Artificial intelligence in accounting professions: The young chartered accountants' experience

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Received: 22 August 2024
Accepted: 26 May 2025

Abstract

This study investigates how young Chartered Accountants (CAs) approach AI in their professional practices. Using a qualitative research design, data were collected through semi-structured interviews with young Italian CAs. Findings highlight that AI adoption among CAs follows two main approaches: horizontal and vertical. The horizontal approach focuses on improving efficiency in routine or peripheral tasks (e.g., scheduling and content creation) through self-directed learning and experimentation with general-purpose AI tools. It represents an entry point into digital transformation, fostering AI literacy. The vertical approach applies AI to strategic, high-value tasks (e.g., forecasting and market analysis), requiring structured training in data analytics and predictive modelling. It reflects a more profound professional evolution, where AI becomes a "cognitive assistant" for decision-making, strategic analysis, and innovation. While both approaches offer significant benefits, they also share risks and challenges, including data privacy issues and output reliability, and have a different impact on the CAs-Client relationships. The two approaches are also analysed using a functional and an evolutionary perspective.

Keywords: Chartered accountants, Artificial intelligence, Accounting, Italy

1. Introduction

This paper examines how young Chartered Accountants (CAs) engage with Artificial Intelligence (AI), offering insights into its implications for the future of the accounting profession. The current literature on digital transformation and the accountancy field identifies a generational divide, with younger professionals demonstrating a stronger digital affinity due to their immersion in technology (Fogarty et al., 2017; Waleed et al., 2023). Some

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Management Control (ISSN 2239-0391, ISSNe 2239-4397), 2025, 1 – Special Issue
Doi: 10.3280/MACO2025-001-S1003

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scholars have noticed that although early-career CAs often lack the technical depth required for the practical application of AI (Jackson et al., 2022), they show high awareness of AI trends and their digital fluency and desire for flexibility, efficiency, and strategic engagement position them well to drive innovation (White et al., 2020; Dermarkar et al., 2024).

Contemporary CAs contend with complex challenges, including talent shortages, technological disruption, evolving reporting standards, and rising demand for advisory services (Geok and Fernandez, 2022). At the same time, perceptions of rigidity and time intensity among younger generations hinder recruitment into the CA profession (Assidi et al., 2025), while automation, AI, and data analytics are reshaping traditional accounting roles and demanding new skillsets to remain competitive (Del Gobbo, 2023).

In this context, younger CAs, as early adopters of technology, can play a crucial role in integrating AI into accounting workflows and services (Uren and Edwards, 2023). Investigating their experience enables us to gain more insights into AI's transformative impact, barriers to adoption, and educational needs, highlighting the importance of embedding AI as a core competency in training programs (Uren and Edwards, 2023; Merdekawati et al., 2024; Modisane, 2024). Knowing how the younger generation is dealing with AI is indeed pivotal for the entire professional group of CAs because it helps them succeed in a dynamic environment (Schmidt et al., 2020; Kokina et al., 2021; Centorrino et al., 2022; da Silva et al., 2023; Vitali and Giuliani, 2024). Very few empirical studies focus on young CAs, and even those that discuss how CAs use digital technologies and AI mainly consider large and established professional firms (Moll and Yigitbasioglu, 2019; Schmidt et al., 2020; Kokina et al., 2021; Rawashdeh, 2023; Odonkor et al., 2024). According to data from the Observatory of Professionals and Digital Innovation (DIG©, 2024), Italian CAs and business consultants collectively invested approximately €1.888 billion in digital technologies in 2023, representing a 7% increase compared to 2022. Projections indicate continued growth in this area for 2024. Despite professionals' significant interest, however, AI has not yet been fully integrated into their professional activities (DIG©, 2024). Therefore, given AI's potential to transform the accounting profession (Stancheva-Todorova, 2018) and the key role of young CAs as early adopters of technology, understanding how they engage with AI in their work is essential. To this end, this study aims to answer the following research question: (RQ) *How do young CAs approach AI in their professional practice?*

Two main approaches to AI adoption among CAs emerged from the analysis: horizontal and vertical. Functionally, the horizontal approach focuses on improving efficiency in routine tasks, while the vertical approach targets

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complex problem-solving and strategic enhancement. From an evolutionary perspective, horizontal use often marks the initial phase of digital integration, building confidence and digital literacy while vertical use reflects advanced professional transformation, where AI acts as a "cognitive assistant". These perspectives are not mutually exclusive – many CAs experience a hybrid path, blending practical utility with gradual, identity-shaping evolution.

The paper is organized as follows: Section 2 reviews the literature on AI and accounting; Section 3 outlines the methodology; Section 4 presents the results; and Section 5 refers to the discussion, implications, and limitations.

2. Literature review

AI has become a transformative force, attracting widespread interest from scholars and practitioners (Filippi et al., 2024), impacting many sectors, including accounting (Mancini et al., 2023). Kok et al. (2002, p. 2) provided an early foundational definition of AI as a branch of computer science focused on developing computers capable of human-like cognitive functions, including 'learning, reasoning, and self-correction'.

In accounting, AI is used to automate and enhance various processes (Mancini et al., 2023), including standardised procedures, financial reporting, auditing, and management accounting (Valentinetti and Rea, 2023). AI offers numerous benefits to CAs (Schmidt et al., 2020; Hasan, 2021; Emetaram and Uchime, 2021; Spanò et al., 2023), such as automating repetitive and time-intensive tasks (e.g., data entry and invoice processing), thereby allowing professionals to concentrate on higher-value activities like financial analysis and strategic planning (Baldvinsdottir et al., 2009; da Silva et al., 2023). It also reduces human error, enhances data quality and consistency, facilitates fraud and anomaly detection (Bao et al., 2022), and improves the reliability of financial reporting and decision-making (Cooper et al., 2019). AI favours remote work, fosters collaboration through advanced platforms, enables more efficient document management (Moll and Yigitbasioglu, 2019; Emetaram and Uchime, 2021), and supports real-time data analysis, offering immediate insights that help predict market trends, manage risk, and optimise planning and resource allocation (Hasan, 2021; Kokina et al., 2021; Adeyelu et al., 2024). These changes contribute to the digital transformation of a traditionally paper-intensive profession (Abdallah et al., 2025) and can streamline workflows within accounting firms and enhance their competitiveness through the use of Big Data and Blockchain (Montemari and Nielsen, 2021; Centorrino et al., 2022; Valentinetti and Rea, 2022).

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Integrating AI in accounting also raises some concerns (Ghosh et al., 2024). AI can outperform human work due to its swiftness and precision and it can lead to unemployment and reduced demand for many labour profiles (Frey and Osborne, 2017; Rawashdeh, 2023). CAs will have to actively respond to these challenges by improving their skills in terms of data analytics and computer science, predictive modeling, data mining, critical thinking and communication skills (Richins et al., 2017; Kokina et al., 2021). These new needs will require a change in accounting education to keep future CAs aligned with emerging demands. Universities should revise curricula to prioritise data analytics and AI tools (Holmes and Douglass, 2022; McBride and Philippou, 2022), shifting away from traditional approaches focused on manual calculations towards the integration of software and analytical techniques (Dewua and Barghath, 2019). This transition requires substantial effort from academics, both in acquiring new competencies and in securing resources for up-to-date technologies (Holmes and Douglass, 2022), to support the profession's evolution and to prevent CAs from being partially replaced by AI systems (da Silva et al., 2023) or STEM graduates with stronger technological expertise (Vitali and Giuliani, 2024).

The use of AI in accounting also raises critical concerns regarding data security and privacy, as it relies on access to large volumes of financial information (Odonkor et al., 2024). Without adequate safeguards, such data is vulnerable to breaches and cyberattacks, posing significant risks to both firms and CAs (Gotthardt et al., 2020; Abrahams et al., 2024). Ethical issues such as data misuse, privacy violations, and security threats are among the most pressing challenges in AI adoption (Zhang et al., 2023). CAs must therefore be equipped to implement robust encryption and secure access protocols to protect sensitive information (Gotthardt et al., 2020; Odonkor et al., 2024). Another key concern involves algorithmic bias, stemming from flawed training data, which may lead to unfair or discriminatory outcomes (Hasan et al., 2021). Although AI excels at data processing, it lacks human contextual understanding (Kokina et al., 2021). Excessive reliance on AI can produce technically correct but biased decisions, potentially reinforcing discrimination and reducing trust in AI systems, especially when driven by poor data quality (Shams et al., 2023; da Silva et al., 2023; Adeyelu et al., 2024).

Despite a solid grasp of established digital tools like Microsoft Excel, ERP systems, and cloud computing, CAs across all career levels show limited readiness for digital transformation, particularly in relation to emerging technologies such as AI, blockchain, the Internet of Things, and quantum computing (Busulwa et al., 2025). However, a generational contrast between senior and younger CAs may emerge regarding competencies, values and

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adaptability to technological change (Kroon et al., 2021; Jackson et al., 2023; Busulwa et al., 2025). Senior accountants remain focused on traditional tasks, such as compliance, reporting, and taxation (Kroon et al., 2021), and often view AI tools as difficult to use and of limited practical value in improving outcomes (Abdallah et al., 2024). This is particularly concerning, as senior CAs are expected to lead digital transformation and mentor junior professionals (Busulwa et al., 2025). By contrast, digital-native professionals, such as Millennials and Generation Z, are naturally proficient with digital tools (Fogarty et al., 2017; Waleed et al., 2023) and show strong awareness of AI trends, though often lack the technical skills to apply them effectively in practice (Jackson et al., 2022). Their general tech-savviness facilitates the acquisition of AI competencies and helps bridge the gap between digital literacy and AI fluency (Jackson et al., 2022). Additionally, their expectations, focused on flexibility, work-life balance, and rapid advancement (White et al., 2020), position AI as a means to automate routine tasks, improve efficiency, and elevate their roles toward more strategic functions (Dermarkar et al., 2024). Thus, Young CAs play a pivotal role in the digital transformation of accounting by adopting AI technologies early and facilitating their integration into workflows and client services (Uren and Edwards, 2023). Their experiences highlight both opportunities and challenges, such as technical barriers and training needs, that can guide the design of AI-focused education (Uren and Edwards, 2023). Their varied responses to AI, from experimentation to resistance, reveal key patterns in the profession's practical adaptation (Merdekawati et al., 2024; Modisane, 2024). Understanding young CAs' interaction with AI is vital for their career development and the accounting field's adaptability and resilience (Schmidt et al., 2020; Kokina et al., 2021; Centorrino et al., 2022; da Silva et al., 2023; Vitali and Giuliani, 2024). Yet, empirical research on young CAs is limited, often focusing on large firms and neglecting smaller practices (Moll and Yigitbasioglu, 2019; Schmidt et al., 2020; Kokina et al., 2021; Rawashdeh, 2023; Odonkor et al., 2024). Investigating how young CAs perceive and implement AI fills a significant gap in the current literature.

3. Methodology

This study adopts an exploratory research approach, appropriate for investigating emerging phenomena like AI in accounting, particularly in contexts where empirical evidence is still limited (Patton, 2002).

The research was conducted in Italy. The idea of this study was prompted

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by the 'Manifesto on Artificial Intelligence' published in 2024 by Unione Nazionale Giovani Dottori Commercialisti ed Esperti Contabili (UNGDCEC). The Manifesto aims to shed light on the usefulness and vision of the relationship between CAs and IA, also listing possible opportunities, threats, and risks. Since the Manifesto only presents general opinions, we deemed it useful to deepen our knowledge of young CAs' experience. In this research, 'young accountants' are defined as CAs, trainees, and accounting experts under 43. This definition aligns with the Unione Nazionale Giovani Dottori Commercialisti ed Esperti Contabili (UNGDCEC) membership criteria, which includes professionals in the early or intermediate stages of their careers. The Union sets the age threshold at 43 to identify professionals still in the formative or developmental phase of their professional journey.

We employed purposeful sampling based on criterion and convenience (Patton, 2002), selecting young CAs interested in the phenomenon and easily accessible through direct contacts or a snowball approach. Between late June and mid-December 2024, six semi-structured interviews lasting 30 to 50 minutes were conducted (Appendix, Table 1 – www.sidrea.it/artificial intelligence-accounting). The discussions focused on the integration of AI into professional practice, associated benefits and risks, and the evolving skills and competencies required of CAs. All interviews were recorded and then transcribed.

Data analysis was an ongoing and iterative process (Patton, 2002). Following our research question, we inductively analysed the transcripts using a manual and open coding approach (Gioia et al., 2013) to identify key concepts and themes about how CAs approach AI. We started by open-coding the interviews and generating first-order concepts using words or short descriptive phrases based on the interviewees' language. Second, we grouped first-order concepts into second-order themes by combining primary codes that were conceptually similar, overlapped and related to the same theme. Third, we analysed similarities and differences among themes and gathered those related to the same issue into aggregate dimensions. Finally, we explored possible relationships between aggregated dimensions by adopting a sequential logic to capture causal relations (Sentuti and Cesaroni, 2024), which allowed us to identify which dimensions should be considered first or come later from a logical point of view. Following this approach, we reordered the aggregate dimensions into Antecedents, Process and Outcomes. Antecedents include three dimensions, i.e., factors promoting the use of AI tools, training activities carried out to learn to use AI, and new skills and competences acquired and needed to use AI. Process concerns how CAs in-

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tegrate AI into their professional activities and involves the aggregate dimension of AI adoption. Outcomes include three dimensions and refer to effects – in terms of benefits, risks, and challenges, CA-Client relationships – resulting from the integration of AI in the professional practice. Figure 1 (Appendix – www.sidrea.it/artificial intelligence-accounting) summarises the data structure with the first-order concepts, the second-order themes, and the aggregate dimensions ordered sequentially. Section 4 details the findings by describing the aggregate dimensions and using extensive interview quotes to support our data structure. This analysis helped us to better interpret the findings and answer our research question by rationalising how young CAs approach AI tools. Bringing together all the results, two different approaches were identified: horizontal and vertical. As detailed in section 5.1, these two approaches share certain dimensions with similar connotations, while also exhibiting distinct and unique dimensions.

4. Findings

4.1 The antecedents

4.1.1. Factors promoting the use of AI tools

Data structure reveals that the aggregate dimension 'factor promoting the use of AI tools' includes three themes: exploratory tech-mindset, desire to become more efficient, and knowledge-sharing among colleagues. All respondents have shown a proactive approach to integrating AI into their profession and a forward-thinking mindset fundamental to staying competitive in the rapidly evolving accounting field.

> *'My passion for technology has been crucial in preparing me for the AI challenges in my profession' (CA #1).*
>
> *'At first, I was driven by curiosity, and then, out of necessity, I got into AI due to my interest in experimenting with new technologies. Moreover, my colleagues and I frequently discuss ways to optimise our work and find new solutions for our clients' (CA #2).*
>
> *'My passion for technology and my willingness to simplify daily tasks drove me to explore AI tools. I focus on how AI can streamline operations, like automating invoice processing so that we can have more time for consultancy and creative work' (CA #4).*
>
> *'I started using AI tools because I naturally focus on optimisation. I can't stand wasting time and am always looking for ways to make things simpler. Whenever I come across tools or techniques that help save time, I'm immediately drawn to them' (CA #5).*

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'I have always been interested in digital tech, even back in university. Among my peers, I was often seen as the "tech-savvy" one, always curious about new advancements. I first heard about artificial intelligence 10-12 years ago, thanks to friends studying engineering, including one particularly brilliant friend who chose to study psychology to work in AI, viewing computer science as a tool rather than an end goal' (CA #6).

This implies that passion for technology, personal interest, and a desire to become more efficient can push professionals to explore and adopt innovative solutions such as AI tools. However, the desire to experiment with AI tools is also sustained by collaboration with colleagues that fosters the exchange of ideas and knowledge-sharing.

'I was only superficially aware of artificial intelligence and knew little about its professional applications. However, after talking with a colleague, my curiosity piqued, and I started using AI in my profession for small tasks' (CA #3).

'[…] the possibility to collaborate with colleagues nationwide has provided invaluable insights and opportunities that are otherwise limited locally' (CA #1).

4.1.2. Training

The dimension 'training' includes two themes: online courses and workshops organised by public and private institutions, and self-learning, online resources, tutorials and experimentation.

All the CAs interviewed affirmed that AI training is essential. They are mainly self-taught in AI use. YouTube tutorials were very useful in increasing their knowledge on the topic and webinars are appreciated for improving knowledge-sharing and making new professional relationships.

'AI generates results based on algorithms or online sources. Thus, expanding our understanding of AI tools is crucial to learning how to use them effectively and prevent technology from replacing human roles […] Success in the accounting and AI field requires continuous and ongoing commitment to improving one's skills and knowledge' (CA #1).

'I consider myself very self-taught. I learn a lot from my mistakes and enjoy experimenting with solutions to find the best one' (CA #4).

'Most of what I know about AI comes from trial and error. I started with basic tools, and over time, I've built my own knowledge. Online communities and forums have been essential to my growth with AI usage' (CA #2).

CA #1 also highlights the flexibility of online courses, which allow for personalized, self-paced learning. CAs #5 and #6 further emphasize the role of training programs, mainly offered online by professional associations like

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UNGDCEC, in providing up-to-date content, fostering innovation, encouraging peer learning, and bridging the gap between traditional skills and emerging technologies.

> *'When specific courses are offered by our association, foundation or the national order, I'm happy to attend. They help me prepare properly before tackling practical situations' (CA #5).*
>
> *'I've attended training courses, such as advanced Excel and Power BI. These are powerful tools with a lot of potential, and I'm still exploring their capabilities' (CA #6).*

4.1.3. New skills and competences

The dimension 'new skills and competences' includes two themes: understanding how to set up and manage AI tools and assess AI outputs, and the basics of data science and analytics.

According to CA #1 and #3, the ability to interact effectively with AI tools is becoming a key digital competency, which involves not only knowing how to use AI but also how to communicate with it, primarily through the creation of clear, goal-oriented prompts and iterative dialogue.

> *'Prompting skills enable users to frame questions or tasks in a way that maximises the relevance and accuracy of AI responses, and produce outputs that are aligned with specific needs, values or constraints' (CA #1).*
>
> *'Effective use of AI requires strong prompt-writing skills, including crafting clear, contextual prompts and using role-based instructions like 'Act as if you were a business consultant' to guide responses' (CA #3).*

Although AI tools are generally intuitive, basic knowledge of computer science and IT can be beneficial. CA #5 notes the importance of data modelling skills, such as importing, transforming, and relating datasets, while CA #4 and #6 highlight how even minimal IT skills can enhance users' ability to interact effectively with these technologies.

> *'A basic understanding of a programming language could provide an advantage, making it easier to customise tools, troubleshoot issues or optimise their functionality for specific professional tasks' (CA #4).*

CA #1 notes that some traditionally essential skills are becoming obsolete due to automation, for example, electronic invoicing reduces the need for manual VAT, income declarations, and financial statements. This shift raises concerns about the future role of accountants as basic tasks are increasingly

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handled by the Revenue Authority. CAs are thus urged to anticipate these changes, focusing on irreplaceable skills such as professional judgment, client trust, and contextual understanding of corporate and public contexts.

> *'Many accounting tasks will transform thanks to AI tools. However, as history teaches us, innovations have never eliminated human contributions. We must overcome the fear of the unknown by studying what AI can do and exploiting it to our advantage' (CA #1).*

4.2 How CAs integrate AI

The dimension 'AI adoption' includes two themes: the generalist adoption and the professional adoption.

Adoption-Generalist refers to basic tools, creation of content to be published on social networks or for meetings, conducting research, summarize and analyse documents, improving communication and language, and repetitive and time-consuming tasks such as data entry or meeting transcriptions. The most frequently used AI tools – Perplexity, Gemini, ChatGPT, Canva AI, and cloud computing – are fully integrated and routinely used in daily operations.

According to CA #1, these tools are used to create content to be published on social networks (such as LinkedIn and other platforms like Instagram and Facebook), ensuring targeted and effective communication, conducting research on specific and complex topics and summarising lengthy documents. CA #3 uses AI tools to create content and make meetings with clients more effective, particularly by offering reasoning-based inputs. Some tasks include producing reports, drafting emails or presentations, preparing documentation and creating other communication materials. Moreover, according to CA #6, AI tools can be used to prepare slides and rework content, such as adapting emails or brief communications, making the communication process more targeted, clear and engaging. This capability ensures that messages are tailored to the recipient's needs, thereby enhancing their effectiveness, for example, when updating clients on specific opportunities. AI tools can also be used for data entry tasks such as invoice recording, which should greatly improve efficiency in invoice processing:

> *'Adopting this tool won't solve all my job tasks; however, it will certainly aid in simpler tasks that constitute about fifty per cent of my job tasks' (CA #1).*

CA #1 declared that in this way, AI will transform CAs' jobs from data entry to data verification: the AI will handle the tasks, automating operations, while CAs focus on checking and verifying the information.

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The Adoption-Professional refers to the use of tools specialised in accounting that integrate AI functions, generating ideas, business data management, analysis, and reporting, and text generation and processing. According to CA #1, AI can be used to write specific code for business analytics tools such as Power BI and help turn data into insight and insight into action, to enhance business data management, analysis, and reporting to support brainstorming and generating innovative ideas. CA #2 uses AI to develop business models for clients, including hypothesis validation by testing different tools on the same questions; content creation, such as verbal or text to insert into the business plan preparation; brainstorming activities; looking for new business opportunities, such as searching for firms with specific characteristics that could need CA services; and examining legislative texts. Some CAs also combine the use of multiple AI tools.

> *'I can analyse vast amounts of data from various sources, providing insights into market trends, customer preferences and competitive landscapes' (CA #2).*
>
> *'I tested the AI by comparing pre-existing business plans with those generated using specific prompts to see if they could produce similar paragraphs to my writing' (CA #3).*

Moreover, CA #4 finds AI highly effective for researching information related to accounting issues, offering targeted results and clear insights into fiscal and legal texts. It also excels in answering specific queries, enabling a shift toward strategic tasks by automating routine work.

> *'I use advanced accounting software, which includes AI for tasks like invoice recognition. I also rely on ChatGPT (paid version) for more complex tasks, such as drafting precise technical reports like CTU documents' (CA #4).*

AI helps CAs reduce the time needed to draft, review and refine documents, tailor the language, verify content clarity and make corrections quickly, especially in specialised fields in which they have limited expertise.

> *'For the past two years, I've been exploring the field of corporate crisis management, an area outside my expertise. When I received my first assignment, I lacked the extensive know-how others in this field might have. To bridge that gap, I used AI tools like ChatGPT and Gemini to refine my legal document […]. What would typically take weeks of back-and-forth discussions with colleagues, I accomplished in just a couple of days, delivering a result I am confident met the required standards. This approach has been invaluable in helping me adapt to a specialised area beyond my original training' (CA #6).*

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4.3 Outcomes

4.3.1 Benefits of using AI

The dimension 'benefits of using AI' includes three themes: improving speed and enhancing efficiency of operational tasks, freeing up time to focus on strategic tasks and improving decision-making processes to address complex accounting challenges.

CA #4 claimed that the primary advantages of these tools include efficiency, time optimisation, and the ability to process and analyse large volumes of data. The speed of responses is precious, given the extensive information flow CAs must manage, including client-related data, large-scale analyses or comparisons between scenarios. This rapidity contributes significantly to improved workflows. Ultimately, AI tools optimise time and reduce errors in low-value activities, allowing professionals to spend more time and attention on high-value tasks.

> *'One of the main benefits includes saving time – accounting tasks get done so much faster. Then, there's error reduction because automation helps avoid mistakes. And lastly, I'd say we get better use of our data – we can pull more useful insights from the same information and share everything easily between software and colleagues, especially with cloud tools' (CA #5).*
>
> '*Automating repetitive tasks can save time and leads to accounting tasks being performance more efficiently and effectively by reducing human errors. Consequently, chartered accountants can focus on activities with high added value that require professional judgment, such as tax consultancy' (CA #1).*

In addition, AI is fast, and rapidity is essential in some activities and fundamental for fast-paced jobs, such as CAs.

> '*I use automatic meeting transcription to summarise critical information and assign tasks. This improves understanding of information and better time management, especially during virtual meetings' (CA #1).*
>
> *'AI is a transformative tool that streamlines routine tasks, enhances access to specialised information and improves the efficiency of complex document analysis, ultimately allowing greater focus on high-value consultancy work.' (CA #4).*

As reported by CA #1, interacting with AI is remarkably simple, as is talking to humans. In fact, at first, you need to provide context, but once you start the conversation, you can use normal human language for searches, unlike a database that requires specific keywords or codes.

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'*What you need to do, in terms of approaching AI tools, is contextualise the way the tool should reason and write the correct prompt, such as "think like an expert chartered accountant" or "marketing expert", etc.' (CA #1).*

Therefore, it is essential to fully understand the potential of AI and integrate it as best as possible in the accounting work processes because:

'*AI tools allow professionals to simplify their work and complete repetitive and manual tasks while becoming more productive and efficient' (CA #1).*

'One could speak of a "digital trainee", with a few caveats, that supports our work. Delegating routine tasks, such as accounting, and focusing on specialisations is a huge advantage. By eliminating the handling of large volumes of data and repetitive tasks, we have more time to develop advanced skills and offer added value to our clients' (CA #4).

'To date, I consider the AI tool to be an excellent trainee. It has to be trained and supervised, but it takes care of a lot of operational tasks, it is fast and it also gives me good ideas' (CA #3).

Finally, according to CA #6, advanced linguistic AI tools enhance communication by expanding vocabulary and reducing cognitive biases, thereby improving the quality, efficiency, and effectiveness of professionals' output.

4.3.2 Risks and challenges of using AI

The dimension 'risks and challenges of using AI' includes four themes: data privacy, hallucinations, maintaining the key human role, and time, money and trust constraints.

According to CA #6, AI tools rely on large volumes of data to learn and make decisions; they often require access to sensitive personal, financial or professional information. This creates serious concerns around how data is collected, stored, used and protected.

'This risk is heightened by uncertainties regarding who might access the uploaded data, whether authorised or unauthorised, and the potential vulnerability of such data to hacking. Caution to avoid sharing sensitive information such as confidential data in fields like bankruptcy or taxation is essential to avoid serious consequences' (CA #6).

AI tools might produce incorrect or misleading outputs, known as hallucinations, underlining that AI is not yet capable of replacing humans:

'*AI must be guided by humans because it doesn't have its own thoughts, values and beliefs; it must be trained by humans. […] I always pay close attention*

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to what AI generates due to the possibility of hallucinations. It is necessary to perform a final check on AI results to evaluate the accuracy of the answer and to maintain a certain level of caution and doubt. Therefore, the human role is still pivotal' (CA #1).

'The job demands constant updates, with laws and deadlines changing frequently, which makes AI insufficiently equipped to meet these needs fully. Furthermore, AI may reference outdated regulations (such as obsolete bankruptcy laws), highlighting the need for human oversight to ensure accuracy' (CA #6).

AI tools, designed for broad accessibility from a wide range of users regardless of their expertise or background, can produce plausible but inaccurate results, risking uncritical acceptance due to users' limited knowledge about the topic.

'*I have also experienced asking questions to AI tools and receiving incorrect answers. However, since the question was on a topic I knew very well, I could assess the response critically and avoid hallucination' (CA #1).*

'The risk of AI tools making mistakes is quite high; once, while compiling a document for a customer, the AI tool inserted the address of an unknown person. Fortunately, I was able to correct it' (CA #3).

'*Many AI users, including taxpayers, use these tools for fiscal tasks without the expertise to verify their accuracy. […] AI provides broad data access, but without proper expertise, it can lead to misinterpretation and poor decisions. A client's reliance on AI alone during a tax dispute led to avoidable penalties, highlighting the risks of overestimating AI's capabilities without professional oversight' (CA #6).*

The risk of misinterpreting AI-generated content is significant, especially for those who lack sufficient expertise in the field. Users may draw incorrect conclusions or take misguided decisions, leading to serious consequences. Thus, human expertise remains essential.

Not using AI can also represent a risk for CAs:

'Growing up in a chartered accountant family, I've seen the profession evolve over the last thirty years. Today, to keep up with technological and regulatory changes, it is essential to update your skills. Failing to adopt these advancements means lagging and missing out on opportunities to enhance your work with new tools' (CA #1).

CA #2 argues that AI just as past technologies like the steam engine, electricity or computers revolutionised various industries and improved human capabilities; AI enhances, but does not take the place of, CAs' abilities:

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'*Over time, these tools will become integrated into everyday life, but they will not replace human feelings, creativity and emotional intelligence useful to understand the reference context, even if we give it the right prompt' (CA #2).*

However, balancing work deadlines with AI learning is challenging.

'I have several courses covering topics from AI to advanced Excel usage, but time constraints often limit me. One of my goals is to carve out more time for hands-on learning to apply AI skills more effectively to my job' (CA #1).

'An obstacle is lack of time, both for training and integrating new skills and tools into daily workflows effectively' (CA #4).

Another significant challenge lies in the high costs and perceived complexity, which can discourage the adoption of AI tools:

'High prices imposed by providers can be particularly challenging for professionals working in small firms or independent professionals' (CA #4).

'In the past, costs were more predictable, such as those for purchasing a computer or software, with clear timelines for amortisation. Today, the situation is more complex because the benefits of these technologies are not always immediate, making it harder to justify the investment upfront' (CA #5).

'From my perspective, the economic and training costs are significant barriers – innovative tools can be expensive to purchase and require considerable time and resources to train our staff effectively. Additionally, suppose a new tool doesn't integrate well with our existing systems or takes too long to master; in that case, its use becomes impractical, especially for smaller or less structured organisations like ours' (CA #6).

For some respondents, one of the main challenges is a lack of awareness of change in the accounting profession because many CAs are hostile to technological evolution:

'Many chartered accountants still print electronic invoices for physical filing, though it's no longer necessary. This wastes time and space, filling up cabinets and creating storage issues. Others still go to the Revenue Authority with customers' delegation to activate electronic invoices rather than use the client's SPID or smart card' (CA #1).

'Honestly, there's a mix of curiosity and hesitation when using AI – almost a fear that the results might be inaccurate. This creates some initial distrust. But once people are able to practically verify the results and see that they're reliable, they start to trust it more. That said, the first reaction is usually a bit sceptical' (CA #4).

'My father is not interested in using AI and remains sceptical, especially after

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seeing the mistakes made by a client who used it inappropriately. While he is relatively tech-savvy compared to his peers, he prefers to rely on himself. He uses AI only for very limited tasks, like dictating emails, but dislikes the idea of reworking or depersonalizing content. His scepticism stems from a lack of familiarity with the tool and the difficulty of accepting concepts like customizing AI to match one's own writing style, which goes beyond the mindset of his generation' (CA #6).

In addition, CA #6 stated that scepticism could also be related to the reluctance of some professionals to share their expertise with AI tools. This stems from a fear of creating competition, as they worry that by providing their knowledge, the tools may become capable of replicating or even replacing their work. This concern highlights the need for clear boundaries and ethical guidelines to ensure AI complements rather than threatens professional roles.

CA #2 observes a divide in the profession: while many continue with traditional practices, others are embracing new specialisations such as crisis management, judicial administration, public sector auditing, supervisory boards and facilitated finance. With automation on the rise and limited AI knowledge, some older CAs risk falling behind. However, there is growing awareness of these challenges, and many are actively pursuing training to keep pace with change. The future seems to lie in integrating AI tools to maximise the time dedicated to high-quality work and personal interests through gradual, not abrupt change:

'This shift is particularly relevant for the newer generations, who prioritise efficiency and balance over excessive work hours. Unlike past norms of working many hours a week to gain experience, the focus is now on delivering quality work within reasonable hours, leaving room for personal life and family. […] Most professions will likely adopt greater digitalisation over the next two to five years, but I don't expect significant transformations for two reasons. First, a substantial generational gap exists within the profession, with older generations often holding key roles. Even if younger professionals adapt to change, the broader profession will only transform if those in leadership positions embrace it. Second, while technology advances rapidly, professionals integrate new processes more slowly. This natural lag means that sudden, sweeping changes are unlikely soon. Instead, the evolution will be gradual and incremental' (CA #6).

4.3.3 CA-Client relationships

The dimension CA-Client relationships includes three themes: client generational differences, misconceptions and resistance, perception of reduced service value and protecting professional identity.

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CA #1 tends to avoid emphasising the use of AI with clients while being more open about it with colleagues. With peers, CA #1 aims to demonstrate that they are up-to-date, innovative and open to potential collaborations. With clients, however, CA #1 currently prefers a more cautious approach:

> *'There is still limited knowledge and a certain level of scepticism toward artificial intelligence; the issue is that clients might perceive the use of AI negatively and believe the use of AI reduces the professional effort involved and, as a result, question the value of the service or expect to pay less' (CA #1).*

CA #2 takes a cautious stance on AI in client relations, noting that younger, tech-savvy entrepreneurs, particularly Millennials, are more open to innovation, while older clients tend to be less inclined to engage with AI.

> *'Unfortunately, older clients are sceptical, unfamiliar with the technology or resistant to change. As a result, openly emphasising the use of AI in professional services can lead to misunderstandings, such as underestimating the accountant's role, questioning the value of the service or showing distrust' (CA #1).*

A #4 emphasizes the importance of clarifying the evolving responsibilities of the profession to counter common misconceptions about accountants in the technological era:

> *'Some people think our work is as simple as "pushing a button", but that's far from the truth. The rise of technology and AI has multiplied our responsibilities, especially with compliance tasks. These tools help provide more data to tax authorities so the obligations we need to manage increase—a complexity that's often overlooked' (CA #4).*

To solve this issue, the respondent suggests reestablishing direct interactions with clients. As technology reduces personal contact, clients often lose sight of CAs' advisory roles:

> *'Regular phone calls or in-person meetings can help professionals reconnect with their clients on a personal level. By reintroducing these forms of direct communication, professionals can clarify their broader contributions, emphasising the expertise, advice and value they bring beyond the automated or routine tasks that technology might handle. This approach helps reinforce the professional-client relationship and ensures clients fully appreciate the depth and impact of their services' (CA #4).*

CA #5 explained that clients should be educated about the integration of AI tools into professional services. Not all clients are fully aware of these

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advancements; many still rely on outdated practices and expect basic services like manual invoice preparation. To address this, CAs should emphasise how AI tools enhance, rather than diminish, the value of their work. Instead, CA #2 mainly used AI with customers under 40 years old who positively welcomed these tools, as if it were completely obvious.

5. Discussion and Conclusions

5.1 Rationalising young CAs' approach toward AI tools

This study investigates how young CAs approach AI in their professional practice. Findings highlighted the factors promoting the adoption of AI tools, training activities, the new skills and competences CAs need to use AI tools, how CAs adopt AI, the derived benefits and main risks and challenges, and possible consequences on the relationship between CAs and clients.

Based on the findings, two main approaches to AI emerged: horizontal and vertical (Appendix, Table 2 – www.sidrea.it/artificial intelligence-accounting). These approaches share certain characteristics while also differing in others. Specifically, they vary in how five dimensions are characterised: training, new skills and competences, adoption, benefits of using AI and CA-Client relationship. Both approaches share two common dimensions: factors promoting the use of AI tools and risks and challenges of using AI.

For both approaches, factors promoting the use of AI tools include a deep CAs' passion for technology, fueled by curiosity and a desire to understand how things work. This curiosity flourishes in dynamic settings where CAs explore and experiment with emerging technologies to find innovative applications. Young CAs are drawn to AI tools to boost efficiency by streamlining tasks and simplifying work processes. Young CAs' propensity for technology is powered by collaboration with colleagues, believing that meaningful conversations often spark the best ideas. Whether it's a quick exchange or a deeper brainstorming session, young CAs actively engage in knowledge-sharing to support AI learning.

Training and new skills and competences are characterised differently in the two approaches. The horizontal approach typically involves developing a hands-on understanding of how to set up and manage AI tools, including crafting effective prompts and customising workflows to suit different needs. Just as crucial is the capacity to critically evaluate AI-generated outputs: rec-

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ognising biases, spotting inconsistencies and identifying areas for improvement. This blend of experimentation, prompt design and evaluative thinking forms the core of AI literacy, enabling users to face various tools and scenarios with confidence and creativity. The training underpinning this approach is mainly self-directed, relying on online resources, tutorials and experimentation; the generalist adoption is often driven by curiosity or personal needs, usually with broad and loosely defined goals – such as exploration, boosting personal productivity or engaging with digital culture. In such cases, self-teaching becomes a natural and flexible way to learn. Young CAs often learn by doing – experimentation, learning from mistakes and continuously improving their skills through hands-on exploration and self-guided discovery.

The vertical approach necessitates the acquisition of advanced competences, particularly in the domains of data science and analytics. Young CAs engaging with this approach are expected to develop foundational knowledge in data analytics and computer science, which enables them to understand and interact effectively with AI tools. Furthermore, proficiency in predictive modelling is essential, as it supports the ability to generate data-driven forecasts and simulate complex scenarios for strategic decision-making. Complementary to these technical skills are competences in data mining, critical thinking and communication. Therefore, these skills mark a significant evolution in the CA profile required within the accounting and consultancy sectors. Accordingly, the training underpinning the vertical approach to AI adoption is predominantly delivered through online courses and workshops in public and private institutions. This format aligns well with the specific needs of professionals engaged in advanced, goal-oriented learning pathways. A key advantage of such training modalities is flexibility – learners can access content anytime, supporting self-paced learning. Additionally, these programs are typically structured around clear professional objectives to facilitate the targeted development of competences for applying AI tools in complex, high-stakes professional contexts.

With regard to how CAs integrate AI in their practices, the horizontal approach is characterised by a generalist adoption and focuses on enhancing productivity by automating routine, repetitive or time-consuming tasks, and it reflects a broad, exploratory engagement with digital tools aimed at enhancing multiple facets of professional practice. Young CAs integrate a diverse range of general purpose AI platforms – such as AI Perplexity, Gemini, ChatGPT, Canva AI and Cloud computing – into routine activities, including content creation for social media across formats (emails, posts, images, videos and audio), document analysis, research and administrative tasks, and

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they are integrated into existing systems to streamline workflows and improve performance. This approach underscores a shift from manual and repetitive work toward more strategic and value-added functions. AI is leveraged not only for automation but also for improving communication, accessing specialised knowledge, adapting language for professional contexts and enhancing verification, oversight and quality control. In this way, AI enhances clarity, engagement, and effectiveness by understanding context and adapting content to different stakeholders.

In the vertical approach, a professional adoption prevails. AI tools are more than a digital trainee and become a "cognitive assistant" to support complex, analytical and creative tasks, fostering innovation and strategic decision-making. Young CAs use a diverse range of accounting tools that incorporate AI functionalities. These tools enable them to handle a wide array of advanced, accounting-related activities, including business model development and hypothesis validation, as well as strategic market and competitor analysis through AI-generated insights. AI also plays a key role in brainstorming and ideation for business planning, enhancing creativity and efficiency. AI tools are also employed for conducting in-depth legal and fiscal research, helping answer complex queries with greater speed and accuracy. Furthermore, they facilitate expansion into new or unfamiliar domains – such as corporate crisis management – enabling CAs to broaden their expertise and adapt to emerging challenges.

The benefits of the two approaches are different. In the horizontal approach, they concern operational efficiency and speed. By embedding AI tools into routine workflows, CAs enhance productivity and redefine the nature of professional tasks. One of the most immediate advantages is automating time-consuming tasks such as meeting transcriptions, scheduling and data entry. When managed by AI, these functions significantly reduce the risk of human error, improve consistency and allow for real-time documentation and retrieval of information, contributing to higher standards of accuracy and compliance. Moreover, AI tools are increasingly capable of parsing and analysing large volumes of complex data and documents – such as financial reports, legal contracts and technical literature – with a speed and precision far exceeding human capacity. This capability enables professionals to extract key insights without the required manual review.

The vertical approach offers several key benefits that significantly contribute to enhancing professional decision-making in the context of complex accounting challenges. First, AI tools facilitate the transformation of raw data into clear, actionable insights, enabling professionals to interpret large

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volumes of information with greater efficiency and accuracy. Second, AI users progressively build confidence and expertise, enabling more competent and autonomous use of AI. Finally, AI acts as a smart assistant, supports users in routine and cognitive tasks alike, and thereby amplifies their capacity to perform strategic analyses and informed evaluations. Therefore, these benefits foster improved decision-making processes and empower CAs to address multifaceted problems with greater agility and insight.

Both approaches present two main risks that must be carefully managed to ensure the responsible and ethical usage of AI tools. One of the primary concerns involves data privacy, particularly the potential for users to inadvertently share sensitive or confidential information during interactions with AI tools. This matter underscores the necessity of establishing safeguards to prevent data breaches and unauthorised disclosures. Additionally, issues related to the accuracy and reliability of AI outputs pose significant challenges. AI-generated responses may contain factual inaccuracies or 'hallucinations,' where the system produces plausible-sounding but incorrect information. Consequently, a thorough human review is essential to validate the accuracy of AI-generated content. However, this process is even more challenging and can be compromised if users lack the expertise to critically assess the results, thereby increasing the risk of misinformation or inappropriate decision-making. Another issue concerns the high cost of AI tools – such as software licenses, system upgrades and staff training – which is particularly burdensome for small professional firms with limited resources. The decision to delay investment in AI is also influenced by the difficulty in measuring the tangible benefits these tools can provide. This uncertainty makes it harder to justify the initial expense, especially when the tools require additional time and effort to learn, integrate into daily workflows and adapt to existing systems. As a result, many professionals hesitate to invest, fearing the costs may outweigh the short-term benefits. Moreover, there is widespread concern that over-reliance on AI could lead to a loss of control, a depersonalisation of their work, or even a diminished sense of professional identity. This hesitation is closely linked to a broader resistance to change and trust constraints, influenced by entrenched cultural practices, generational divides and scepticism about AI's reliability.

Finally, with regard to CAs-Client relationship, in the horizontal approach, AI is primarily applied to support or peripheral tasks that are not considered core to the traditional role of CAs. As a result, younger professionals, especially when working with digitally savvy clients, tend to be more open about using AI. This allows them to present themselves as efficient and digitally competent without raising concerns about compromising

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their professional identity. In contrast, the vertical approach involves using AI in core tasks such as accounting, auditing or strategic decision-making. In these cases, younger CAs often adopt a more cautious stance, mainly when clients are less familiar with digital tools. They may hesitate to disclose their use of AI due to concerns that it could be perceived as diminishing the value of their professional input, potentially leading clients to question fees or the level of human effort involved. These ambivalent behaviours stem from differences in clients' perceptions of AI usage and their literacy about AI tools.

Finally, the horizontal and vertical approaches can be interpreted through two lenses: a functional perspective, which focuses on practical utility, and an evolutionary perspective, which highlights professional growth and transformation over time. From a functional point of view, both approaches are seen as rational responses to concrete needs. The horizontal approach is driven by the desire to streamline repetitive tasks, improve workflow efficiency and enhance communication, especially in support or peripheral activities not central to the CA's traditional role. The vertical approach is also functional but oriented toward solving complex problems, enhancing strategic planning and extending professional capabilities in high-value, high-responsibility domains. From an evolutionary perspective, the two approaches reflect different stages of professional development and cultural transformation. The horizontal approach can be seen as an entry point into the digital transition, where professionals become familiar with AI through daily experimentation and gradually integrate it into their routines. It fosters digital confidence and literacy, preparing the ground for deeper transformations. The vertical approach represents a further stage of professional evolution, where AI is not just a tool for productivity but a "cognitive assistant" for decision-making, strategic analysis and innovation. It reflects a shift in identity, redefining the role of the CA in a data-driven and technology-rich environment. This view implies that some professionals may move from horizontal to vertical adoption as their experience and confidence grow – one becomes the evolution of the other. However, the functional and evolutionary perspectives are not mutually exclusive. AI adoption is often a hybrid process, with both functional and evolutionary elements, in line with the fluid and dynamic nature of professional transformation, where pragmatic needs and cultural shifts coexist and influence each other.

5.2 Implications and Limitations

This study offers theoretical and practical implications.

From a theoretical perspective, it contributes to the academic debate about the relationship between AI and CAs (Moll and Yigitbasioglu, 2019;

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Schmidt et al., 2020; Kokina et al., 2021; Rawashdeh, 2023; Odonkor et al., 2024) by revealing two approaches that young CAs adopt when faced with AI tools: horizontal and vertical. The analysis shows that young CAs, despite a lack of time and knowledge about AI, perceive AI tools positively due to their many benefits, although they also recognise certain risks (da Silva et al., 2023). Results confirm that AI provides new perspectives and opportunities that can simplify the CA profession. Nevertheless, AI results must always be critically evaluated as AI can generate nonsensical or inaccurate outputs due to errors in AI tool training or design phases (Hasan et al., 2021). Findings show that users without adequate expertise may have difficulty identifying these errors, leading to inaccurate decisions. However, the awareness of potential errors does not hide the effective AI value. The respondents highlighted the ease of AI tools, the rapidity of providing information and solving issues and the provision of comprehensive assistance. These findings align with previous research (Schmidt et al., 2020; Hasan, 2021; Emetaram and Uchime, 2021), which highlights how AI tools facilitate user interaction through natural language rather than codes or keywords, making information retrieval more intuitive and accessible.

From a practical perspective, this study offers several contributions. First, adopting AI is reshaping the accounting profession, requiring young Chartered Accountants (CAs) to continuously update their skills and reassess their roles. To navigate this transition, it is essential to implement targeted strategies for integrating new technologies into practice. Young CAs should acquire knowledge of AI and digital tools, including automation, intelligent software, and machine learning in auditing. Specialised training and certifications in emerging technologies can enhance competitiveness. Moreover, strong analytical and statistical skills are increasingly vital, as accountants take on responsibilities in data interpretation and strategic consulting. Second, despite increasing automation, the human element remains essential in maintaining client relationships. Strengthening soft skills – particularly communication and trust-building – will distinguish Chartered Accountants in a digitalised environment. As AI becomes further embedded in accounting workflows, risks such as algorithmic bias and inaccuracies necessitate human oversight. Addressing these challenges requires strong governance frameworks, including transparent AI decision-making, continuous auditing, and training to improve digital literacy and ethical awareness. Third, young CAs must proactively approach innovation by promoting AI adoption within their organisations and educating clients and peers on its benefits. Building networks with technology experts and engaging in AI-focused events supports ongoing learning and best practice implementation. This proactive

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stance is particularly crucial for individual professionals and small professional firms, which constitute the majority of Italian CAs (Register of Chartered Accountants and Accounting Experts, 2023) and often serve as key advisors to SMEs (Cesaroni and Sentuti, 2016). For these practitioners, leveraging AI can streamline routine tasks, enabling a greater focus on client engagement and the provision of value-added consulting services. Fourth, academic and professional institutions play a crucial role in preparing young CAs for the challenges posed by digitalisation. As CAs are increasingly expected to act as data analysts, technology interpreters and business partners (Jackson et al., 2023), collaboration with IT specialists becomes essential for developing and refining digital tools (Kroon et al, 2021). Universities should incorporate AI, blockchain, and advanced data analysis into accounting curricula, using innovative methods like case simulations and partnerships with tech firms to enhance practical learning. Professional bodies must also promote continuous education through structured lifelong learning programs, incentivised by professional development credits. The UNGDCEC could introduce targeted initiatives, such as hands-on workshops and mentorships, to further support the development of digital competencies. Finally, enhancing collaboration between academia and professionals is essential for aligning training with market needs. Partnerships among universities, businesses and professional associations can lead to more relevant curricula and learning pathways (Holmes and Douglass, 2022; Tettamanzi et al., 2023). Internships and apprenticeships in firms utilising AI-driven accounting practices can expose students to current industry developments. Strengthening these initiatives will better equip young CAs to integrate AI in their work, supporting the ongoing transformation of the accounting profession.

This study's main limitation is the limited sample size and heterogeneity, which may affect the findings. The analysed data are specific to the young CAs, and while they provide valuable perspectives, they may not fully capture broader trends or the diversity of CAs in terms of age, professional experience and career stages. Younger CAs may have a higher affinity with AI tools, while more experienced professionals may demonstrate more resistance to automation (Detzen et al., 2021; Assidi et al., 2025). Expanding and differentiating the sample would allow a more comprehensive understanding of this generational gap. Moreover, the perspectives of CAs can be highly influenced by geographic location, given that regulatory frameworks, technological infrastructure and AI adoption rates differ across regions (Saracco, 2022; Eurostat, 2025). Finally, not all CAs have the same interest, familiarity or proficiency with AI and digital tools (Abdallah et al., 2025).

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Some actively seek AI-driven solutions, while others rely on traditional accounting methods (Assidi et al., 2025). A more significant, diverse sample would help assess how these differences influence AI adoption patterns.

This study paves the way for future research in several areas, including the impact of AI on the relationship between CAs and clients, the evolution of traditional accounting practices and the implications of digitalisation for small accounting firms. Future studies should examine how AI influences client trust, service personalisation and accounting expertise's perceived value. Research could explore effective strategies for maintaining human engagement in an AI-driven environment and communication techniques to address client concerns and resistance to automation. Another critical research avenue is the transformation of accounting methodologies due to AI. Studies could analyse how automation is reshaping the role of accountants, decision-making processes, regulatory compliance and risk management. Moreover, identifying the new skills CAs need to stay competitive in a technology-driven profession is essential. Finally, while large accounting firms can invest in advanced AI solutions, smaller firms often face financial and operational challenges in adopting such technologies. Future research should explore the economic implications of digitalisation for these firms, particularly in relation to cost structures, pricing strategies, and market competitiveness.

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