by the analyzes carried out regarding the implementation of these new paradigms in pre-university accounting education and by the conclusions formulated in the context of an educational system that is always looking for solutions. In addition, the proposed conceptual framework, with practical implications at the level of economic pre-university education, aims to: (1) represent a model, a "road map" through which pre-university economic education institutions adapt their curriculum to the evolutions of the accounting profession and the economic environment; (2) to support accounting teachers in pre-university education, in order to enrich the accounting teaching-learning strategy, in response to the new challenges and orientations of accounting and the accounting profession.



The research carried out can be useful for teaching staff, professional bodies and other actors in the economic environment who will be influenced but also directly involved in the phenomenon of the change in the accounting paradigm generated by the expansion of advanced technologies, integrated thinking and globalization, an evolution that requires the development of new skills for future and current accounting practitioners.

### **III. Dissemination of partial research results**

The results of the first stages of the research, which aimed at a conceptual approach regarding the evolution of accounting theory, were published in 2021, under the title "*Considerations regarding the evolution of accounting*" in *Annales Universitatis Apulensis*, Series Oeconomica Number 23, volume 1, ISSN: 1454- 9409 (print) / 2344–4975 (online) / ISSN–L 1454–9409.

The results of the research that focused on the implications of integrated thinking, a new accounting paradigm, on the integrated reporting of entities listed on the Bucharest Stock Exchange, were published in 2021, with the title "*Considerations on integrated thinking, a new accounting paradigm*" in the Volume of *The International Conference Identities in Globalization. Intercultural Perspectives Section: Social Sciences* (pag. 306 – 314) ISBN: 978-606-93691-3-5 Edited by: The Alpha Institute for Multicultural Studies Published by: "Arhipelag XXI" Press, Tîrgu Mureş.

In 2022, the partial results of the research were published in the following articles:

- ✓ "*Analytical approach to accounting progress - a fundamental premise for new accounting guidelines*" published in *Ecoforum Journal*, Section Accounting, Finance, Statistics and Economic informatics, Volume 11, Issue 2(28), available online at <http://www.ecoforumjournal.ro/index.php/eco/index>
- ✓ "*Sustainability education implications in pre-university economic level: premises, approaches and perspectives*", in the volume of *The International Conference Culture in globalization: identities and nations connected*, Section: Social Sciences, ed.: Iulian Boldea - Arhipelag XXI Press, Tîrgu-Mureş , pp. 311 -321, ISBN: 978-606-93691-3-5 (C), <http://asociatia-alpha.ro/conf.php?conf=gidni&vol=09-2022>

- ✓ "*Premises of digital accounting education in the pre-university educational level. Case study*", *Annales Universitatis Apulensis Series Oeconomica* ISSN: 1454-9409 (print) / 2344-4975 (online) / ISSN-L 1454-9409, Number 24/2022 volume 1.

The results of the research that focused on the challenges and opportunities generated by the evolution of the accounting profession were published in 2023, under the title "*Critical considerations for future developments in the accounting profession*" in the Volume of *The International Conference Identities in Globalisation. Intercultural Perspectives*, Section: Social Sciences, ISBN: 978-606-93691-3-5 Edited by: The Alpha Institute for Multicultural Studies Published by: "Arhipelag XXI" Press, Tîrgu Mureş,

The results of the structured literature review on new accounting paradigms: digitization, integrated thinking and globalization, were published in 2023 under the title "*A structured literature review on new accounting paradigms*" in *Ecoforum Journal*, Accounting, Finance, Statistics and Economic informatics section, Volume 12, Issue 2, 2023, online at <http://www.ecoforumjournal.ro/index.php/eco/index>

#### **IV. Limitations of the present research and potential future research directions**

The research was marked by some limitations generated, on the one hand, by the novelty and complexity of the theme, on the other hand, by the lack of homogeneity but also of updating the data, available on the web pages of economic pre-university education institutions. A shortcoming identified in carrying out this research was the lack of transparency, on the part of pre-university education units, both in terms of budget allocations and in terms of budget execution. This fact made it impossible to carry out an objective analysis of the financing at the level of the 47 economic colleges in the country. In addition, the reluctance of accounting practitioners, as well as accounting teachers, to complete the applied questionnaires represented another limitation in order to obtain relevant information for the case studies.

Regarding the novelty of the theme, although an important contribution of specialized literature regarding the new paradigms and orientations of accounting is noted, a limitation of the literature is observed in the direction of the implications that these new approaches have on the accounting profession and on education accounting; therefore, this work comes precisely to meet this area of research.

In terms of research prospects, this study represents a starting point for several directions of scientific research. First of all, we propose to expand the study on the perception of accounting practitioners in relation to the new extended skills, for all counties of the country, with relevant results that are not influenced by the mentality, behavioral characteristics and culture of the respondents from a certain area of the country. In parallel, we propose to carry out a qualitative and quantitative research on the professional path of economic high school graduates (the degree of insertion on the labor market, the continuation of studies in tertiary education at specialized faculties), in order to outline with greater acuity the profile of sustainability of economic colleges. In addition, we want to extend the analysis of the level of sustainability of economic colleges, for more school years to analyze the correlation between it as a dependent variable and several criteria as independent variables.

Also, starting from the premise that adequate financing of economic colleges ensures the sustainability of pre-university accounting education, we aim to carry out an objective analysis of both financial allocations and budget execution at the level of economic colleges in the country and identify the advantages and possibilities for improvement of funding based on the standard cost per pupil. We aim to develop the research by investigating the correlation between the level and mode of financing of economic colleges and their sustainability profile.

Another future direction of research consists in combining the research carried out with the professional experience, in order to spread the message and harmonize the three planes: the pre-university educational environment, the academic environment and the professional bodies in the field of accounting. Moreover, we are considering the creation of a "Guide of good practices" on how to implement the new accounting paradigms and extended skills, identified following case studies, in pre-university accounting education, a guide that would represent a theoretical and practical alternative for pre-university accounting teachers.

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