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(Convocatoria 2024)**

The challenge of Artificial Intelligence for auditing

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THE CHALLENGE OF ARTIFICIAL INTELLIGENCE FOR
AUDITING

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This Study meets the specific relevance criteria for the disclosure of matters affecting the application of accounting and auditing standards and the exercise of the powers assigned to the ICAC, as well as the timeliness of its objectives, both in terms of their nature and scope.

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The selfless collaboration of these individuals and organisations was essential to the successful completion of the project, which gathered responses from over 530 respondents¹ and whose results are reflected in this report. We are grateful for the time and effort they devoted, which made this research possible.

¹ Although a greater number of responses were initially received, this report has been prepared based on a sample of 530 responses, with some excluded for various reasons.

List of abbreviations

ASEPUC: Asociación Española de Profesores Universitarios de Contabilidad [Spanish Association of University Accounting Lecturers].

CEAOB: Committee of European Auditing Oversight Bodies.

EFAA for SMEs: European Federation of Accountants and Auditors for Small and Medium Enterprises.

AI: Artificial Intelligence.

ICAC: Accounting and Auditing Institute (Instituto de Contabilidad y Auditoría de Cuentas – ICAC).

ICJCE: Instituto de Censores Jurados de Cuentas de España [Institute of Chartered Accountants of Spain].

INAA Group: International Association of Independent Accounting and Audit Firms.

DK/NA: Don't know / No answer.

REA-REGA: Registro de Economistas Auditores del Consejo General de Economistas [Register of Economist Auditors of the General Council of Economists].

ND: No Data.

1 Introduction

Artificial intelligence (AI) is transforming the audit profession, enabling auditors to conduct predictive analysis. According to the ICAEA2023² report, 97% of global respondents acknowledge the value of AI in auditing, emphasising its potential to improve the efficiency and effectiveness of audit processes. However, challenges persist in areas such as data quality, technical training, and available resources. While this technological evolution is promising, it also raises significant ethical and social issues that must be addressed in a comprehensive manner. Examining the relevance of AI in the field of auditing is particularly important due to the distinctive characteristics of the profession.

Auditing involves financial analysis, professional judgement, and risk assessment, all of which require deep contextual understanding. Implementing AI in this setting presents the challenge of integrating tools that not only automate tasks but also accommodate the complexity inherent in audit work.

Auditors are regarded as guarantors of financial integrity. The use of AI may affect perceptions of trust if clients do not understand or do not place confidence in AI-driven decisions.

Audit work includes labour-intensive tasks such as account reconciliation and the review of large volumes of transactions. AI can automate these activities, allowing auditors to focus on more strategic and analytical tasks. AI technologies are increasingly effective in detecting anomalous patterns that may indicate fraud or irregularities, which would be difficult to identify manually.

Auditors operate within strict regulatory frameworks and adhere to demanding ethical standards. AI implementation must comply with these requirements, adding further complexity and responsibility. The use of AI must ensure objectivity and guard against biases that could distort audit outcomes.

The audit profession therefore offers a unique context in which to explore how artificial intelligence is reshaping human work, particularly in tasks traditionally based on manual processes and professional judgement. The study by Fedyk, Hodson, Khimich, and Fedyk (2022), based on extensive analysis of CVs and interviews with audit partners, shows that investment in AI not only improves audit quality by, for example, reducing the frequency of restatements and the associated costs, but also contributes to medium-term workforce restructuring, primarily affecting operational roles. This gradual transformation underscores both the disruptive potential of the technology and the need to address its ethical and organisational challenges in a holistic way.

1.1. Existing research on AI in auditing

Recent studies, such as Law and Shen (2024), explore how AI is reshaping audit firms' operational strategies while also increasing demand for other auditor competencies, including professional judgement and effective communication. In this regard, the work of Fedyk *et al.* (2022) indicates that the use of AI has contributed to fewer financial restatements and enhanced overall audit quality.

Furthermore, the study by Munoko, Brown-Liburd, and Vasarhelyi (2020) highlights that the adoption of AI in auditing may reinforce unconscious bias and introduce new ethical risks if not approached with a critical and reflective mindset. These concerns are particularly relevant in Spain, where, according to the ICAC-ASEPUC (2023) study³, the audit profession is undergoing notable change, including increased female representation at entry levels, though barriers persist in senior positions.

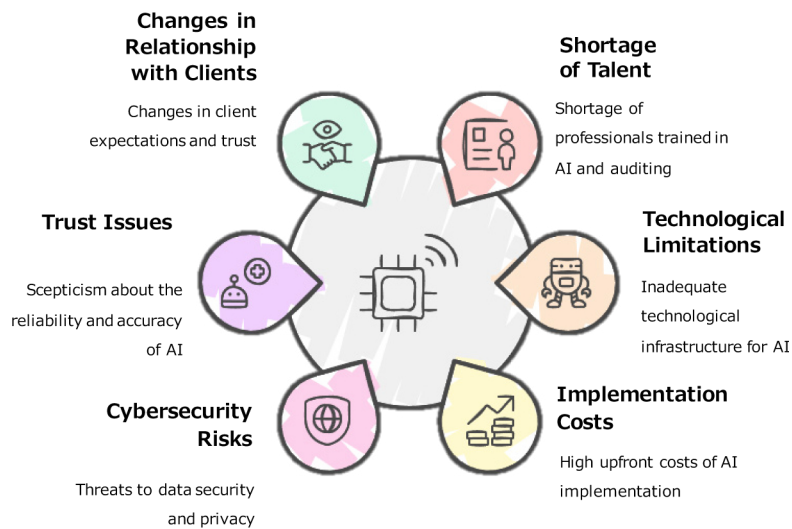
2 ICAEA2023: Survey on the application of AI in auditing. Authors: Chih Yuan Kuo, Ming Cheng Li, Feng Chia Chang.

3 Espinosa Pike, M., Amodarain Arteche, J., Barrainkua Aroztegi, Itsaso. (2023). El papel de la mujer en la auditoría de cuentas. Estudio ICAC-ASEPUC 2023 [The role of women in statutory auditing. ICAC-ASEPUC Study 2023].

are concerned about possible errors or biases in algorithms that could affect audit outcomes, which calls for a cautious and well-supervised approach to the design and implementation of these tools.

- **Change in the Firm-Client Relationship:** While AI can improve efficiency and offer competitive advantages, clients do not always perceive these benefits immediately. For audit firms, it is important to clearly communicate the added value that AI brings to their services, ensuring client trust in new technological processes.

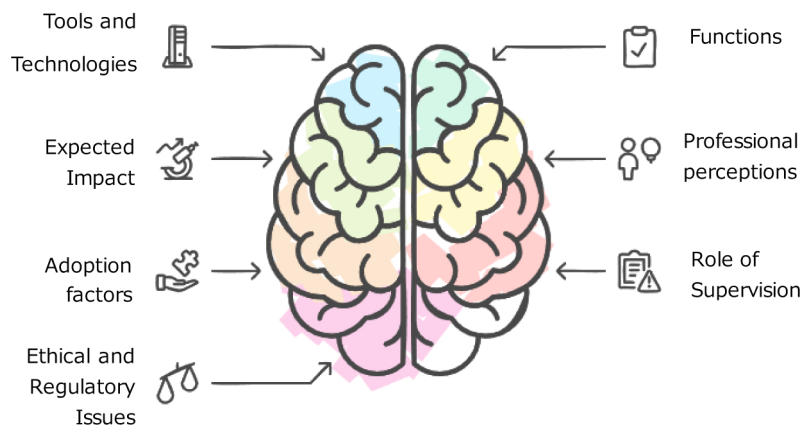
////ILLUSTRATION 1 Challenges in adopting AI in auditing



In light of these challenges, the main objective of this study is to analyse the use and perception of AI in the field of auditing. To this end, the report examines the current status of AI in this field, addressing the following aspects:

- **AI tools in auditing:** Identification of generative and non-generative AI tools, as well as technologies with AI capabilities used by audit firm employees, level of adoption and knowledge of these tools.
- **Areas of application:** Main functions and tasks where AI tools are used.
- **Impact on auditing:** Expectations about the influence of AI on the efficiency and quality of the audit process, as well as the transformation of traditional working methods.
- **Professional perception:** Opinions of audit firm employees on the effects of AI on their relationship with clients and on the fee structure.
- **Benefits and challenges:** Identification of the advantages and challenges associated with adopting AI in audit work.
- **Adoption Factors:** Elements that facilitate or hinder the implementation of certain technological tools.
- **Role of the supervisor:** Role of supervision in the AI integration process.
- **Regulation and ethics:** Views on the regulatory framework and ethical dilemmas posed by the implementation of AI in auditing.

ILLUSTRATION 2 Exploring AI in auditing



This study is based on data collected from a survey conducted on 530 active auditing professionals, representing all job categories and firms of various sizes.

With this report, we hope to provide an overview of the current scenario of the use of artificial intelligence in auditing, providing information of interest to auditors and academics, regulators and society in general.

1.3. Artificial Intelligence, tools and capabilities

AI is defined as the ability of machines to simulate human intelligence processes, such as learning, reasoning, and problem-solving. The Organisation for Economic Co-operation and Development (OECD) defines AI as a "machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments." Consequently, we define AI in auditing as machine-based methods used for representing, structuring, and modelling data (including large amounts of unstructured data), which allows for more accurate predictions and inferences (Fedyk et al. 2022).

What sets AI apart from previous data analysis techniques is its ability to model highly non-linear relationships in data and to process both large volumes of information and unstructured data, such as text and images. AI algorithms can complement other recent technologies that provide data analysable by AI (for example, drone images) or specific applications for AI algorithms (such as robotic process automation). Within AI, generative and non-generative can be identified. Also those that, while not being AI, include AI capabilities. Audit firms have incorporated or adapted some of these tools to their specific needs.

Generative AI: Technologies that create new content (text, images, code, etc.) from training data. Prominent examples include:

- **ChatGPT (OpenAI):** A tool based on language models that generates coherent and relevant text based on the queries received.
- **Claude (Anthropic):** Advanced generative model designed for complex natural language tasks.
- **Gemini (Google):** Generative AI solution focused on business support and task automation.
- **Microsoft Copilot:** Integrated into Microsoft products, such as Word and Excel, to assist in tasks such as text drafting or process automation.

Non-generative AI: Technologies that analyse and process data to provide information, detect patterns or automate tasks without generating new content. Examples include:

- **ACL Analytics:** Data analysis tool used to detect anomalies and financial risks.
- **CaseWare IDEA:** Audit analysis software that automates processes and enhances result accuracy.
- **MindBridge Ai Auditor:** A platform combining AI and machine learning to detect risk in financial audit engagements.

Tools that, while not strictly AI, incorporate AI capabilities:

- **Microsoft Power BI:** Data analysis and visualization tool, widely used to create interactive reports and automate processes.
- **Excel and Power Query:** Used for task automation through macros and advanced functions.
- **DataSnipper:** Specialised auditing software to streamline document reviews and data verification.
- **Alteryx and Tableau:** Data analytics tools that allow the integration and processing of complex information.
- **Microsoft Teams and Office 365:** Applications that incorporate AI capabilities, such as task suggestions and workflow automation.

AI tools developed by audit firms participating in the survey:

In addition to using commercial tools, several audit firms, primarily large ones, have developed their own AI-based solutions, designed to address specific audit needs. Some of the notable tools mentioned by the respondents include:

- **EY AI, EYQ and Helix:** EY tools for automating audit processes and analysing financial data more efficiently.
- **Clara AI (KPMG):** Designed to integrate AI into audit processes with a focus on security and confidentiality.
- **ChatPwC:** A customised chatbot developed by PwC to improve internal communication and interaction with relevant data.
- **GL.ai:** Analyses accounting transactions and generates explanations for unusual balances.
- **Deloitte Omnia:** A set of AI-driven audit tools that automate data analysis, risk assessment, and anomaly detection.

These in-house tools demonstrate how firms are investing in technology solutions tailored to their needs and those of their clients, while maintaining a focus on security and efficiency. The information presented here and the tools mentioned do not include all existing tools but those most mentioned by survey participants. For example, Deloitte's CortexAI tool is not mentioned by the survey participants and has therefore not been included. This list of tools will serve as a basis for understanding the current state of AI in auditing, highlighting both its capabilities and the areas that require further attention and development. With this context, the aim is to facilitate the understanding of the results presented in the subsequent sections of the report.

1.4. Analysis by size and by professional category

The study incorporates demographic variables (gender, age, professional experience, length of service at the firm) and organisational characteristics (firm size and professional category) to explore the perceptions of audit firm employees about AI and its implementation. The main analyses in this report focus on professional category and firm size, while cross-references by gender and experience are included, in most cases, as supplementary analyses in annexes located at the end of the report.

The professional category options that we have proposed for the respondents to classify themselves are as follows:

- Assistant
- Senior Assistant
- Manager
- Director
- Partner
- Other

It should be noted that the classification has been carried out entirely by the respondents themselves, without us making any changes or adaptations. We have worked exclusively with the categories that they have provided us.

The firm size options into which we have grouped the firms are:

- Small: from 1 to 20 employees
- Medium: from 21 to 100 employees
- Large: over 100 employees
- Big 4: Deloitte, EY, KPMG, PwC

Methodological challenges in the comparison by size

- Heterogeneity in the distribution of roles:
 - In small firms, the partners take on managerial roles (Bennett & Hatfield, 2018), whereas in Big 4, the proliferation of intermediate roles makes standardisation difficult.
- Non-homogeneous sample:
 - Overrepresentation of *Managers/Directors* in Large firms vs. prevalence of *Assistants/Seniors* and *Partners* in Small firms.

The lack of organisational uniformity calls for caution in extrapolations.

1.5. Sources of information, methodology and structure of the study

The survey participants are employees of audit firms of all sizes. The survey has been made available in both Spanish and English in order to facilitate international participation. The survey was disseminated through different channels:

- **Social media:** LinkedIn was used as the main dissemination platform, including direct messaging to active audit professionals.
- **Institutional campaigns⁶:** We have been supported by various national and international organisations, such as:
 - **ICAC, REA-REGA and ICJCE** in Spain.
 - **EFAA for SMEs, INAA Group and CEAOB** in the international sphere.
- **Sectoral events:** The survey was promoted at congresses, conferences, and forums organised by these institutions.
- **Newsletters:** The survey was disseminated through newsletters of the above-mentioned entities.⁷
- **Academic networks:** The MACAM alumni network⁸, with more than 500 alumni, also supported the dissemination of the survey.
- **Personal contacts:** The personal contacts of the report authors, mainly academics, such as professors who have put us in touch with auditors' associations and professionals who were part of a network-association of auditors who have promoted the survey in these networks (e.g. Audit Firm).
- **Direct Email:** All ICJCE and INAA Group members were contacted by email.

The report presents the results of 530 valid surveys. The survey was available on Google Forms from 12 September. The date of the last survey included in this report is 25 November 2024. The survey is provided to respondents in Spanish or English depending on their nationality (see Annexes 1 and 2 for details of the countries and cities where the respondents work).

The questions have been prepared by the report's authors following the challenges mentioned in the previous section. The survey consists of 25 questions with subsections organised into topic areas. It also includes general questions about the participants and their firms. Upon accessing the survey, participants find a summary of the objectives, information on confidentiality and anonymity, the estimated duration (10 minutes), and some basic instructions for completing the survey.

This report is structured into four sections (in addition to Annex 5) that analyse the perception and impact of AI on auditing.

- **Section 2: Demographic and employment data of respondents.** The profile of the survey participants is presented, including gender, age, professional experience, length of service at the firm and job category. The composition of the participating firms is also analysed according to their size and geographical distribution. Annex 3 complements the analyses of this Section 2.
- **Section 3: Level of expertise and training in artificial intelligence.** The extent of AI adoption in audit firms, the training received by professionals, and the most commonly used tools are

6 In particular, the survey was promoted through the following auditor participation forums: (1) 12th Forum for Small Audit Firms organised by REA Auditores, the Andalusian Council of Economists' Associations and the Association of Economists of Huelva (19–20 September 2024); (2) 2nd Conference on Technology Applied to Statutory Auditing of the General Council of Economists organised by REA Auditores (4 October 2024); (3) 27th Audit Day organised by ICJCE (9 October 2024); (4) 26th National Audit Congress held in Las Palmas de Gran Canaria and organised by ICJCE (20–22 November 2024); (5) 15th AuditMeeting organised by REA Auditores (28–29 November 2024); (6) INAA AGM Panama (6–8 November 2024).

7 In addition, the survey was shared via: the EFAA for SMEs newsletter no. 22 of November 2024 ([link](#)) and its X account (formerly Twitter), and the newsletter of the General Council of Economists of 22 November 2024 ([link](#)).

8 MACAM is an official Master's Degree jointly delivered by the Autonomous University of Madrid and the University of Alcalá de Henares, in collaboration with the Instituto de Censores Jurados de Cuentas de España through the UAM–Auditores Madrid Chair. MACAM is recognised by the ICAC as an accredited training programme for statutory auditors. All students complete curricular placements in audit firms during the second year of the master's programme, and the vast majority go on to pursue careers in auditing. The master's degree began in the 2010/2011 academic year.

examined. In addition, the main obstacles and concerns in the implementation of these technologies are identified. Annex 4 complements the analyses of this Section 3.

- **Section 4: Impact of AI on the firm-client relationship.** It explores how the implementation of AI is affecting the interaction between auditors and clients. Perceptions about the quality of reports, confidence in technology, and possible changes in the structure of audit fees are analysed. Annex 4 complements the analyses of this Section 4.
- **Section 5: Perception of AI implementation and regulation.** It examines respondents' views on the needs for regulation and support for AI training and implementation.
- **Annex 5: Presents international analysis on the use of AI in auditing.** The analyses presented in the report are complemented by a comparison between the responses of respondents working for audit firms in Spain and those working in other countries. This is a partial and preliminary analysis that will need to be completed in the future.

This approach will provide an understanding of the current state of AI in auditing, its challenges and opportunities, and practitioners' perceptions of its future in the sector.

2 Demographic and employment data of respondents

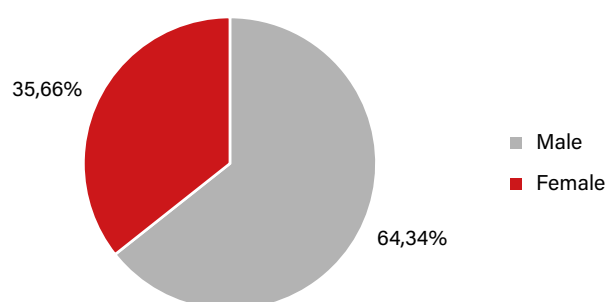
This section presents the profile of the audit firm employees who participated in the survey, including their gender, age, professional experience and the structure of the firms they work for. For ease of reading, some of the graphs detailing gender differentiation for sections 2.1. and 2.2. are shown in Annex 3.

2.1. Respondent profile

2.1.1. Gender and age

A total of 530 respondents were surveyed in the report. The breakdown of survey participants shows a higher representation of people from the male gender (341 people), representing 64.34% of the total, compared with people from the female gender (189 people) who make up 35.66% of the total [Figure 1]. Overall, these data reflect a male predominance in the sample analysed.

///FIGURE 1 Gender of respondents



The age distribution of the employees from the surveyed auditing firms provides valuable information about the demographic composition of the profession and allows the identification of relevant generational trends in the sector. The analysis of the age distribution of the respondents, whose ages range between 20 and 79 years, shows an average of 38 years with a varied distribution among generations (Figure A3. 1).

- 33% belong to Generation Z (1997-2012),
- 31.89% are Millennials (1981-1996),
- 25.47% are from Generation X (1965-1980),

- 8.64% are Baby Boomers (1946-1964).

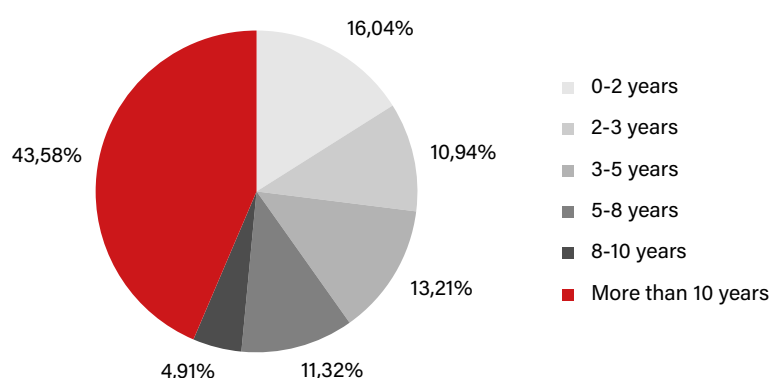
The high representation of young generations indicates a strong presence of respondents in the early stages of their professional career.

2.1.2. Professional experience and length of time at the firm

In terms of the number of years that respondents have worked in the audit area, the data shows a significant distribution in the categories of more than 10 years (231 respondents, 43.58%). This suggests that most participants have extensive experience in the field, with a strong representation of professionals with more than a decade of experience. Employees with less than five years' experience account for 40.19% of all respondents [Figure 2]

- 40.19% have less than 5 years' experience,
- 16.23% fall in the intermediate range (5–10 years),
- 43.58% have more than 10 years' experience in auditing.

//// **FIGURE 2** Audit experience



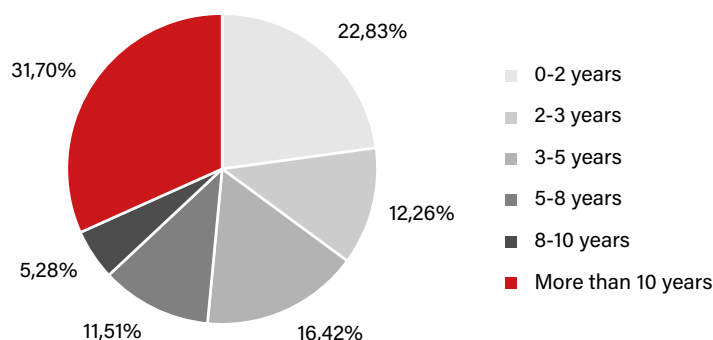
For more details, see Figure A3. 2 in Annex 3 showing the distribution of respondents by years of audit experience and also by gender.

In the analysis of respondents' length of service at their current firm, the results show that most participants have been with their organisation for a moderate or extended period. The group with more than 10 years at their current firm includes 168 respondents (31.70%), representing a significant share of professionals with a long history at their firm [Figure 3]. At the same time, there is significant representation of those with less time at their firm: 121 respondents (22.83%) have 0–2 years, and 87 (16.42%) have 3–5 years.

- 51.51% have under 5 years at their firm,
- 16.79% fall in the intermediate range (5–10 years),
- 31.70% have been with their firm for more than 10 years.

These data suggest that a significant portion of audit firm employees choose to switch firms after a few years of experience, which could demonstrate the mobility of the sector. For more details, see Figure A3. 3 in Annex 3 showing the distribution of respondents by years of experience in the current firm and also by gender.

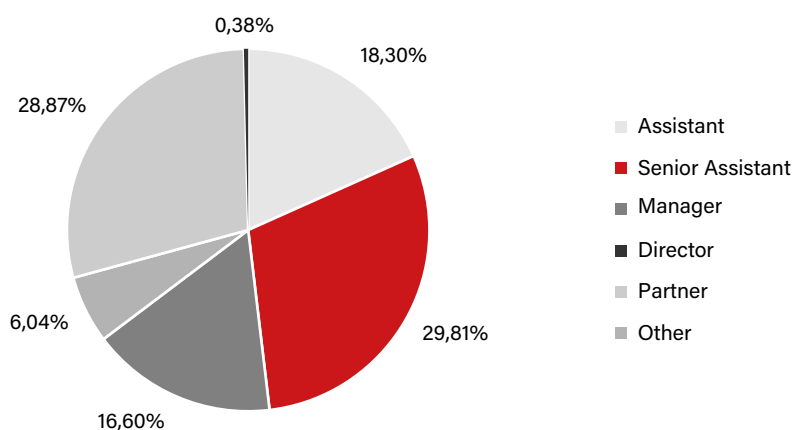
////FIGURE 3 Experience in current firm



2.1.3. Professional category

The data presented in Chart 4 reflect the distribution of respondents according to their position within the organisation. The distribution by professional categories of respondents shows a concentration in Senior Assistant roles (158 respondents, 29.81%) and Partners (153 respondents, 28.87%). Next, in order of highest to lowest representation, we also find Assistants (18.30%), Managers (16.60%), and Directors (6.04%). The Other category is minimally represented, with only 2 respondents. For more details, see Figure A3. 4 in Annex 3 showing the distribution of respondents by professional category and also by gender.

//// FIGURE 4 Professional category of respondents



2.1.4. Geographical distribution

The survey results show a diverse geographical distribution of where respondents work, both at country and city level⁹. Annex 1 shows the respondents by country. The data show a clear predominance of respondents working in Spain, accounting for 442 out of 530 total observations, i.e. 83.4% of the total. The remaining 16.42% work abroad (87 respondents), spread over 33 countries. Of these, the most significant representation is from the Netherlands, Italy, Luxembourg, Portugal and Guatemala.

⁹ Of the 530 total surveys, some do not include city information, and in other cases, respondents have indicated multiple cities. Therefore, small discrepancies can be observed between the total number of surveys and the total number of respondents per city.

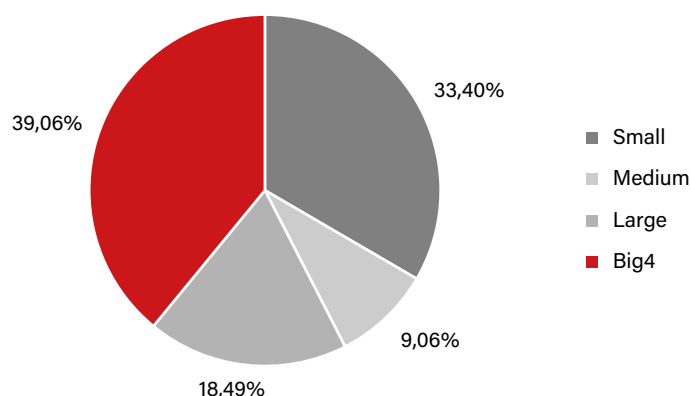
Annex 2 presents the breakdown by cities where respondents work, divided between Spanish and international locations. Madrid is by far the city with the largest number of respondents, with 259 participants (58.2% of the total number of respondents in Spain). Barcelona is the second most represented city, with 47 respondents (10.6% of the total in Spain). Valencia (15) and Murcia (13) also stand out among medium-sized cities as the cities with the highest number of respondents. Internationally, the most represented cities are Luxembourg (8), Guatemala (5), Amsterdam (4), Milan (4), Vienna (4), and Buenos Aires (4).

2.2. Profile of participating firms

2.2.1. Firm size

The distribution by audit firm size¹⁰ [Figure 5] shows that, among our respondents, the majority, nearly 40 percent, work at a Big 4 firm. Small firms account for one third of the total (33.4%). Large firms (e.g. BDO Spain, Grant Thornton) also represent an important part of the respondents (almost one fifth 18.49%). Medium-sized firms are the smallest segment, with less than 10% of the total. For more details, see Figure A3. 5 in Annex 3 which presents the participation of respondents in detail by firm size and also by gender.

//// **FIGURE 5** Distribution by firm size



2.3. Summary of demographic and employment data.

Section 2 of this report presents demographic information on the respondents and their audit firms. In total, the survey collects information from 530 respondents. The main demographic and employment characteristics of respondents and participating firms are summarised below.

- **Male dominance in the sector:** 64.34% of respondents are male and 35.66% female, reflecting a male predominance in the sample. This imbalance widens at higher levels of experience and responsibility, which is evidence of persistent barriers to gender equality.
- **Generational distribution:** The majority of respondents belong to Generation Z (33%) and Millennials (31.89%), highlighting a significant participation of young professionals. On the other hand, older generations (Generation X and Baby Boomers) are better represented in leadership roles, which demonstrates the natural hierarchy of the profession.

¹⁰ Small: 1 to 20 employees; Medium: 21 to 100; Large: more than 100 employees; and Big 4 (EY, PwC, KPMG, Deloitte).

- **Professional Experience:** 43.58% of respondents have more than 10 years of auditing experience. Participants with fewer than five years' experience account for 40.19%. This is evidence of a balanced composition of young and experienced talent in the sample.
- **Length of time in the firms:** 31.7% of respondents have been with their current firm for more than 10 years. The proportion of women decreases significantly in the more senior ranks, which may also reflect challenges in retaining and promoting female talent¹¹.
- **Professional distribution:** Almost half of the respondents (48.11%) occupy entry-level positions (Assistant and Senior Assistant).
- **Geographical distribution:** Most of the participants in the survey work in Spain (83.40%), with Madrid standing out with 58.2% of the total in the country. Internationally, the Netherlands, Italy and Luxembourg stand out as the main countries represented in the sample.
- **Participation of firms by size:** Big 4 firms account for 40% of respondents, while small firms account for 33.4%, large firms for 18.5% and medium-sized firms for less than 10%.

¹¹ The 2021 report "Gender Diversity in Statutory Auditing" by the ICJCE shows that women account for less than 25% of partners in audit firms in Spain. This figure suggests that although women may be drivers of innovation, structural barriers continue to limit their access to senior roles, which could influence their participation in adopting technologies such as artificial intelligence.

3 Level of expertise and training

In this third section, we asked respondents whether the audit firms they work for have developed global AI strategies, what AI tools they use in their roles within the firm, their level of satisfaction with the use of these technologies, as well as the obstacles and concerns they identify in the use of these tools. In addition, it specifically explores the perception of employees of audit firms regarding aspects related to cybersecurity, which plays a significant role with the implementation of this new technology, as the challenge of cybercrime increases exponentially compared to the previous era¹².

3.1. Current status of AI in the organisation

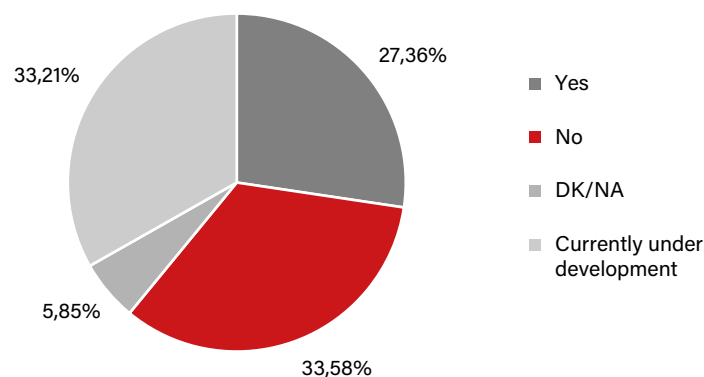
3.1.1. Comprehensive firm-wide AI strategy

On the question "Has your firm developed a comprehensive firm-wide AI strategy?" Figure 6 shows that 145 respondents (27.36%) stated that their firm has already developed a strategy; 176 respondents (33.21%) indicate that the strategy is under development, suggesting that many firms are in the implementation stages; and, 178 respondents (33.58%) respond that their firm does not have a comprehensive AI strategy, reflecting a significant gap in the adoption of these technologies.

As shown in Figure 7, the composition of firms that have developed a comprehensive firm-wide AI strategy shows a strong concentration in the Big 4, which account for 80% of the total number of firms claiming to have such a strategy in place. This rises to 93.10% if we are talking in general about large firms, i.e. more than 100 employees.

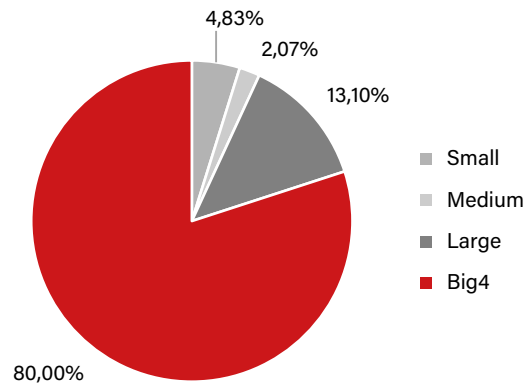
The high percentage of firms without an AI strategy (33.58%) could reflect barriers such as lack of technological or human resources, or lack of knowledge/reluctance towards the advantages that AI can offer to audit. In contrast, the Big-Four stand out as leaders in implementing these strategies (80%), probably due to their ability to invest in advanced technology and align their organisational culture with innovation.

//// **FIGURE 6** Firms with AI strategy in place



12 Kumar, S., Gupta, U., Singh, A. K., & Singh, A. K. (2023). Artificial Intelligence: Revolutionizing Cyber Security in the Digital Era. *Journal of Computers, Mechanical and Management*, 2(3), 31–42.

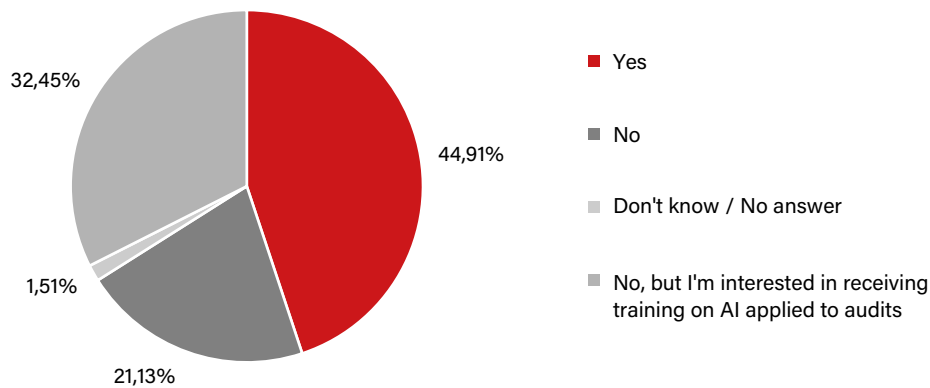
//// **FIGURE 7** Firms by size with AI strategies already developed



3.1.2. Employee training in AI

In the question "Have you received specific training from the firm where you work on the use of any AI tool/software for the performance of your duties?", Figure 8 shows that 44.91% of the respondents (238 people) have received training from their firm. However, 53.58% (284 persons) have not received any training at all.

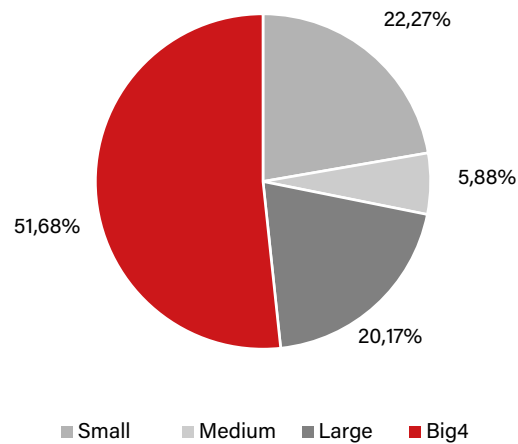
//// **FIGURE 8** AI training at the initiative of the firm



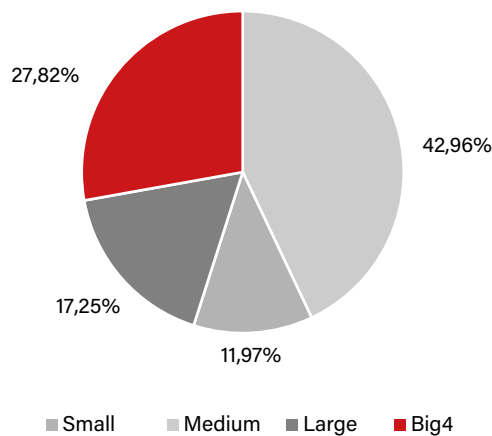
Of the respondents who reported having received training from the firms in which they work, 58.54% were men and 41.46% were women. The average number of training hours is 12.68 hours per year.

The data on AI training according to the size of the audit firms in Figure 9 show that the employees of the Big 4 are the most numerous when it comes to stating that they have received AI training. In contrast, according to Figure 10, the employees who report not receiving any AI training mostly belong to small firms. In the Big 4, the number of employees without AI training is also significant.

////FIGURE 9 Employees with AI training by firm size



////FIGURE 10 Employees without AI training by firm size



3.1.3. Regular use of AI in audit functions

On the question "Do you ever use AI in the performance of your duties?", Figure 11 shows that 61.51% of respondents indicate that they do use AI in their work. In contrast, 36.79% say that they do not use AI in their functions. 1.70% of respondents did not know or did not answer. For more details, see Figure A4. 1 and Figure A4. 2 in Annex 4 showing AI use by gender and age.

//// **FIGURE 11** Use of AI in the performance of their duties

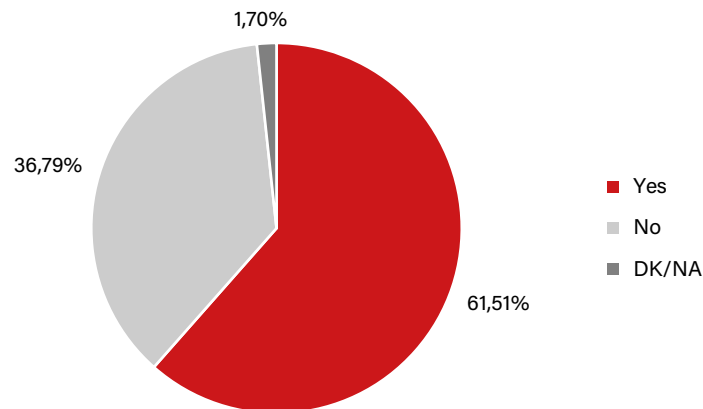
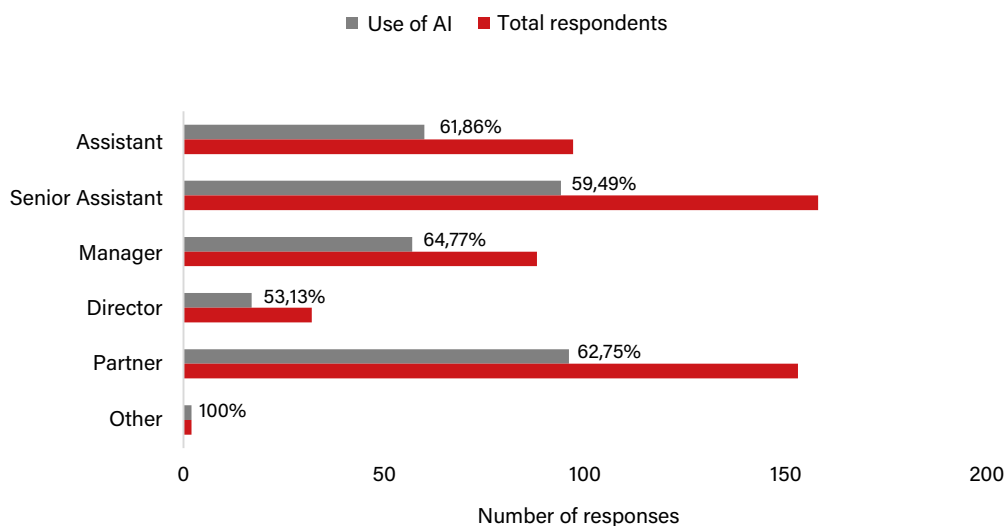


Figure 12 shows the proportion of respondents who say they regularly use AI in the performance of their duties, broken down by professional category. The results show, in descending order of relative weight, that 64.77% of Managers regularly use AI, followed by Partners (62.75%), Assistants (61.98%), Senior Assistants (59.49%) and, finally, Directors (53.13%). These data show a significant use of AI tools by all professional categories, although with slight differences according to professional level. For all levels of responsibility, more than half of the respondents use AI in their regular work. This is a very interesting result that illustrates the relevance and acceptance of these new technologies in a profession traditionally known for its focus on manual and structured procedures. The widespread adoption of AI across all professional categories suggests a significant change in the way audits are conducted, highlighting the potential of this technology to optimise processes and improve accuracy in day-to-day tasks.

//// **FIGURE 12** Use of AI by professional category



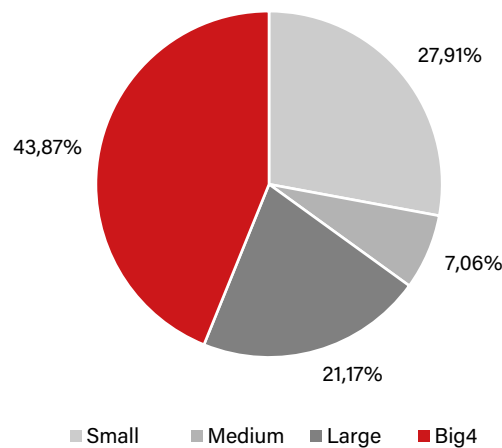
↑ Note: The percentage (%) represents the number of people (according to professional category) / total surveyed (according to professional category).

Figure 13 shows that daily use of AI varies considerably depending on the size of the firm. In large firms and Big 4 firms, the use of AI is more frequent, reflecting a more widespread adoption of advanced technologies in these organisations. This may be due to the resources available, the in-

creased capacity to invest in emerging technologies and the need to optimise processes in larger firms, which facilitates the integration of AI into their daily operations.

In contrast, in small and medium-sized firms, the use of daily AI is much lower. This suggests that firms with fewer resources and staff have greater difficulties in implementing and leveraging AI on an ongoing basis. In small firms, the lack of investment in advanced technology and the shortage of specialised personnel may limit their ability to adopt AI on a daily basis, highlighting the gap in access to emerging technologies depending on the size of the firm.

//// **FIGURE 13** AI use by firm size



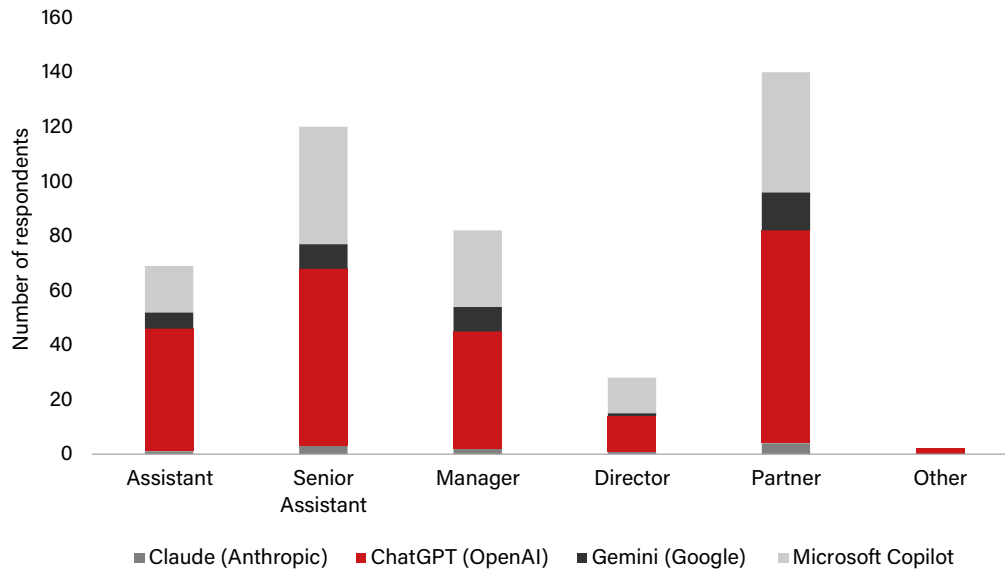
3.2. Most widely-used AI tools

Respondents who confirmed the use of AI in their roles were specifically asked about a list of tools commonly used in auditing. In particular, they were asked about the use of the most common generative AI tools, such as: Claude (Anthropic), ChatGPT (OpenAI), Gemini (Google) or Microsoft Copilot. Also about non-generative AI tools, such as: ACL Analytics, CaseWare IDEA, or MindBridge Ai Auditor.

As can be seen in Figure 14, among generative AI tools, ChatGPT (OpenAI) stands out as the most widely used tool across all professional categories. Male Partners are the most frequent users. Microsoft Copilot also has a high usage rate, being especially popular with Partners and Senior Assistants.

Figure 15 shows the use of non-generative AI tools by professional category. CaseWare IDEA is the most widely used tool across all professional categories, particularly among Managers and Partners. ACL Analytics is the second most widely used by all audit firm employees at all levels and mainly by Managers, followed by Senior Assistants and Partners. For more details, see Figure A4. 3 and Figure A4. 4 in Annex 4 where the use of these tools can be seen by professional category and also by gender.

//// **FIGURE 14** Generative AI by professional category



//// **FIGURE 15** Non-generative AI by professional category

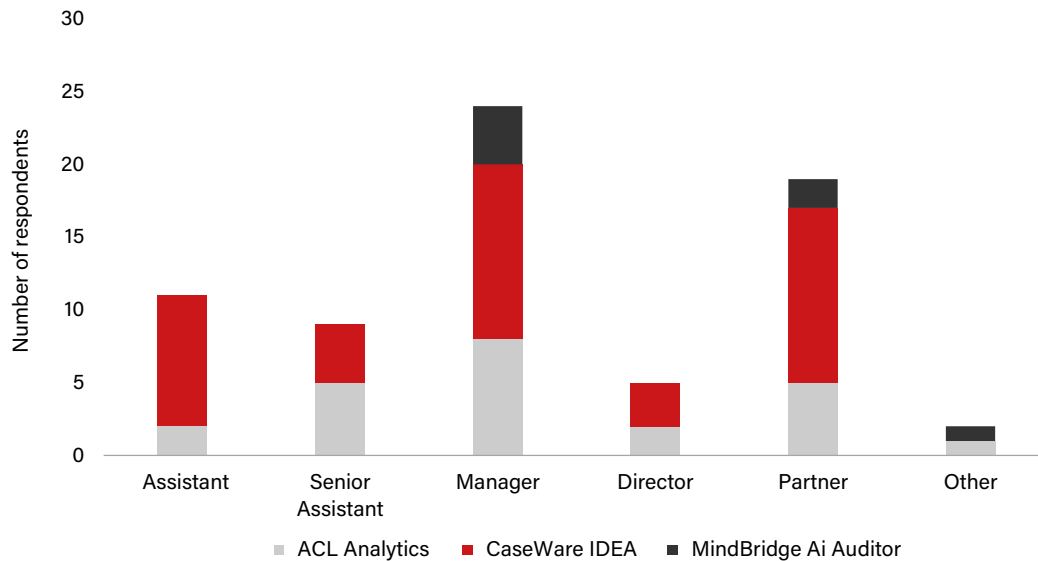


Figure 16 shows the use of generative AI by firm size. ChatGPT (OpenAI) is the most widely used generative AI, with significantly more respondents compared with other tools. Its use is predominant in Big 4 firms, followed by large firms, with lower adoption in medium and small firms. Microsoft Copilot is the second most widely used tool, with a similar pattern: higher adoption in the Big 4, followed by large firms and lower adoption in medium and small firms. Claude (Anthropic) and Gemini (Google) have much lower adoption, with Gemini used mainly by large firms and Claude having almost no presence in the sector. The Big 4 and large firms are the main users of generative AI, suggesting that these technologies are more widespread in firms with greater capacity to invest in technological innovation.

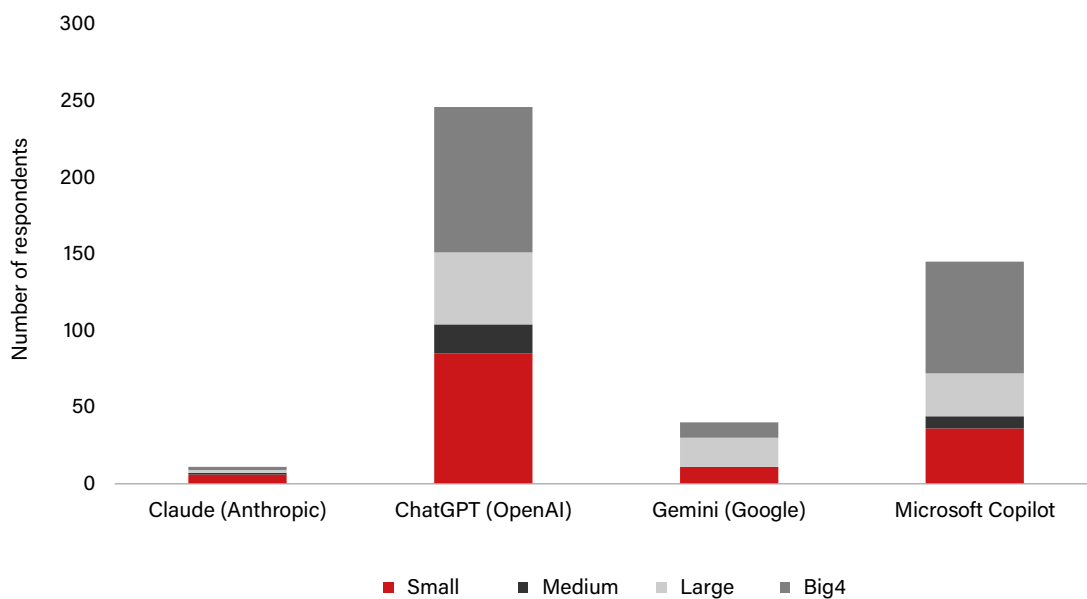
Figure 17 shows the use of non-generative artificial intelligence tools in auditing by firm size (Small, Medium, Large and Big 4). CaseWare IDEA is the most widely used non-generative tool in auditing. It is predominantly used by large firms and Big 4 firms, with lower adoption in small and medium-sized firms. This suggests that CaseWare IDEA is a well-established tool in audit firms with greater resources and experience in implementing advanced technology solutions.

ACL Analytics is the second most widely used tool, albeit with lower adoption compared to CaseWare IDEA. It is mainly used in the Big 4 and large firms, but also shows a certain presence in medium and small firms. This indicates that ACL Analytics has a more balanced adoption compared with other tools, probably due to its flexibility and applicability in different types of audits.

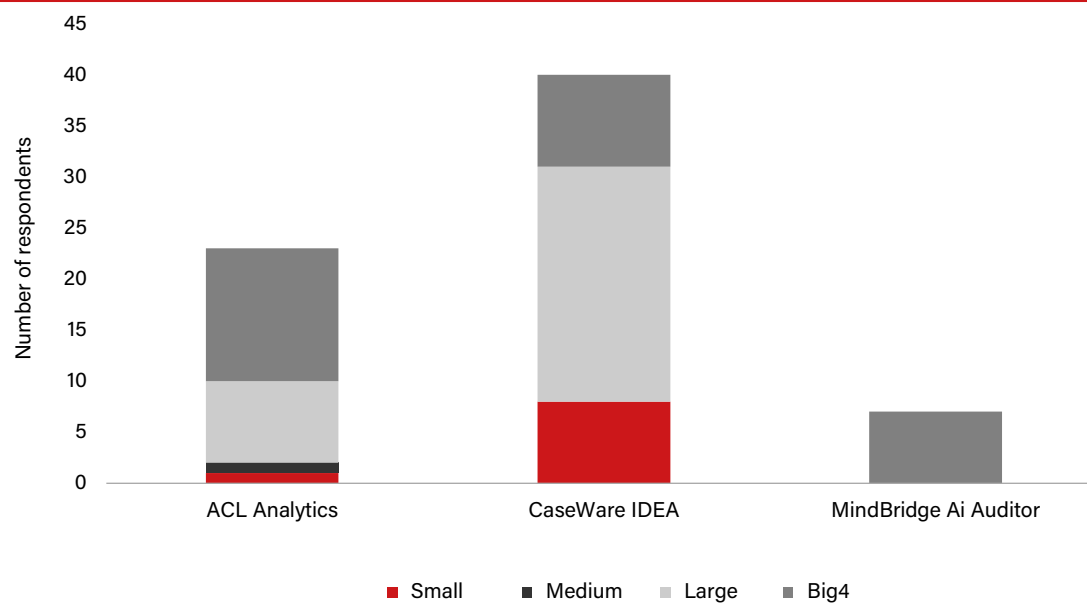
MindBridge Ai Auditor is the least widely used of the three tools. Its use is very limited and appears to be concentrated in Big 4 firms, with virtually no adoption in smaller firms. This could indicate that MindBridge Ai Auditor is an emerging or highly specialised technology, with barriers to entry limiting its adoption in smaller firms.

For more details, see Figure A4. 5 and Figure A4. 6 in Annex 4 where details on the use of these tools by firm size and also by gender can be found. Figure A4. 7 to Figure A4. 10 in Annex 4 present a more extensive analysis of the use of these tools in terms of years of experience in the audit sector and years of experience in the current firm.

//// **FIGURE 16** Generative AI by firm size



//// **FIGURE 17** Non-generative AI by firm size



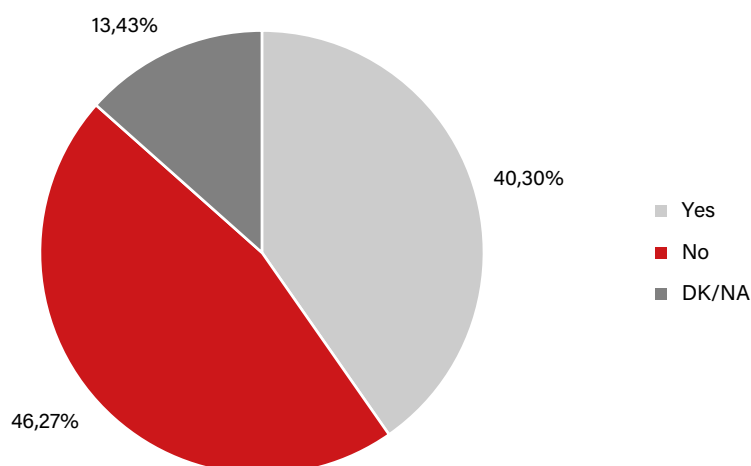
3.3. Other tools used in auditing

Respondents were also asked about tools that are not strictly AI but that incorporate AI-related functions in their daily use. The data reveals that the most frequently mentioned tools include Power BI, which is widely used for data analysis, visualisation and reporting, and various Microsoft Office 365 applications (such as Word, Excel, Teams and PowerPoint), as well as Power Query, which are used for both process automation and data management and analysis. DataSnipper, Perplexity and Speech to Text LLM, which help with task automation and data analysis, although they are not AI per se. Furthermore, some companies mentioned specialised tools such as Alteryx, Tableau, and in-house developments incorporating AI capabilities, along with RobotX and Clever Business Solutions, which are used to optimise processes and improve decision making in the auditing field.

3.4. AI tools developed in-house

On the question "Has the firm you work for developed its own specific AI tools?", as can be seen in Figure 18, 40.30% of those answering the question confirmed that their firm has developed its own AI tool. While 46.27% indicated that their firm has not developed any AI tools at the moment. 13.43% do not know or do not answer.

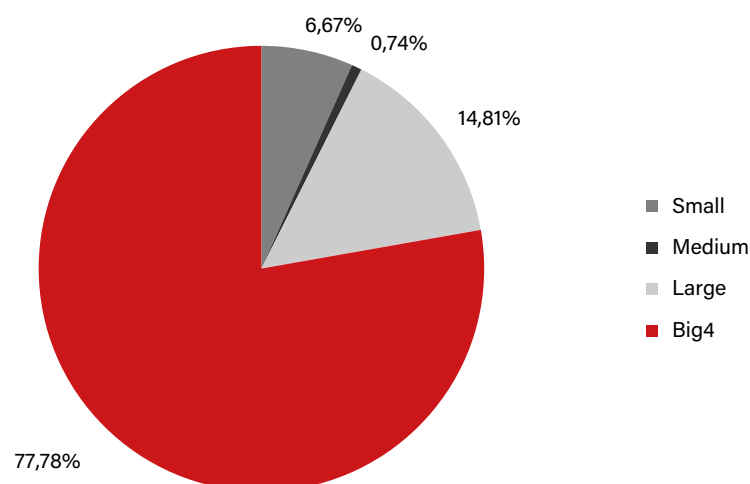
//// **FIGURE 18** Development of in-house AI tool



Of the respondents who say that their firm has developed an in-house AI tool, we find the following distribution by firm size [Figure 19]. The data indicate a clear trend in the development of in-house AI tools depending on the size of the firm. The Big 4 stand out as the leading firms in creating in-house AI tools. This reflects their ability to invest in internal developments and their focus on customising technological solutions to optimise their audit processes and other services. Investment in in-house AI allows these large firms to maintain a competitive edge and better adapt to changing market needs.

In contrast, large firms have developed significantly fewer in-house tools. This could be because, even though they have more resources than medium or small firms, they prefer to resort to solutions already available in the market or adaptations of existing tools. Medium and small firms have a much more limited capacity to develop in-house AI, which may reflect resource constraints or lack of specialisation in advanced technology.

//// **FIGURE 19** In-house AI tool by firm size



We asked respondents in which functions they use these in-house tools developed by each firm. Figure 20 shows the functions for which in-house AI tools developed by audit firms are most commonly used. These are primarily aimed at improving operational efficiency, with a particular focus on assisting in the preparation, review, and consultation of documents, as well as automating routine tasks and enhancing document review. These functions are key to streamlining processes and reducing time spent on repetitive tasks. There is also considerable use of data analytics to support audits and facilitate decision-making, reflecting an interest in leveraging the analysis of large data volumes to improve audit quality.

However, the use of these tools for fraud detection and regulatory compliance checks is less widespread. While these are essential functions, they are not currently perceived as having as significant an impact from AI implementation. This may suggest that audit tools are still not being fully leveraged in the areas of internal control and anomaly detection, which could represent an opportunity to strengthen their use in these domains.

//// **FIGURE 20** Audit areas with highest AI implementation



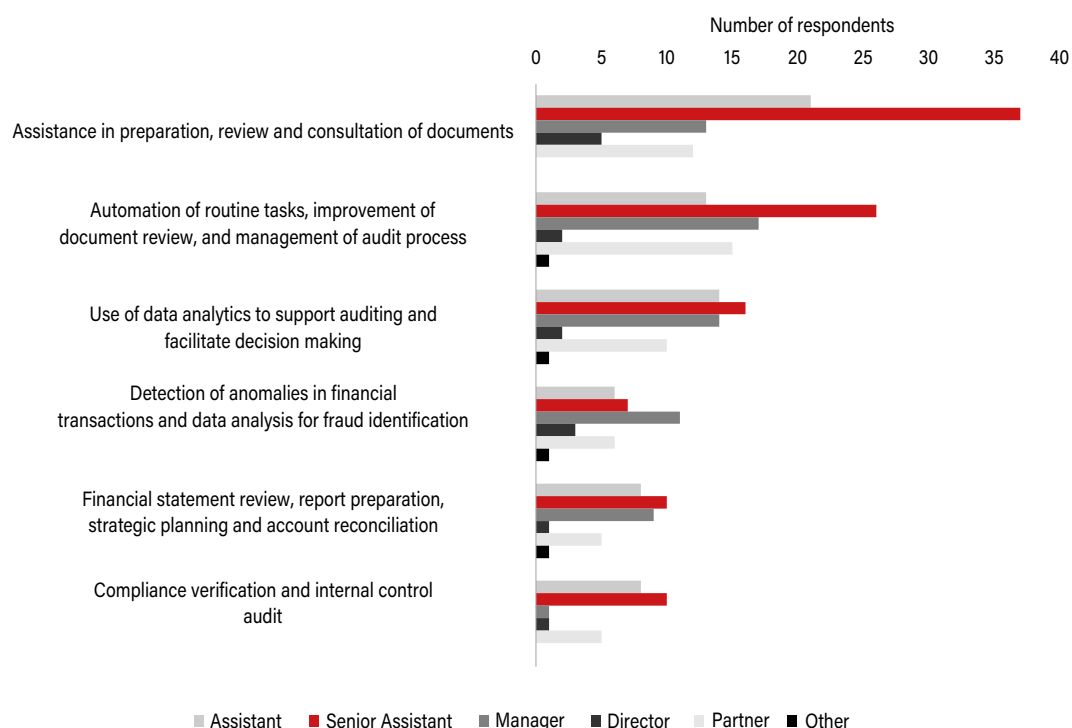
Figure 21 illustrates the distribution of the use of AI in audit activities, analysed according to roles within an audit firm: Assistant, Senior Assistant, Manager, Director and Partner. Six activities have

been analysed, which can be classified according to their degree of complexity and strategic level. This approach allows tasks to be categorised according to the skills, responsibilities and hierarchical levels required to carry them out.

- **Preparation, review and consultation of documents:** AI is widely used for document management, with the highest participation of Senior Assistants, followed by Assistants and Managers.
- **Automation of routine tasks and improvement of the audit process:** Streamlines repetitive tasks and document review. Predominantly Senior Assistants and Managers, with less presence at other levels.
- **Data analytics for audit and decision making:** Key tool for financial analysis, with increased use by managers and directors, reflecting its application in strategic decisions.
- **Anomaly and Fraud Detection:** AI strengthens the identification of irregularities in financial transactions, mainly used by managers at lower operational levels.
- **Financial statement review and strategic planning:** Supports account reconciliation and reporting, with greater involvement of Managers while Senior Assistants also participate.
- **Compliance verification and internal control audit:** It is used for auditing regulations and internal controls, with greater involvement of Assistants.

AI in auditing is mainly used in operational and analytical tasks, with a prominent role of Senior Assistants, Managers and Directors. Partners and Directors have less presence, indicating that they delegate their use to intermediate levels.

//// **FIGURE 21** Use of in-house AI in auditing functions by professional category¹³



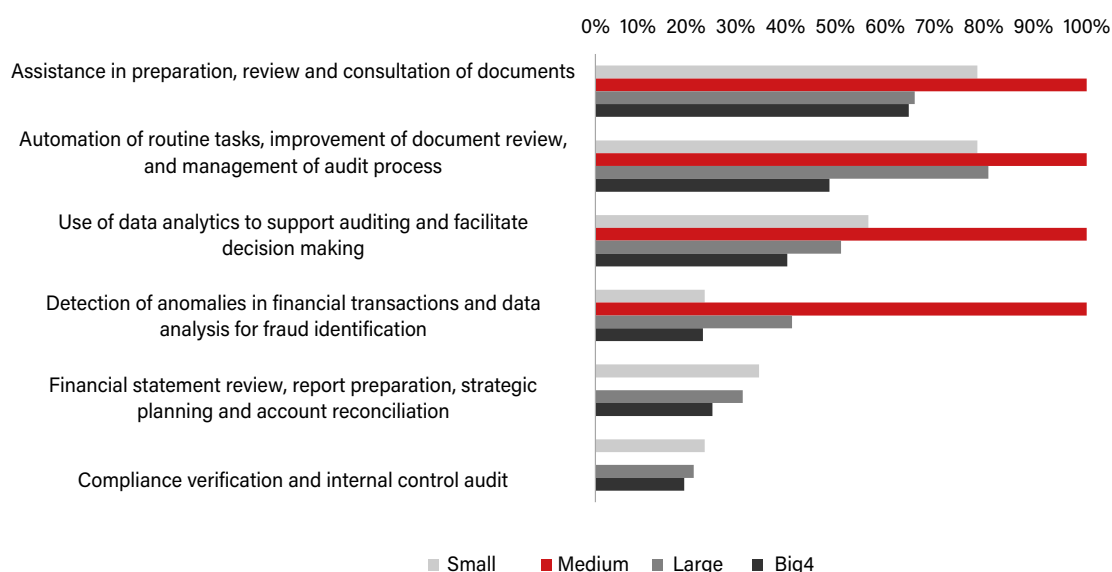
¹³ Respondents were asked to indicate in which audit functions they used these tools, with respondents able to tick as many options as applicable.

Figure 22 shows how AI use is distributed across different audit activities, considering only respondents who state that they regularly use AI developed by their own firm, and classifying the results according to the size of the firm. The analysis of data according to the size of the firm shows clear trends in the use of AI in auditing:

- **Widespread use in medium and large firms:** Medium and large firms report a high level of AI use in most functions, even reaching 100% in assistance in the preparation, review and consultation of documents, use of data analytics to support auditing and in the detection of anomalies in financial transactions.
- **Moderate adoption in small firms:** In smaller firms, the use of AI is also present, but with very different percentages depending on the function (between 22% and 77%). Most notably their use in document support and anomaly detection, indicating that, even with more limited resources, they are leveraging AI tools to streamline and strengthen essential aspects of auditing.
- **Specific features of the Big 4:** It is striking that Big 4 firms report lower percentages in almost all functions (e.g. 63.81% in document support or 39.05% in data analytics). This could indicate that their technology strategy also includes external solutions, partnerships with third parties or internal tools that are not explicitly categorised as "In-house AI" in the survey.
- **Less use in regulatory compliance:** The verification of regulatory compliance and the continuous audit of internal controls generally show the smallest percentages as functions where AI tools in-house by firms are used. The difference between large firms (47.62%) and the rest (22.22% in small, 0% in medium and 18.10% in Big 4) is striking, suggesting that the application of AI to these functions is still at an early stage or is not perceived as a priority in all firms.

Overall, the data show that AI is prominently used to automate routine tasks, improve document review, enhance fraud detection and facilitate decision making through data analytics. However, the intensity of use varies according to the size of the firm, its resources and, possibly, the technology strategy that each firm adopts.

//// **FIGURE 22** Use of in-house AI in audit by firm size¹⁴



¹⁴ Respondents were asked to indicate in which audit functions they used these tools, with respondents able to tick as many options as applicable.

3.5. Level of satisfaction, barriers to implementation and cybersecurity

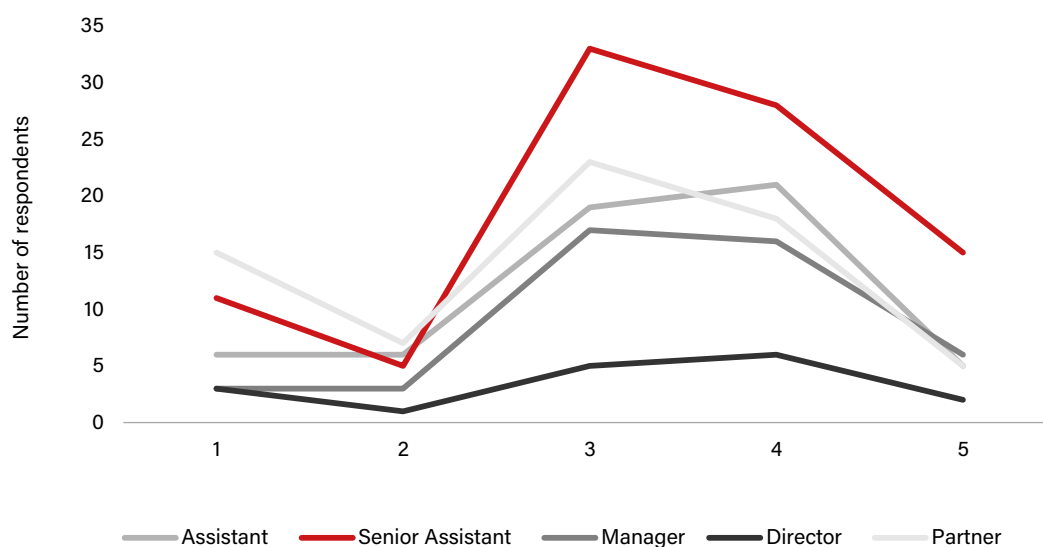
3.5.1. Satisfaction with the use of AI

The survey assessed satisfaction with the use of AI in auditing using a scale of 1 to 5, where 1 represents "very dissatisfied" and 5 "very satisfied". The results were analysed according to professional category and firm size. The main results are presented below (for more details, see Table A4. 1 of Annex 4).

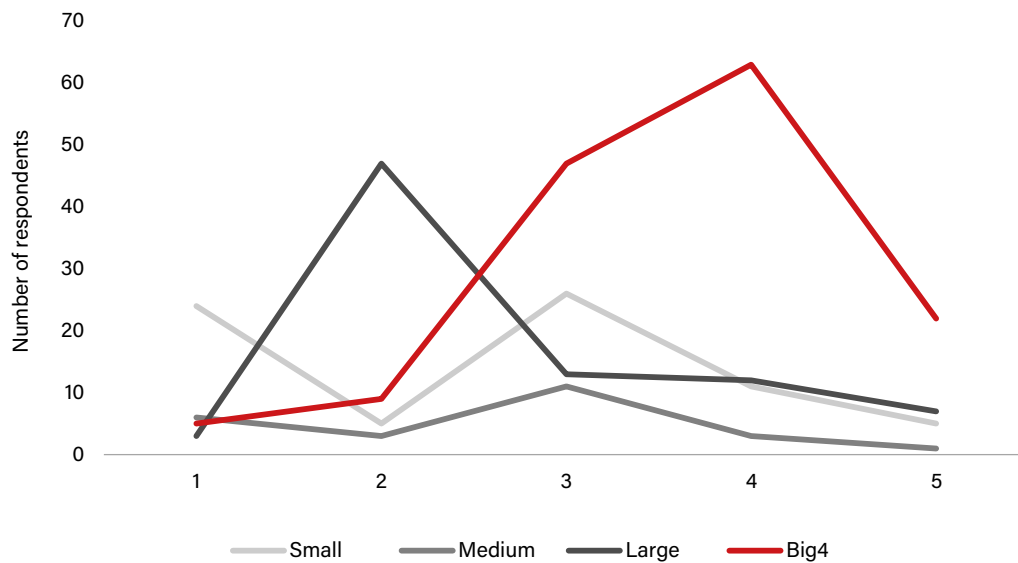
Figure 23 shows the results by professional category. Managers are the most satisfied with the AI, with 48.89% of responses in the 4 and 5 category, respectively. They are followed in terms of satisfaction by Directors with 47.06%. Partners, on the other hand, with 32.25%, are the professional category with the highest level of dissatisfaction, reporting scores of 1 or 2. In other words, one in every 5 Partners states they are "very dissatisfied" with the use of AI in auditing, possibly reflecting unmet expectations regarding the use of AI. Managers and Directors show greater enthusiasm for AI, while Partners show higher levels of dissatisfaction.

Figure 24 shows the results by firm size. The Big 4 are by far the most satisfied with AI, with 58.22% of respondents giving a score of 4 or 5. In contrast, large firms report the highest levels of dissatisfaction, with 60.98% of respondents giving a score of 1 or 2. This could reflect implementation constraints or unmet expectations.

//// **FIGURE 23** Level of satisfaction by professional category



↑ Note: 1 being very dissatisfied and 5 being very satisfied.

//// **FIGURE 24** Level of satisfaction by firm size

↑ Note: 1 being very dissatisfied and 5 being very satisfied.

3.5.2. Barriers to AI implementation in the firm

Table 1 and Figure 25 present the degree of importance respondents attach to different factors as possible barriers to AI implementation in audit firms, classified by firm size (small, medium, large, and Big 4). The results are evaluated on a scale of 1 to 5, with 1 being "not important at all" and 5 being "very important". The results for each potential barrier are analysed below.

- **Lack of staff training:** Medium-sized firms perceive lack of staff training as a more significant barrier, with 50% of respondents reporting scores of 4 or 5, followed by small firms with 49.25%.
- **High implementation costs:** Implementation costs are perceived as a major barrier for medium-sized firms, with 65% reporting scores of 4 or 5, followed by large firms with 61%. In contrast, the Big 4 seem to be less affected by this problem with 39.16%.
- **Lack of confidence in AI tools:** The Big 4 give the highest relevance to this factor as a possible barrier to AI implementation with 46.21% reporting scores of 4 or 5, followed by the medium-sized firms with 45.45%.
- **Reluctance to this technology on the part of superiors:** This factor does not seem to be very significant at any firm size. This could be understood as meaning that, in general, superiors are not reluctant to adopt these new tools.
- **Legal and regulatory barriers:** The Big 4 give the highest weight to legal and regulatory barriers as a factor hindering the implementation of AI tools, with 43.97% of respondents reporting scores of 4 or 5. In general, firms of all sizes consider this factor to be of medium importance.

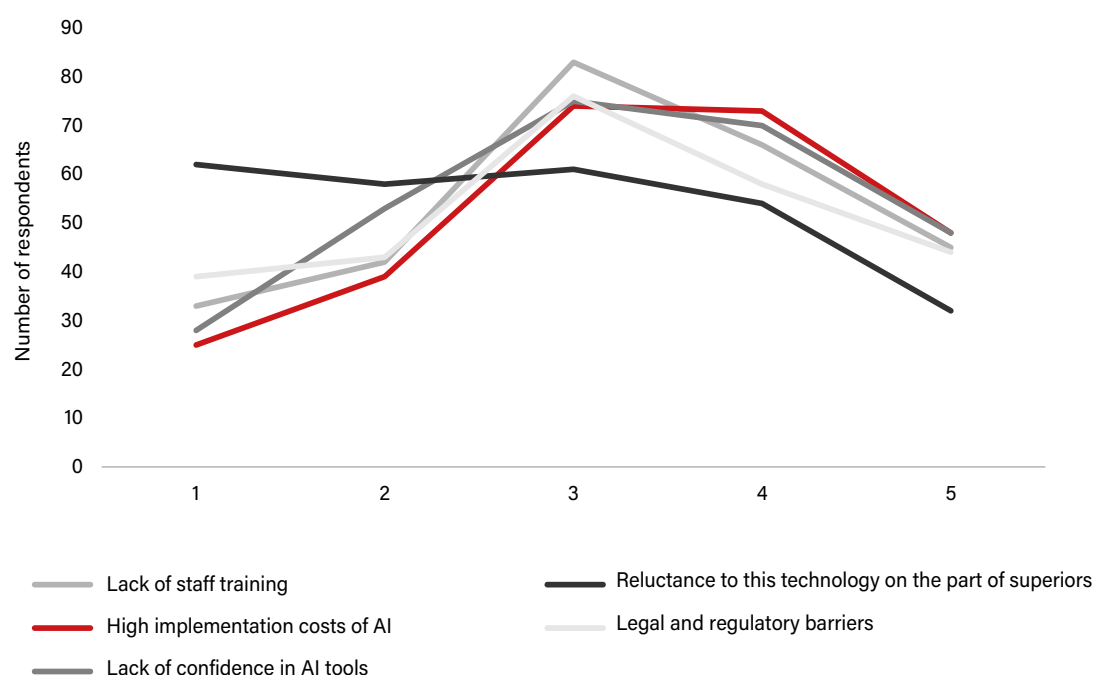
As a general conclusion, we could point out that, in general, high implementation costs and lack of confidence in the tools are the main factors hindering the implementation of this technology [Figure 25].

//// **TABLE 1** Barriers to implementing AI in the firm by firm size

Lack of staff training											
	1	%	2	%	3	%	4	%	5	%	Total
Small	6	8.96%	9	13.43%	19	28.36%	18	26.87%	15	22.39%	67
Medium	3	15.00%	1	5.00%	6	30.00%	4	20.00%	6	30.00%	20
Large	5	12.50%	6	15.00%	10	25.00%	11	27.50%	8	20.00%	40
Big 4	19	13.38%	26	18.31%	48	33.80%	33	23.24%	16	11.27%	142
Totals	33	12.27%	42	15.61%	83	30.86%	66	24.54%	45	16.73%	269
High implementation costs											
	1	%	2	%	3	%	4	%	5	%	Total
Small	3	5.00%	9	15.00%	18	30.00%	16	26.67%	14	23.33%	60
Medium	0	0.00%	2	10.00%	5	25.00%	5	25.00%	8	40.00%	20
Large	3	8.33%	1	2.78%	10	27.78%	13	36.11%	9	25.00%	36
Big 4	19	13.29%	27	18.88%	41	28.67%	39	27.27%	17	11.89%	143
Totals	25	9.65%	39	15.06%	74	28.57%	73	28.19%	48	18.53%	259
Lack of confidence in AI tools											
	1	%	2	%	3	%	4	%	5	%	Total
Small	7	10.45%	11	16.42%	24	35.82%	11	16.42%	14	20.90%	67
Medium	2	9.09%	6	27.27%	4	18.18%	6	27.27%	4	18.18%	22
Large	6	15.00%	9	22.50%	9	22.50%	11	27.50%	5	12.50%	40
Big 4	13	8.97%	27	18.62%	38	26.21%	42	28.97%	25	17.24%	145
Totals	28	10.22%	53	19.34%	75	27.37%	70	25.55%	48	17.52%	274
Reluctance to this technology on the part of superiors											
	1	%	2	%	3	%	4	%	5	%	Total
Small	21	33.33%	11	17.46%	16	25.40%	6	9.52%	9	14.29%	63
Medium	6	28.57%	6	28.57%	4	19.05%	3	14.29%	2	9.52%	21
Large	8	21.05%	8	21.05%	9	23.68%	10	26.32%	3	7.89%	38
Big 4	27	18.62%	33	22.76%	32	22.07%	35	24.14%	18	12.41%	145
Totals	62	23.22%	58	21.72%	61	22.85%	54	20.22%	32	11.99%	267
Legal and regulatory barriers											
	1	%	2	%	3	%	4	%	5	%	Total
Small	9	15.00%	8	13.33%	25	41.67%	10	16.67%	8	13.33%	60
Medium	6	27.27%	3	13.64%	7	31.82%	3	13.64%	3	13.64%	22
Large	8	21.62%	3	8.11%	10	27.03%	10	27.03%	6	16.22%	37
Big 4	16	11.35%	29	20.57%	34	24.11%	35	24.82%	27	19.15%	141
Totals	39	15.00%	43	16.54%	76	29.23%	58	22.31%	44	16.92%	260

↑ Note: 1 being 'not at all important' and 5 being 'very important'.

//// FIGURE 25 Barriers to implementing AI in the firm



↑ Note: 1 being 'not at all important' and 5 being 'very important'.

3.5.3. Level of concern about factors related to the use of AI

Table 2 and Figure 26 assess the factors of concern related to the implementation of AI in auditing, classified by firm size (small, medium, large and Big 4). Responses are organised on a scale of 1 to 5, where 1 indicates "low level of concern" and 5 "high level of concern".

- **Data security and privacy:** Data security and privacy is a major concern, especially for large and small firms, with 72.50% and 72.06% reporting scores of 4 or 5, respectively. In the Big 4, although the problem is significant, it has a lower relative impact (56.25%).
- **Technological dependency:** Technology dependence is of greatest concern for small firms (with 61.76% reporting scores of 4 or 5). The Big 4 show less concern in this area, reflecting their ability to manage this dependence, with 45.21%.
- **Risk of errors:** The risk of errors is of similar concern to large and small firms (50% and 52.24%).
- **Impact on employment:** The impact on employment is a more evenly distributed concern, with no particularly strong views expressed.

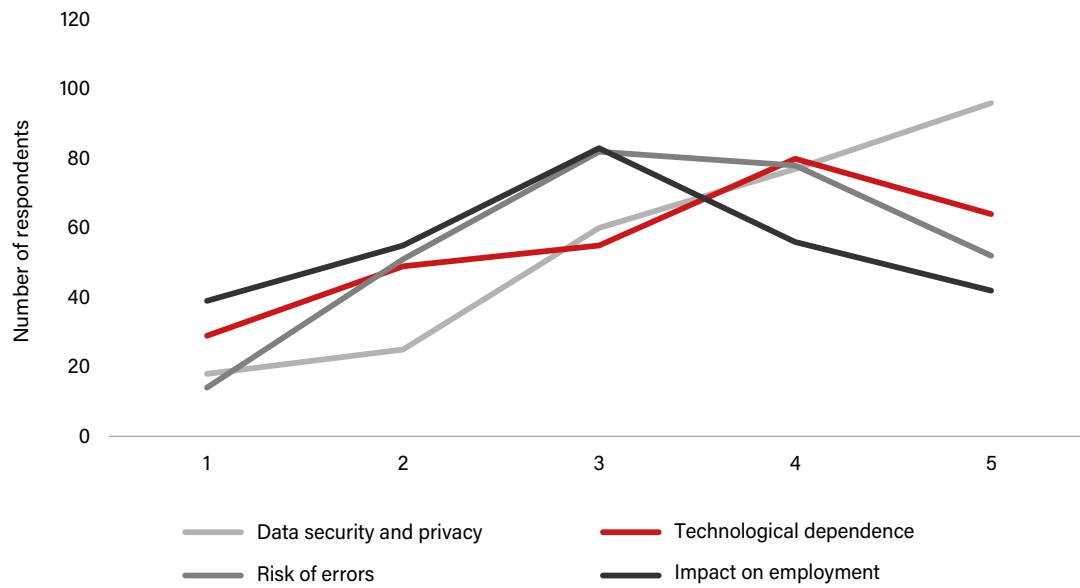
It should be noted that, as can be seen in Figure 26, *Data security and privacy* is the most critical factor in all firms, especially in large and medium-sized firms. The *Risk of errors* is also a major factor, with large firms more concerned about avoiding critical errors. *Technological dependence* is very significant also in small firms. The *impact on employment* is an issue that generates moderate concern, with a more significant focus on medium and large firms, although less relevant for the Big 4. The analysis highlights how concerns related to the implementation of AI vary according to the size of the firm, reflecting differences in capabilities, resources and organisational strategies.

//// **TABLE 2** Level of concern regarding factors related to the use of AI in auditing by firm size

Data security and privacy											
	1	%	2	%	3	%	4	%	5	%	Total
Small	4	5.88%	5	7.35%	10	14.71%	21	30.88%	28	41.18%	68
Medium	2	8.33%	2	8.33%	6	25.00%	3	12.50%	11	45.83%	24
Large	1	2.50%	3	7.50%	7	17.50%	10	25.00%	19	47.50%	40
Big 4	11	7.64%	15	10.42%	37	25.69%	43	29.86%	38	26.39%	144
Totals	18	6.52%	25	9.06%	60	21.74%	77	27.90%	96	34.78%	276
Technological dependence											
	1	%	2	%	3	%	4	%	5	%	Total
Small	7	10.29%	9	13.24%	10	14.71%	19	27.94%	23	33.82%	68
Medium	1	4.17%	5	20.83%	4	16.67%	8	33.33%	6	25.00%	24
Large	2	5.13%	6	15.38%	9	23.08%	12	30.77%	10	25.64%	39
Big 4	19	13.01%	29	19.86%	32	21.92%	41	28.08%	25	17.12%	146
Totals	29	10.47%	49	17.69%	55	19.86%	80	28.88%	64	23.10%	277
Risk of errors											
	1	%	2	%	3	%	4	%	5	%	Total
Small	3	4.48%	10	14.93%	19	28.36%	15	22.39%	20	29.85%	67
Medium	3	12.50%	4	16.67%	9	37.50%	3	12.50%	5	20.83%	24
Large	2	5.00%	7	17.50%	11	27.50%	17	42.50%	3	7.50%	40
Big 4	6	4.11%	30	20.55%	43	29.45%	43	29.45%	24	16.44%	146
Totals	14	5.05%	51	18.41%	82	29.60%	78	28.16%	52	18.77%	277
Impact on employment											
	1	%	2	%	3	%	4	%	5	%	Total
Small	9	13.24%	14	20.59%	23	33.82%	12	17.65%	10	14.71%	68
Medium	4	16.67%	4	16.67%	9	37.50%	3	12.50%	4	16.67%	24
Large	7	17.50%	4	10.00%	13	32.50%	8	20.00%	8	20.00%	40
Big 4	19	13.29%	33	23.08%	38	26.57%	33	23.08%	20	13.99%	143
Totals	39	14.18%	55	20.00%	83	30.18%	56	20.36%	42	15.27%	275

↑ Note: 1 being 'very low' and 5 being 'very high'.

//// **FIGURE 26** Level of concern regarding factors related to the use of AI in auditing



↑ Note: 1 being 'very low' and 5 being 'very high'.

3.5.4. Level of concern about cybersecurity factors

Table 3 and Figure 27 assess the specific concerns related to cybersecurity in the context of AI in auditing, classified by firm size (small, medium, large and Big 4). Responses are organised on a scale of 1 to 5, where 1 indicates "low level of concern" and 5 "high level of concern". Detailed results are presented below.

- **Unauthorised access to sensitive audit data:** Small firms perceive unauthorised access as a critical concern, with 76.81% reporting scores of 4 or 5.
- **Data leaks and breaches:** Small firms lead in data leakage concerns, with 77.94% reporting scores of 4 or 5.
- **Robustness of AI systems against cyberattacks:** Small firms consider robustness against cyberattacks to be a significant concern with 69.70% reporting scores of 4 or 5.
- **Adequacy of staff training in cybersecurity measures:** Large firms stand out as the most concerned about the lack of staff training, with 67.50% reporting scores of 4 or 5, followed by small firms with 67.16%.

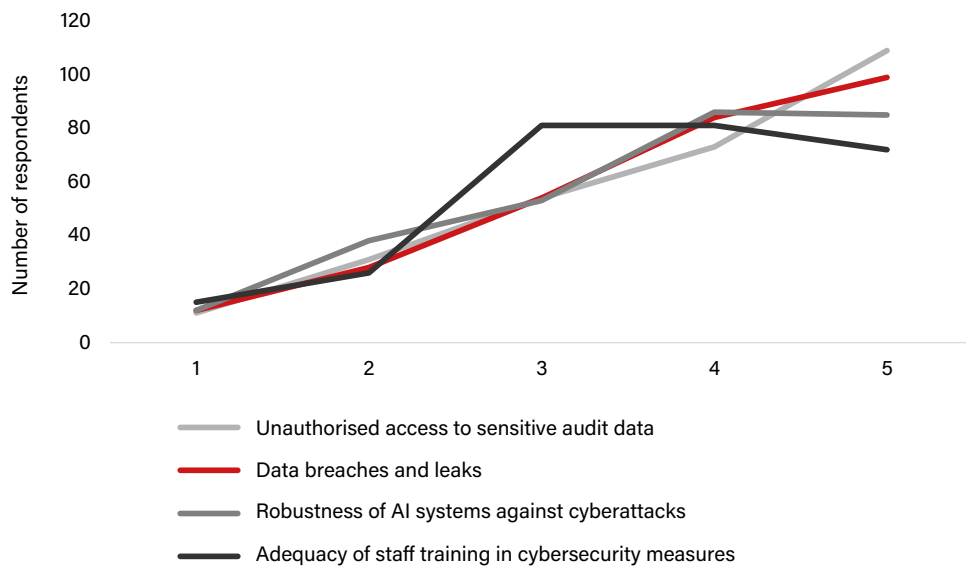
There are several factors that small firms rate as of great concern in terms of cybersecurity, namely *Unauthorised access to sensitive audit data*, *Data leaks and breaches*, and *Robustness of AI systems against cyberattacks*. The Big 4 and large firms also consider their level of concern on these factors to be high. The *Adequacy of staff training* is considered by large and small firms alike to be a cybersecurity factor of concern.

//// **TABLE 3** Level of concern about cybersecurity factors

Unauthorised access to sensitive audit data											
	1	%	2	%	3	%	4	%	5	%	Total
Small	1	1.45%	5	7.25%	10	14.49%	17	24.64%	36	52.17%	69
Medium	1	4.17%	3	12.50%	7	29.17%	3	12.50%	10	41.67%	24
Large	2	5.00%	5	12.50%	8	20.00%	11	27.50%	14	35.00%	40
Big 4	7	4.83%	18	12.41%	29	20.00%	42	28.97%	49	33.79%	145
Totals	11	3.96%	31	11.15%	54	19.42%	73	26.26%	109	39.21%	278
Data breaches and leaks											
	1	%	2	%	3	%	4	%	5	%	Total
Small	2	2.94%	5	7.35%	8	11.76%	18	26.47%	35	51.47%	68
Medium	1	4.17%	1	4.17%	8	33.33%	6	25.00%	8	33.33%	24
Large	2	5.00%	5	12.50%	6	15.00%	13	32.50%	14	35.00%	40
Big 4	7	4.83%	17	11.72%	32	22.07%	47	32.41%	42	28.97%	145
Totals	12	4.33%	28	10.11%	54	19.49%	84	30.32%	99	35.74%	277
Robustness of AI systems against cyberattacks											
	1	%	2	%	3	%	4	%	5	%	Total
Small	2	3.03%	8	12.12%	10	15.15%	19	28.79%	27	40.91%	66
Medium	1	4.17%	2	8.33%	11	45.83%	3	12.50%	7	29.17%	24
Large	2	5.00%	4	10.00%	7	17.50%	15	37.50%	12	30.00%	40
Big 4	7	4.86%	24	16.67%	25	17.36%	49	34.03%	39	27.08%	144
Totals	12	4.38%	38	13.87%	53	19.34%	86	31.39%	85	31.02%	274
Adequacy of staff training in cybersecurity measures											
	1	%	2	%	3	%	4	%	5	%	Total
Small	3	4.48%	3	4.48%	16	23.88%	24	35.82%	21	31.34%	67
Medium	1	4.17%	1	4.17%	11	45.83%	2	8.33%	9	37.50%	24
Large	0	0.00%	3	7.50%	10	25.00%	16	40.00%	11	27.50%	40
Big 4	11	7.64%	19	13.19%	44	30.56%	39	27.08%	31	21.53%	144
Totals	15	5.45%	26	9.45%	81	29.45%	81	29.45%	72	26.18%	275

↑ Note: 1 being 'very low' and 5 being 'very high'.

//// **FIGURE 27** Level of concern about cybersecurity factors



↑ Note: 1 being 'very low' and 5 being 'very high'.

3.6. Summary of the level of expertise and training in AI in auditing

This section analyses the state of AI implementation and training in audit firms. The main findings are highlighted below:

- As for the comprehensive AI strategy, only 27.36% of firms have a fully developed AI strategy. 33.21% are in the process of development, while 33.58% do not have a defined strategy. 80% of respondents working in a firm with a comprehensive AI strategy already developed are employees of a Big 4 firm.
- As for AI training, 44.91% of the respondents have received specific training in AI. The average annual training is 12.68 hours, with the Big 4 offering the most training opportunities. The percentage of men receiving AI training is higher (58.54%) than that of women (41.46%).
- In relation to the use of AI in auditing, 61.51% of respondents use AI in their regular functions. The most common tools include ChatGPT, Gemini (Google), and Microsoft Copilot, with ChatGPT being the most popular among all professional categories.
- In the development of in-house tools, 40.30% of respondents report that their firm has developed specific AI tools, with the Big 4 being the main creators. These tools are mainly used for automation of routine tasks, data analytics, and document review assistance.
- Among the barriers to the implementation of AI, the lack of staff training, the high implementation costs, and the lack of trust in AI tools stand out.
- Regarding security and cybersecurity concerns, the biggest fears include data security and privacy and the robustness of AI systems against cyberattacks. Small firms are the most concerned about cybersecurity in relation to AI.
- In general, although large firms lead the adoption of AI, significant barriers persist, particularly in smaller firms, relating to resources, training, and trust in technologies.

3.6.1. Implications of the level of expertise and training in AI in auditing

The implementation of AI in audit firms presents both significant opportunities and challenges that require strategic attention.

It is essential that firms, especially small and medium-sized ones, develop a comprehensive AI strategy aligned with their business objectives. This involves identifying areas where AI can add the most value, establishing implementation plans and defining metrics to assess its impact. Starting with pilot projects in specific areas can be an effective strategy for introducing AI in a gradual and controlled way.

Firms should invest in continuous AI training programmes for all professional levels, ensuring equal opportunities for men and women. The training should focus on the practical use of AI tools, understanding their applications in auditing and developing skills to interpret results generated by these technologies.

Regarding implementation costs, firms should evaluate the long-term return on investment from adopting AI, considering the improvement in efficiency and error reduction. In addition, firms should explore funding options, grants or partnerships that can ease the initial financial burden. Starting with simple AI tools that can be incorporated into existing systems before tackling more disruptive transformations can be an effective strategy.

Firms should establish robust information security policies and procedures, including specific measures to protect data used and generated by AI systems. This includes the implementation of access controls, data encryption and regular security audits.

4 Impact of AI on the firm-client relationship

This fourth section analyses the relationship between audit firms' employees and their clients, as well as the expected impact of AI on audit fees. The survey that forms the basis of this report includes a section referring to this topic, and also includes an open question to find out if audit firms have received any comments or suggestions from their clients about the use of AI in their processes, thus seeking to compile a more comprehensive and detailed view of the client's perception in this context.

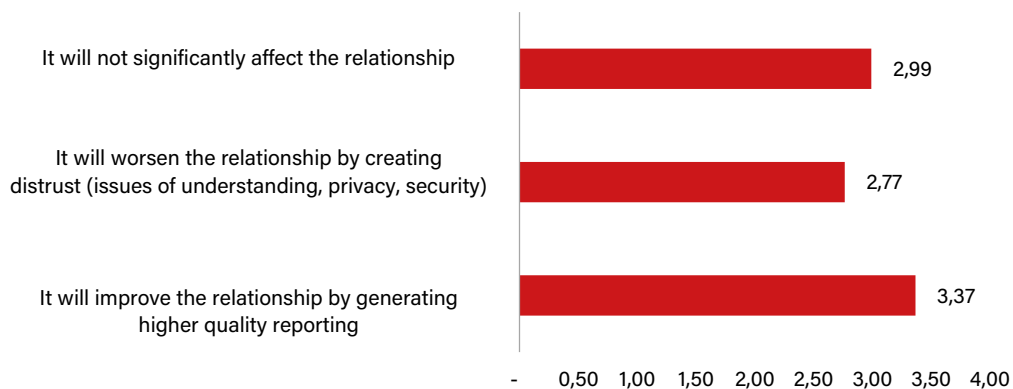
4.1. Impact of AI on auditor-client relationship

Figure 28 shows the level of agreement with several statements regarding the impact of AI on the auditor-client relationship. These statements are scored by respondents from 1 to 5, with 1 being "low level of concern" and 5 being "high level of concern". The analysis of the three statements shows different perceptions among small, medium, large and Big 4 firms on the impact of AI on relationships through the quality of reporting and the generation of distrust.

- **It will improve the relationship by generating higher quality reporting:** The majority of respondents, especially in small and Big 4 firms, believe that AI will improve the relationship by generating higher quality reporting (49.71% and 46.04%, respectively).
- **It will worsen the relationship by creating distrust (issues of understanding, privacy, security):** Large and small firms disagree or strongly disagree with this statement, with 51.04% and 45.45%, respectively.
- **It will not significantly affect the relationship:** The responses are again varied, but small firms show a higher proportion of respondents who believe that AI will not have a significant impact (49.08%).

In summary, small firms appear to have a more positive perception of the potential for AI to enhance the auditor-client relationship, whereas large and Big 4 firms, while also recognising improvements in quality, express greater concern about potential risks such as distrust.

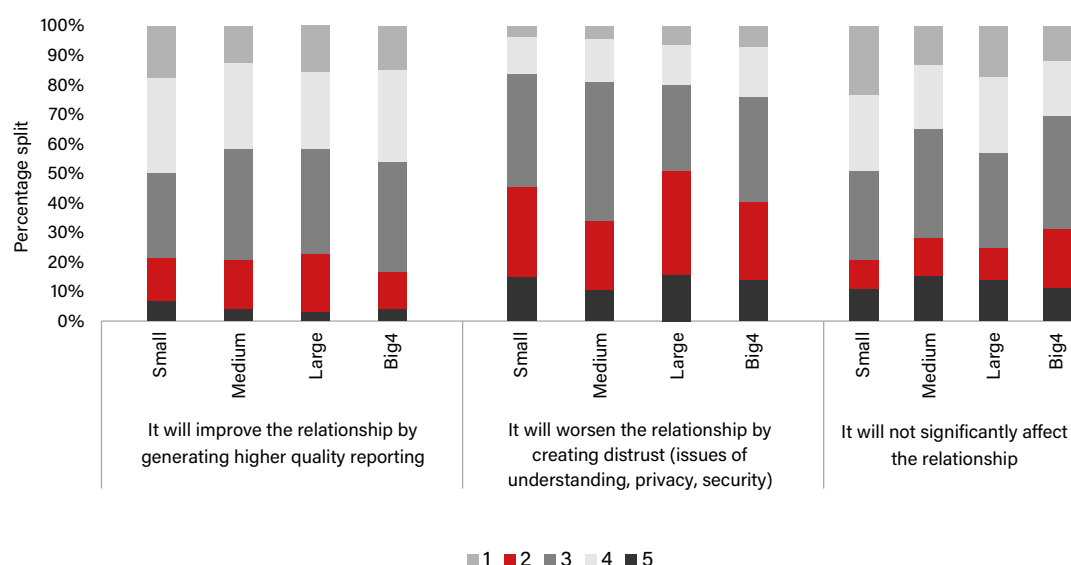
//// **FIGURE 28** Impact of AI on the auditor-client relationship



↑ Note: the range of the horizontal axis is from 1 (minimum) to 5 (maximum).

Figure 29 plots the support for each of these statements by firm size (for more detail, see Table A4. 2 of Annex 4). Figure 29 shows that small audit firms are the most likely to agree that AI will improve the relationship between clients and auditors by generating higher quality reporting. Small audit firms are also the least likely to agree that the auditor-client relationship will worsen because of distrust issues due to AI. And finally, it is also the small firms that most believe that, in general, AI will not affect the relationship. Therefore, the firms that have the most positive expectations about AI and are most committed to its implementation seem to be small firms.

//// **FIGURE 29** Impact of AI on the auditor-client relationship by firm size



↑ Note: 1 being strongly disagree and 5 being strongly agree.

4.2. Expected impact of AI on audit fees

In this section we asked respondents about the effect they think AI will have on audit fees. The questions centred around analysing possible increases due to perceived higher risks or new service opportunities, as well as possible reductions associated with improvements in efficiency and changes in billing. The possibility that AI does not significantly affect fees was also assessed. The results in Table 4 reflect a notable lack of consensus, highlighting the complexity of the impact of AI on the economic structure of audit services. The following is a detailed breakdown of the perceptions and trends observed.

- **Fee increase (perceived higher risks):** There is a general tendency towards non-consensus on this statement, with approximately 39.41% of respondents disagreeing or strongly disagreeing.
- **Fee increase (opportunities for additional services):** A moderate impact is perceived due to higher perceived risks, 44.51% of respondents agree or strongly agree with this statement, with the Big 4 having the highest percentage of support with 48.26%.
- **Fee reduction (audit process efficiency improvement):** The results of this statement are widely distributed. There is some slight disagreement with the statement, namely 37.57% strongly disagree or disagree, compared with 30.92% who agree or strongly agree.
- **Fee reduction (fewer billable hours) which reduces the audit firm's income:** The results of this statement are also widely distributed. There is some slight disagreement with the statement, namely 39.92% strongly disagree or disagree, compared with 26.61% who agree or strongly agree.

- **It will not significantly affect the fees:** The results of this statement are also widely distributed. There is a significant distribution of opinions, with 34.54% strongly disagreeing or disagreeing, compared with 32.53% who agree or strongly agree. Small and medium-sized firms have the highest percentage of agreement with this statement.

The analysis of perceptions about the impact of AI on audit fees reveals a widespread tendency towards a lack of consensus. Regarding the increase in fees for perceived higher risks, 39.41% of respondents disagreed. However, 44.51% believe that AI could generate opportunities for additional services, especially in the Big 4, which leads the support with 48.26%. On fee reduction, the majority is divided: 37.57% disagree with the idea that AI will improve efficiency and reduce fees, while 30.92% agree. Similarly, 39.92% disagreed with the statement that the implementation of AI will lead to a reduction in billable hours, and hence income, while 26.61% believed it would. Finally, although opinions are quite divided, 34.54% believe that AI will not significantly affect fees, with the highest support among medium and small firms.

//// **TABLE 4** Expected impact of AI on audit fees by firm size

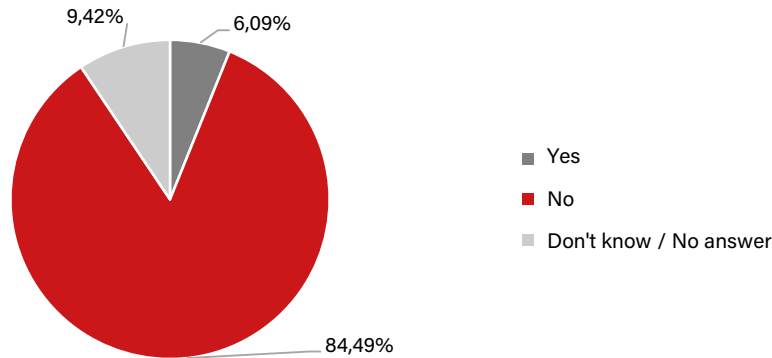
Increased fees (higher perceived risks)											
	1	%	2	%	3	%	4	%	5	%	Total
Small	30	18.07%	45	27.11%	58	34.94%	24	14.46%	9	5.42%	166
Medium	3	6.52%	14	30.43%	17	36.96%	9	19.57%	3	6.52%	46
Large	9	9.57%	25	26.60%	42	44.68%	17	18.09%	1	1.06%	94
Big 4	16	8.04%	57	28.64%	68	34.17%	40	20.10%	18	9.05%	199
Totals	58	11.49%	141	27.92%	185	36.63%	90	17.82%	31	6.14%	505
Increased fees (opportunities for additional services)											
	1	%	2	%	3	%	4	%	5	%	Total
Small	16	9.47%	33	19.53%	51	30.18%	45	26.63%	24	14.20%	169
Medium	4	8.70%	8	17.39%	13	28.26%	14	30.43%	7	15.22%	46
Large	4	4.26%	16	17.02%	34	36.17%	29	30.85%	11	11.70%	94
Big 4	13	6.47%	30	14.93%	61	30.35%	67	33.33%	30	14.93%	201
Totals	37	7.25%	87	17.06%	159	31.18%	155	30.39%	72	14.12%	510
Reduction of fees (improved efficiency of audit processes) and therefore cost for clients											
	1	%	2	%	3	%	4	%	5	%	Total
Small	25	14.71%	41	24.12%	50	29.41%	35	20.59%	19	11.18%	170
Medium	8	17.02%	11	23.40%	15	31.91%	8	17.02%	5	10.64%	47
Large	11	11.70%	21	22.34%	37	39.36%	18	19.15%	7	7.45%	94
Big 4	25	12.50%	50	25.00%	59	29.50%	47	23.50%	19	9.50%	200
Totals	69	13.50%	123	24.07%	161	31.51%	108	21.14%	50	9.78%	511
Reduced fees (fewer billable hours) which reduces the audit firm's income											
	1	%	2	%	3	%	4	%	5	%	Total
Small	29	16.96%	39	22.81%	58	33.92%	33	19.30%	12	7.02%	171
Medium	7	15.22%	12	26.09%	15	32.61%	9	19.57%	3	6.52%	46
Large	11	11.70%	27	28.72%	29	30.85%	21	22.34%	6	6.38%	94
Big 4	20	10.00%	59	29.50%	69	34.50%	33	16.50%	19	9.50%	200
Totals	67	13.11%	137	26.81%	171	33.46%	96	18.79%	40	7.83%	511
It will not significantly affect fees											
	1	%	2	%	3	%	4	%	5	%	Total
Small	25	15.06%	26	15.66%	55	33.13%	30	18.07%	30	18.07%	166
Medium	6	13.64%	5	11.36%	13	29.55%	11	25.00%	9	20.45%	44
Large	12	12.77%	25	26.60%	30	31.91%	12	12.77%	15	15.96%	94
Big 4	29	14.95%	44	22.68%	66	34.02%	34	17.53%	21	10.82%	194
Totals	72	14.46%	100	20.08%	164	32.93%	87	17.47%	75	15.06%	498

↑ Note: 1 being strongly disagree and 5 being strongly agree.

4.3 Comments/suggestions from clients on the use of AI in auditing

Respondents were also asked if they had received comments/suggestions from their clients on the use of AI in auditing. Only 27 respondents answered that their clients had been interested in the implementation of AI in audit firms [Figure 30] and shared this information in the open-ended question of the survey.

//// **FIGURE 30** Client comments/suggestions on the use of AI



Among clients' main concerns about the adoption of AI in auditing, we organised the responses they provided by topic:

- I. **Data privacy and confidentiality:** One of the most recurring themes in customer feedback is the concern for the security and privacy of their data. Customers fear that their information will be used for third parties or not handled securely.
 - Doubts regarding the confidentiality of information.
 - They mention doubts that their information may be used by third parties.
- II. **Impact on the profession and the client-auditor relationship:** Some clients express concern about how the use of AI may change the role of the auditor or even make their work less relevant. There is also interest in understanding how it affects the relationship with auditors.
 - The use of AI makes our profession almost unnecessary.
 - We are asked about the use in data analysis and sampling.
 - They are interested in knowing how we use it.
- III. **Efficiency and effectiveness:** Clients value the ability of AI to make processes faster and more efficient. Some highlight the benefits observed in fraud detection and analysis tools.
 - Using AI to streamline the most basic audit procedures.
 - Increase in efficiency and cost reduction.
- IV. **Reliability and precision:** Customers want to know whether AI tools are reliable and whether the results obtained can be considered accurate. This is especially relevant for critical processes such as the detection of fraud or fictitious transactions.
 - Whether they are reliable.
 - Doubts about whether tools will be used for the detection of fictitious transactions.
- V. **Expectations and interest in use:** In the case of small and medium-sized clients, there is a great deal of expectation and interest in how AI can be implemented. Some highlight the need for greater understanding of the tools used.

- In my SME environment, there is a lot of anticipation.*
- We have been asked if we have AI to understand their anomalous balances.*
- Sector data search.*

VI. Innovation in the delivery of results: Some clients mention their interest in receiving more modern and technologically advanced reports, moving away from traditional methods that they consider outdated.

- They find it very outdated to ask for screenshots as evidence.*

VII. Rejection or lack of interest: Although less frequent, comments were also found from customers who do not want AI to be used or who reject the idea.

The comments reflect both positive expectations and concerns about the adoption of AI in auditing. Clients appreciate the efficiency and cost reduction that AI can offer, especially in tasks such as fraud detection and faster report generation. However, there are also concerns about data protection, confidentiality and reliability of the tools. In addition, clients express a growing interest in understanding how AI is used in their audits, but note a lack of transparency and communication from audit firms about the use of these technologies. Overall, it is key for firms to improve communication, providing more information on the use of AI and ensuring data protection to increase customer confidence.

4.4. Summary of the impact of AI on the firm-client relationship

This section explores audit firm employees' perceptions of how AI is transforming the relationship between audit firms and their clients, as well as its impact on audit fees and client feedback on the use of this technology.

In the perception of the impact of AI on the auditor-client relationship, the expectation is for (1) Improvements in the relationship: 46.05% of respondents believe that AI will improve the relationship by generating higher quality reporting. Small firms are the most optimistic, with 49.71% agreeing or strongly agreeing with this statement. But also (2) Distrust: 24.26% of Big 4 employees believe that AI could lead to distrust due to issues of understanding, privacy or security. In small firms, 15.15% are concerned about this aspect. (3) No significant impact: 49.08% of respondents from small firms believe that AI will not significantly affect the client-auditor relationship.

Regarding the impact of AI on audit fees, the expectation is for (1) fee increases: 44.51% perceive that AI can generate opportunities to offer additional services, especially in the Big 4 (48.26%). However, 39.41% do not believe that fees will increase due to higher perceived risks. Or (2) reduction of fees: 37.57% disagree with the idea that AI will reduce fees due to increased efficiency, while 30.92% agree. The claim that AI will reduce firms' income through fewer billable hours also divides opinion, with 39.92% disagreeing and 26.61% agreeing. (3) No impact on fees: 32.53% consider that AI will not affect fees significantly.

The impact of AI on the firm-client relationship generates mixed opinions. While recognising its potential to improve reporting quality and efficiency, concerns remain about privacy, reliability and the potential for distrust.

4.4.1. Implications of the impact of AI on the firm-client relationship

AI makes it possible to automate routine tasks and analyse large volumes of data more accurately, resulting in more detailed reports and streamlined processes. The lack of understanding about how AI reaches certain conclusions can generate distrust among customers, especially if the methods and benefits of its use are not clearly communicated.

It is essential to explain to clients in a transparent manner how AI is integrated into the audit process, highlighting its benefits and the security measures implemented to protect sensitive information.

Leveraging AI capabilities to deliver deeper analytics, customised consulting services, or solutions tailored to each client's specific needs, thereby diversifying revenue streams.

Implementing clear policies on the use of AI, ensuring that automated decisions are explainable and justifiable, strengthening customer confidence in the results obtained.

Considering billing models that reflect the added value provided by AI, beyond hours worked, focusing on the quality and depth of services provided.

Ensuring that, despite automation, there is constant and personalised communication with clients, preserving the relationship of trust and the value of the auditor's professional judgement.

The strategic and ethical adoption of AI in audits can strengthen the relationship between firms and their clients, provided that concerns are proactively addressed and the benefits of this emerging technology are highlighted.

5 Perception of AI implementation and regulation

This fifth section analyses respondents' answers on their perceptions regarding support for AI implementation and regulation. Next, an open-ended question was posed in the survey, allowing respondents to indicate how they believed AI implementation could be improved and the need for AI regulation. We have analysed the responses and grouped them according to the most relevant aspects mentioned:

- I. **Education and Training:** Most respondents highlight the need for training on the use of AI in auditing. This is reflected in some comments as follows.
 - *Development of specific guides and standards promoting training programmes.*
 - *Training courses on AI applied to auditing.*
 - *Practical training with case studies.*
- II. **Flexible legislation and regulatory development:** Respondents are concerned about AI regulation and how it will affect the implementation of AI. There is an interest in making regulation more flexible and eliminating excessive bureaucracy that hinders the adoption of new technologies.
 - *Flexible regulation that allows the use of AI without imposing additional administrative burdens.*
 - *Setting clear rules for the use of AI tools.*
 - *Reducing the excess of regulation and bureaucratic requirements.*
 - *Approving and validating the AI applications used in auditing.*
- III. **Availability of Common Tools and Resources:** Respondents also suggested that validated applications and accessible resources, especially for small audit firms, should be identified and made available.
 - *Availability of proven and adapted tools in the field of auditing.*
 - *Offering a list of recommended AI tools to improve the audit.*
 - *Providing basic AI tools at low cost.*
- VI. **Promotion of Innovation and Support for Research:** Many respondents believe that innovation in auditing should be encouraged through research and promotion of new technologies, without hindering technological evolution.
 - *Encouraging innovation in AI, provided that security and ethical requirements are met.*
 - *Promotion and training in AI, embracing technological progress.*
 - *Being more proactive in reporting on AI developments.*

- V. Clarity and Common Standards:** Respondents call for clear and consistent guidelines on the use of AI in auditing, including technical standards and quality criteria. This will help ensure that the use of AI does not affect the reliability and trustworthiness of the auditor's work.
- *Developing clear guidelines for the implementation of AI in auditing.*
 - *Issuing clear guidance on the use of AI tools.*
 - *Defining specific standards for the application of AI.*
 - *Approving an AI that helps eliminate repetitive tasks.*
- VI. Reducing Bureaucracy and Streamlining the Process:** There is a clear request to facilitate the process of AI implementation by removing bureaucratic hurdles and increasing the speed of approval of new technologies.
- *Less bureaucracy and regulation.*
 - *Greater agility in the review of implementation proposals.*
 - *Eliminating excess formalities and administrative requirements.*
- VII. Technical Advice and Personalised Support:** Respondents also suggest that individualised technical advice and practical guidance be provided to audit firms, especially smaller or less well-resourced ones.
- *Advice on this matter, application guides, practical courses.*
 - *Facilitating the work of audit firms through consulting and technical guidance.*
 - *Individualised assistance for technological implementation.*
- VIII. Privacy and Security:** A key aspect highlighted by respondents is to ensure the protection of sensitive data and privacy in the use of AI tools.
- *Ensuring the privacy of information through clear rules.*
 - *Ensuring security and ethical standards in AI tools.*
 - *Providing a catalogue of solutions that meet confidentiality criteria.*
- IX. Promotion and Dissemination:** Respondents suggest that the supervisory body should be more proactive in disseminating information about AI, its applications and benefits, to encourage its adoption.
- *Being proactive in reporting on AI tools and updates.*
 - *Promoting the adoption of AI with useful and updated communications.*
 - *Carrying out awareness campaigns and dissemination of good practices.*

In summary, the responses focus on the need for more training, less bureaucracy, and the development of common tools to facilitate the integration of AI into the work of audit firms. In addition, the need to identify existing tools that are adapted to their needs and validated especially for small firms is mentioned. The need for clear guidelines to ensure the responsible and consistent use of AI to facilitate the technological transition in the audit sector is mentioned.

6 General conclusions of the report

This report summarises the results of a survey of 530 employees from audit firms in Spain and other countries on the impact and perception of AI in the audit sector. The findings highlight both the benefits and challenges associated with adopting this technology.

Adoption of AI: between innovation and resistance to change. Artificial intelligence is being integrated into auditing, but unevenly. While large firms have made progress in implementing tools and strategies, many organisations still lack a clear focus. This reflects a gap between the possibilities offered by AI and the barriers that hinder its adoption, such as ignorance, lack of training, or the initial investment required.

Transformation of the auditor's role. AI is redefining the auditor's job, shifting the focus from performing manual tasks to a more analytical and strategic role. However, this change is not uniform: some professionals see AI as a tool to optimise their functions, while others perceive it as a threat to their traditional role. The adaptation of audit firm employees will depend on their ability to develop new skills and understand AI as an ally in their work.

Dilemma between efficiency and trust. AI promises to improve the efficiency and quality of audits, reducing errors and speeding up processes. However, trust in these tools remains a challenge. Concerns remain about the transparency of the algorithms, the possibility of bias in the results and the need for human oversight. Audit still relies on professional judgement, and AI, instead of replacing it, should enhance it with better analysis and evidence.

Impact on the relationship with clients. The introduction of AI in auditing not only transforms internal processes, but also the relationship with clients. Automation can generate more detailed and accurate reports, improving communication and decision-making. However, some customers do not yet perceive its added value and may be wary of technological intervention in sensitive processes. Greater transparency of the process is key to demonstrate how AI strengthens, and does not replace, traditional auditing.

Gap between large and small firms. While large firms have made significant progress in developing and implementing in-house AI tools, small and medium-sized firms are finding it more difficult to incorporate them. This could create an increasingly polarised sector, where only firms with more resources can fully leverage AI. Without adequate support, many firms could be left behind, affecting their competitiveness in an increasingly digitised environment.

The role of regulation and supervision. The implementation of AI in auditing poses regulatory and ethical challenges that have not yet been fully resolved. Regulation progresses more slowly than technology, leaving gaps that generate uncertainty about the framework in which AI should operate. In addition, audit firm employees demand clear guidelines to ensure that the use of AI meets quality and professional ethical standards.

Overall, the report shows that AI is a tool with great potential in auditing, but its effective integration will depend on overcoming technical, organisational and cultural barriers. The key is not just to implement the technology, but to transform the mindset of practitioners and the surrounding regulatory environment.

6.1. Final implications and recommendations

The most relevant implications and recommendations are summarised in three aspects (1) progress and benefits, (2) challenges and concerns, (3) strategic implications.

Key Progress and Benefits

Growing adoption: Although only 27.36% of firms have a comprehensive AI strategy, large firms, especially the Big 4, are leading the way in implementation.

Automation and accuracy: AI excels at automating routine tasks, analysing data, and improving the quality and accuracy of audits.

Training: 44.91% of respondents have received training in AI, with an average of 12 hours per year. However, a gender gap in training persists.

Challenges and Concerns

High upfront costs: More than 70% consider initial investment in technology and training to be a significant barrier.

Trust in AI: Only 10% fully trust the accuracy of AI tools, while 65% express concern about errors and biases in decisions based on AI.

Client distrust: Some clients express concerns about data privacy and the reduction of the human role in auditing.

Strategic Implications

To maximise benefits and mitigate risks, it is recommended:

Adaptive strategies: Firms should design comprehensive AI implementation plans, starting with pilot projects in key areas.

Continuing education: It is crucial to train all levels of professionals, ensuring gender equity and a practical approach to the use of AI tools.

Collaboration with experts: Integrate AI specialists to ensure accuracy and reliability.

Regulatory support: The adoption of AI should be encouraged through clear regulations and accessible tools.

Transparent communication: Strengthen client confidence through clear explanations on the use and benefits of AI.

In conclusion, AI offers transformative potential for auditing, but its adoption requires strategic planning, investment in talent and technology, and a commitment to transparency and ethics. With these elements, the sector can move towards more efficient, accurate and competitive auditing.

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Annexes

Annex 1: List of countries represented by survey respondents

Country	No.	%
Germany	3	0.57%
Argentina	4	0.75%
Australia	4	0.75%
Austria	4	0.75%
Belgium	1	0.19%
Brazil	2	0.38%
Canada	1	0.19%
Cyprus	2	0.38%
Colombia	1	0.19%
Denmark	3	0.57%
Ecuador	3	0.57%
Spain	442	83.40%
Philippines	1	0.19%
France	1	0.19%
Guatemala	5	0.94%
Honduras	1	0.19%
Ireland	2	0.38%
Israel	1	0.19%
Italy	8	1.51%
Jordan	1	0.19%
Lebanon	1	0.19%
Luxembourg	8	1.51%
Mexico	3	0.57%
Mozambique	1	0.19%
Nigeria	1	0.19%
Norway	1	0.19%
The Netherlands	10	1.89%
Pakistan	1	0.19%
Peru	1	0.19%
Portugal	7	1.32%
United Kingdom	2	0.38%
Switzerland	1	0.19%
Turkey	1	0.19%
Uruguay	1	0.19%
ND	1	0.19%
Total	530	100.00%

Annex 2: List of cities represented by survey participants¹⁵

SPAIN	Number	%
Álava	2	0.45%
Albacete	2	0.45%
Alicante	8	1.80%
Almeria	1	0.22%
Asturias	6	1.35%
Badajoz	2	0.45%
Barcelona	47	10.56%
Burgos	1	0.22%
Castellón	3	0.67%
Cordoba	1	0.22%
Coruña	5	1.12%
Gerona	2	0.45%
Grenada	2	0.45%
Guipuzcoa	3	0.67%
Huelva	1	0.22%
Huesca	1	0.22%
La Rioja	2	0.45%
Las Palmas de GC	6	1.35%
Leon	11	2.47%
Lérida	1	0.22%
Madrid	259	58.20%
Malaga	5	1.12%
Murcia	13	2.92%
Navarre	4	0.90%
Orense	1	0.22%
Palma de Mallorca	2	0.45%
Pontevedra	3	0.67%
Salamanca	2	0.45%
Santa Cruz de Tenerife	2	0.45%
Santander	4	0.90%
Seville	7	1.57%
Tarragona	2	0.45%
Toledo	2	0.45%
Valencia	15	3.37%
Valladolid	3	0.67%
Vizcaya	7	1.57%
Zaragoza	7	1.57%
Total	445	100.00%

OTHER COUNTRIES	Number	%
Aachen	1	1.15%
Abuja	1	1.15%
Alphen aan den Rijn	1	1.15%
Amman	1	1.15%
Amsterdam	4	4.60%
Antwerp	1	1.15%
Beirut	1	1.15%
Belém	1	1.15%
Bogotá	1	1.15%
Buenos Aires	4	4.60%
Canberra	1	1.15%
Mexico City	3	3.45%
Colony	1	1.15%
Den Haag	1	1.15%
Dresden	1	1.15%
Dublin	1	1.15%
Istanbul	1	1.15%
Florence	1	1.15%
Genoa	1	1.15%
Guatemala	5	5.75%
Guayaquil	2	2.30%
Hellerup	1	1.15%
Lahore	1	1.15%
Lima	1	1.15%
Lisbon	3	3.45%
London	2	2.30%
Luxembourg	8	9.20%
Maputo	1	1.15%
Milan	4	4.60%
Montceau-les-Mines	1	1.15%
Naestved	2	2.30%
Nicosia	2	2.30%
Oslo	1	1.15%
Pescara	1	1.15%
Porto	4	4.60%
Quito	1	1.15%
Rio de Janeiro	1	1.15%
Rotterdam	3	3.45%
Stuttgart	1	1.15%
Sydney	3	3.45%
Taguig	1	1.15%
Tegucigalpa	1	1.15%
Tel-Aviv	1	1.15%
The Hague	1	1.15%
Toronto	1	1.15%
Treviso	1	1.15%
Vienna	4	4.60%
Waterford	1	1.15%
Zug	1	1.15%
Total	87	100.00%

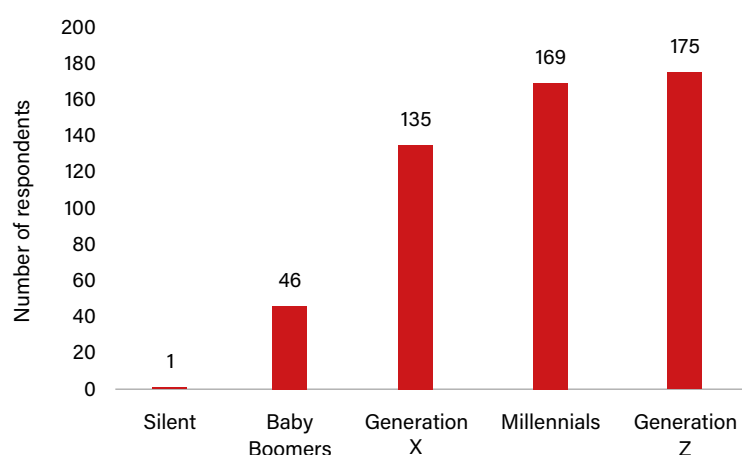
¹⁵ Some respondents report working in several cities on a regular basis.

Annex 3: Additional analysis of respondents' demographic data

Annex 3 presents information on the respondents' demographic data that complements Section 2 of the report.

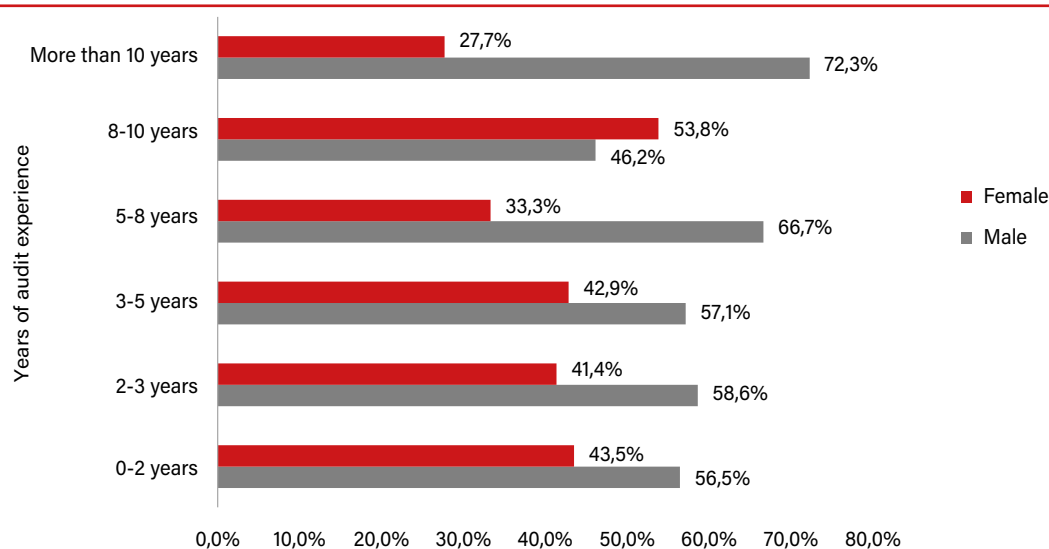
Figure A3. 1 shows the distribution by generation. Silent Generation (1928-1945): 1; Baby Boomers (1946-1964): 46; Generation X (1965-1980): 135; Millennials (1981-1996): 169; Generation Z (1997-2012): 175. The distribution of the data shows that Generation Z are the largest group with 175 respondents, followed by Millennials with 169 and Generation X with 135.

//// **FIGURE A3.1** Distribution of respondents by generation



In the higher ranges of experience (8 to 10 years, more than 10 years), the differences are very noticeable (Figure A3. 2). In the "More than 10 years" range, men account for 72.3%, while women account for 27.7%. This suggests a lower representation of women in more experienced positions among survey respondents.

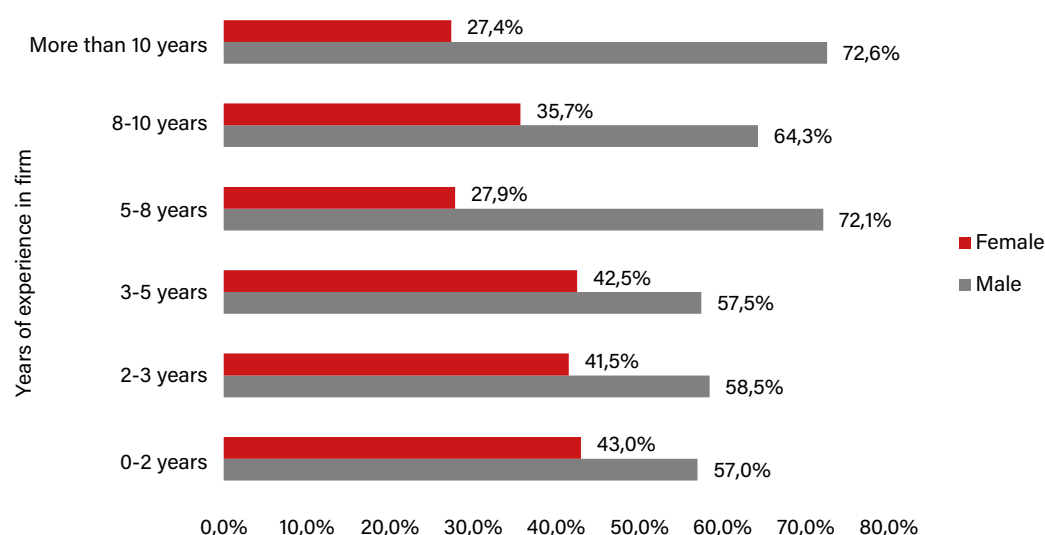
//// **FIGURE A3.2** Distribution by gender and years of experience in auditing



↑ Note: The percentage (%) on each bar represents the number of respondents out of the total number of respondents for that range of years of experience.

Clear male predominance at the most experienced levels within the firm (Figure A3. 3). In categories such as "More than 10 years" (72.6%) and "8 to 10 years" (64.3%), men represent a significant majority, which could be evidence of a gender gap in the retention or promotion of women over time. On the other hand, in the groups with less experience ("0-2 years" and "2-3 years"), the proportion is more balanced, although men are still in the majority, with 57% and 58.5% respectively.

//// **FIGURE A3.3** Distribution by gender and years of experience in current firm



↑ Note: The percentage (%) on each bar represents the number of respondents out of the total number of respondents for that range of years of experience.

In all professional categories, male respondents outnumber female respondents (Figure A3. 4). Gender differences are more significant at the more senior levels (e.g. "Partners" and "Director") and more balanced at lower levels such as "Assistant". In the lower categories "Assistant" and "Senior Assistant", female representation is more similar to male representation.

//// **FIGURE A3.4** Respondents by professional category and gender

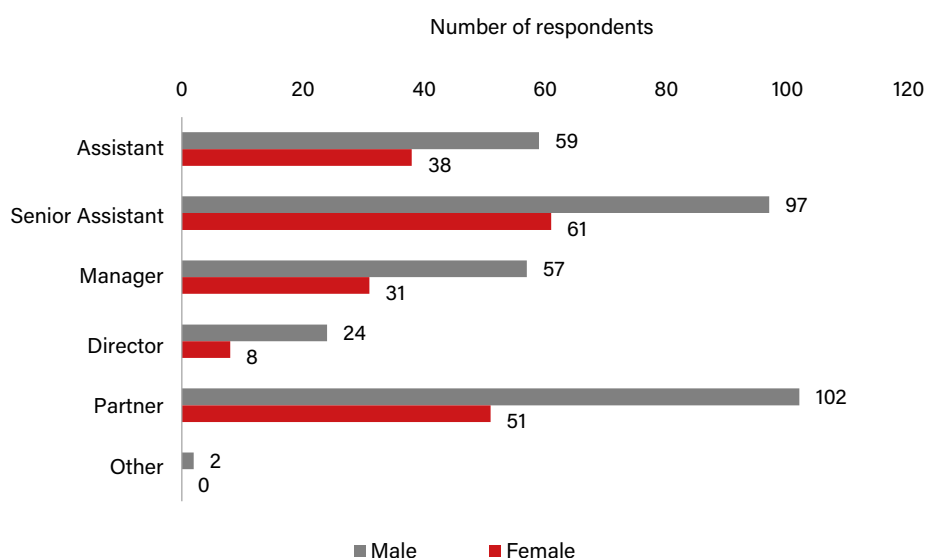
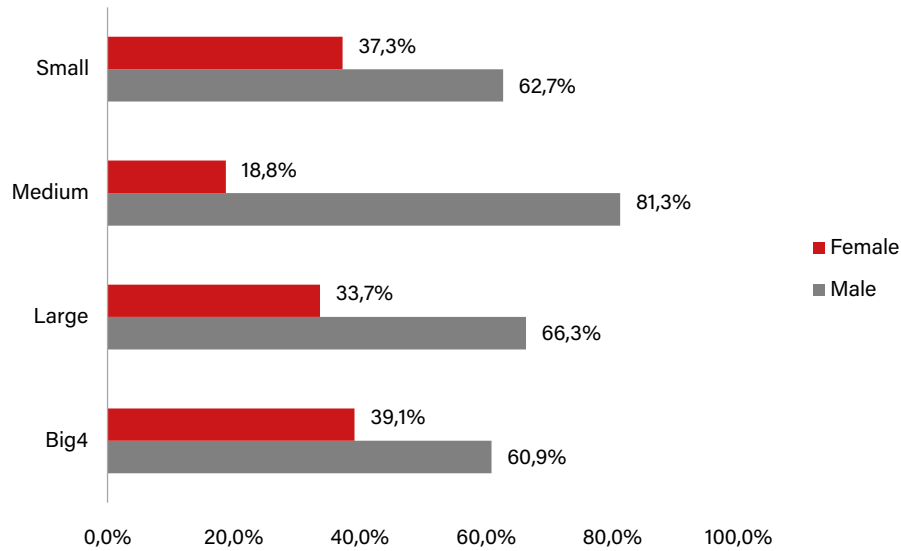


Figure A3. 5, shows that in small firms, women represent 37.3%. While this figure is lower than that for men, it still reflects a significant presence. In medium-sized firms, men account for 81.3%, the most extreme figure across all categories, indicating a clear male dominance. While women in medium-

sized firms account for 18.8%, which is the lowest proportion of female representation of all categories.

//// **FIGURE A3.5** Participation by firm size and gender



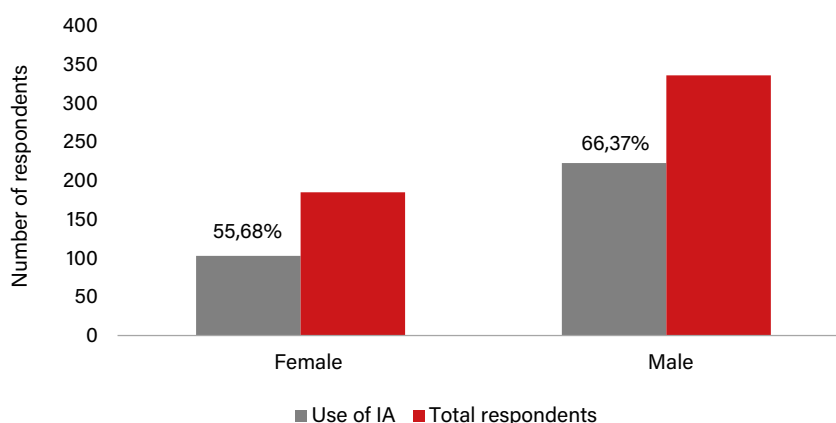
↑ Note: The percentage (%) on each bar represents the number of respondents in that category out of the total number of respondents for each firm size.

Annex 4: Additional analyses on level of expertise and training, and the impact of AI on the firm-client relationship

Annex 4 presents information that complements sections 3 and 4 of the report.

66.37% of male respondents use it in the daily performance of their duties compared with 55.68% of female respondents [See Figure A4. 1]. Although in previous studies women have shown to be more innovative in adopting disruptive technologies and methods¹⁶, in this case, the men surveyed show a higher proportion of use of AI in their daily work.

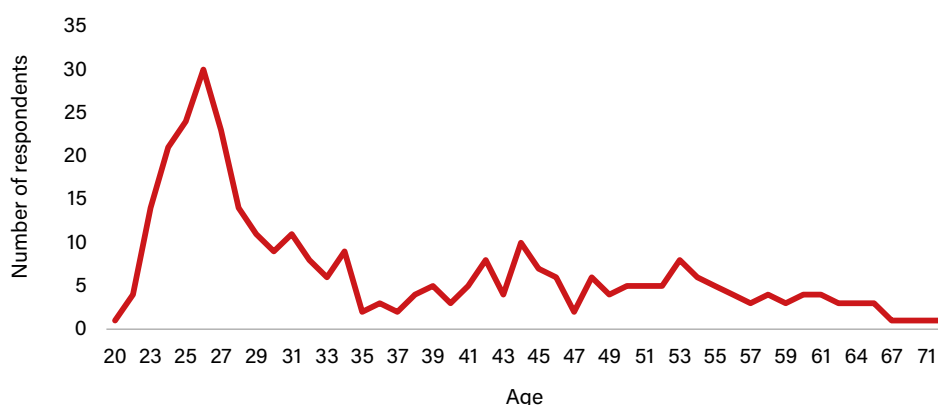
//// **FIGURE A4.1 Use of AI by Gender**



↑ Note: Percentage (%) represents no. of persons (according to gender) / total respondents (according to gender).

Figure A4. 2 shows a higher concentration of AI users between the ages of 22 and 28, with a peak at age 26. This suggests that younger people are adopting AI more frequently, which could be due to greater technological familiarity or recent entry into the labour market with modern tools. However, as age increases, the number of people using AI decreases. This is particularly noticeable after the age of 35, where the numbers drop considerably. From the age of 60 onwards, there are very few users who claim to use AI. This could reflect a generation gap in technology adoption.

//// **FIGURE A4.2 Use of AI Tools by Age**

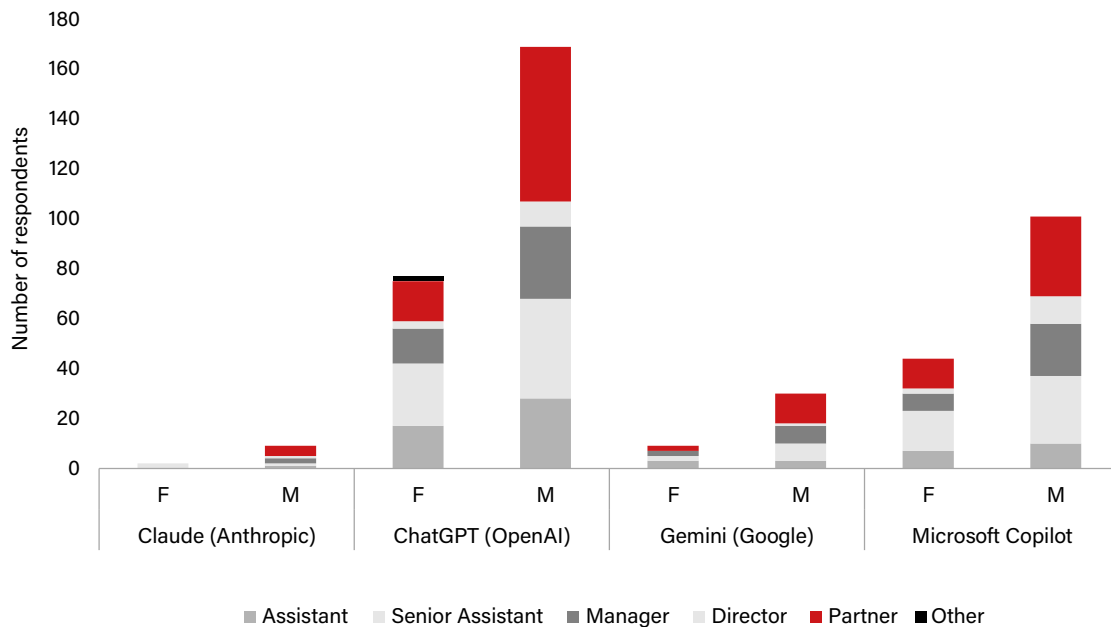


The results of Figure A4. 3 to Figure A4. 10 are not based on percentages but directly on respondents' answers and are therefore biased by the number of participants in each category. For example, the number of male respondents in our survey was higher than the number of female respondents and this is reflected in the figures.

¹⁶ "Mujeres líderes en tecnología superan a los hombres en la adopción de la IA generativa: Estudio." [Women tech leaders outpace men in generative AI adoption: Study] Forbes, 11 June 2024

Figure A4. 3 shows that the generative AI most used by respondents is ChatGPT and Microsoft Copilot. Those who use the technologies the most are male audit firm employees, who are also the most represented in the survey and in the sector in general. Partners and Senior Assistants are the most frequent users of these technologies.

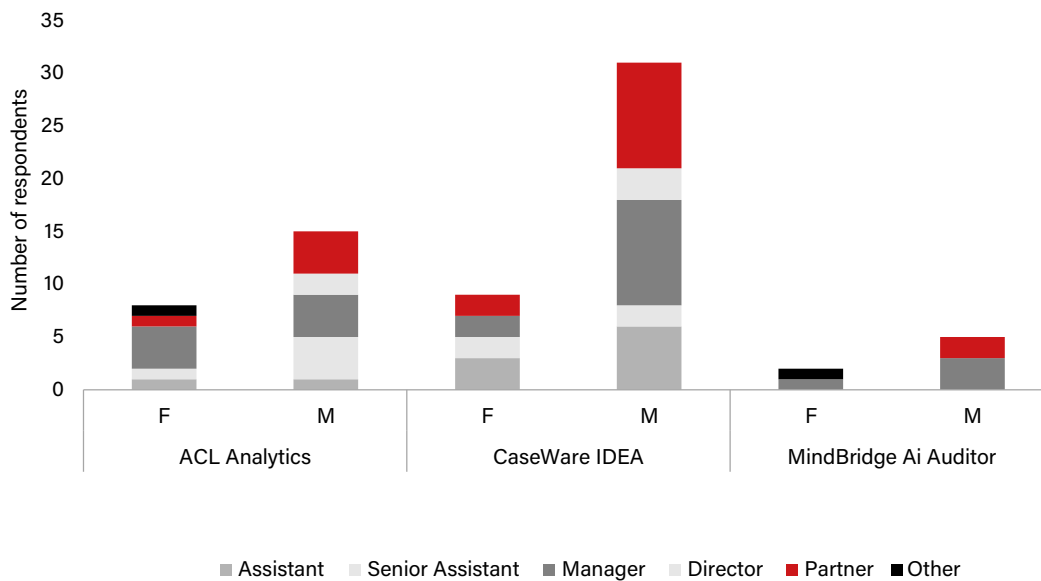
//// **FIGURE A4.3** Generative AI by professional category and gender



↑ Note. F: Female, M: Male.

Figure A4. 4 shows that non-generative AI most used by respondents is CaseWare IDEA and ACL Analytics. Men are the main users of the technologies, although they are also the most represented in the survey and in the sector in general. Partners and managers are the main users of these technologies.

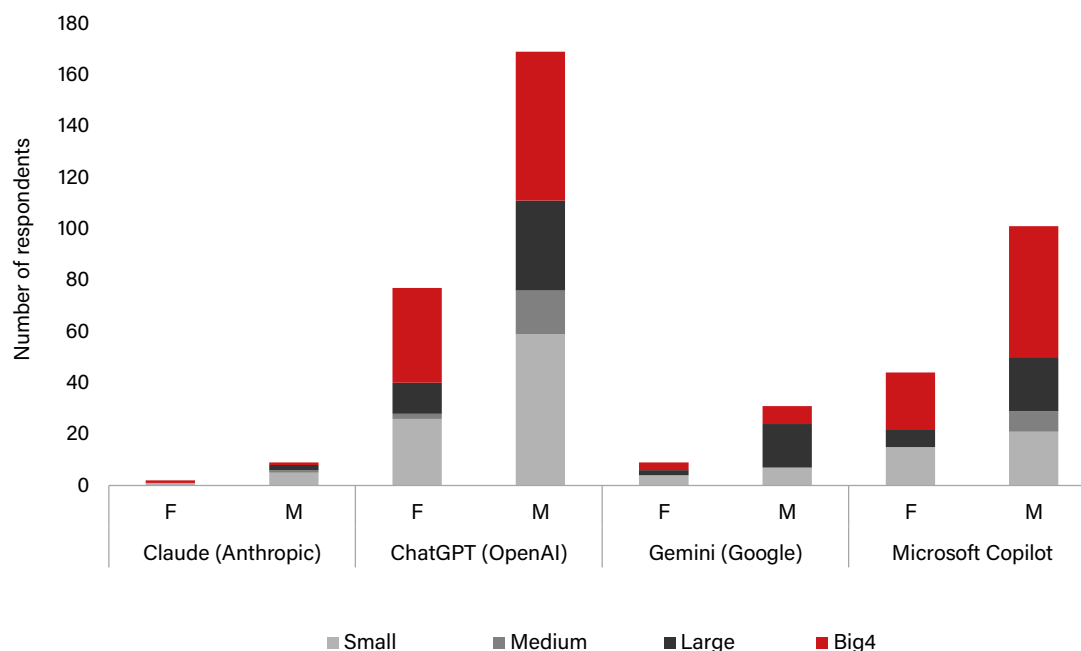
//// **FIGURE A4.4** Non-generative AI by professional category and gender



↑ Note. F: Female, M: Male.

Continuing with the analysis shown in Figure A4. 3, Figure A4. 5 shows that Big 4 employees use ChatGPT and Microsoft Copilot the most, followed by large firms. Small firms also use ChatGPT to a large extent. By gender, the use of ChatGPT appears to be in the same percentage by firm size for female and male audit firm employees.

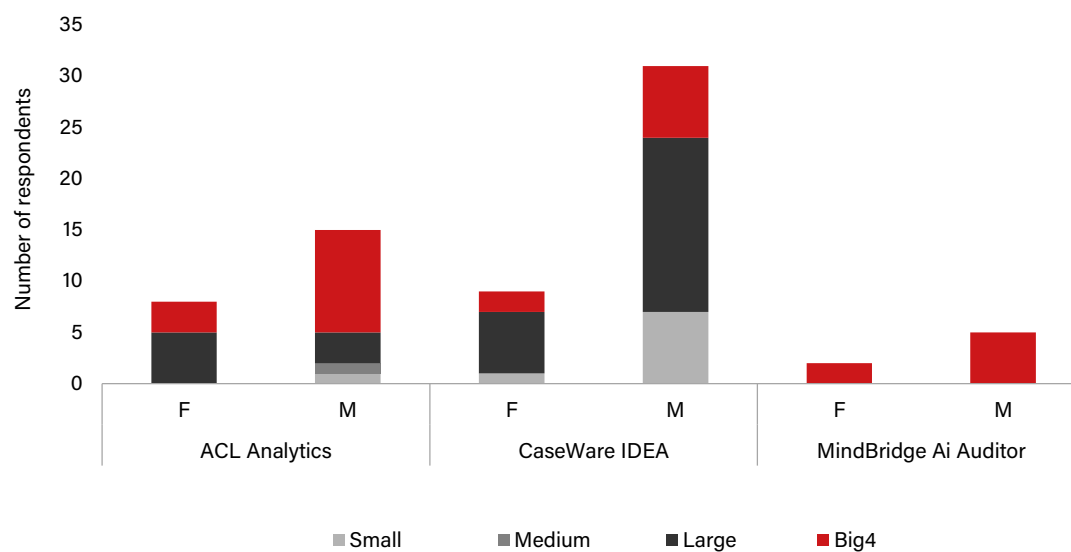
//// **FIGURE A4.5** Generative AI by firm size and respondent gender



↑ Note: F: Female, M: Male.

Continuing with the analysis shown in Figure A4. 4, Figure A4. 6 shows that large firms use CaseWare IDEA the most, followed by the Big 4. Men working in large firms use CaseWare IDEA more than women, but in the case of ACL Analytics, women working in large firms use it more than men.

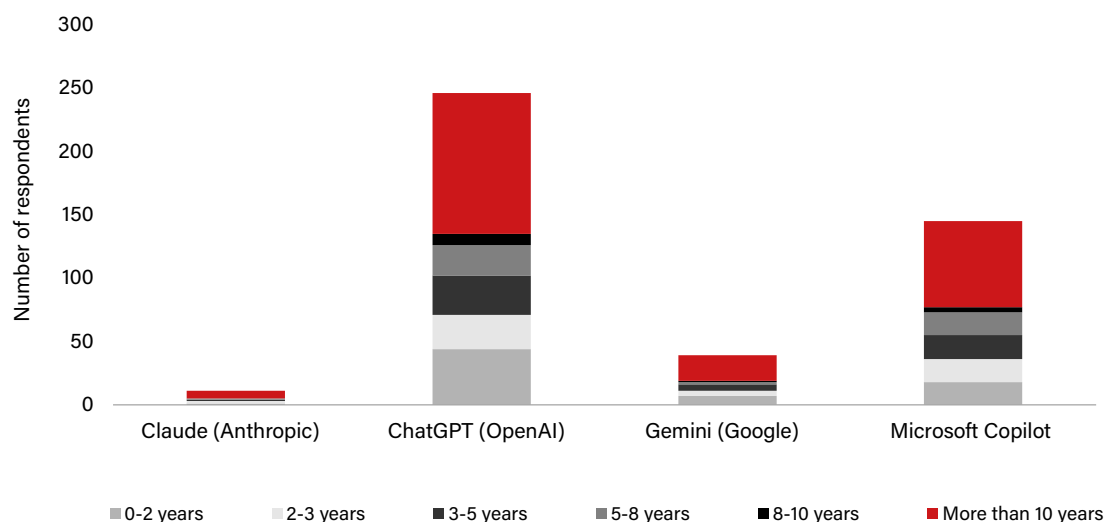
//// **FIGURE A4.6** Non-generative AI y firm size and respondent gender



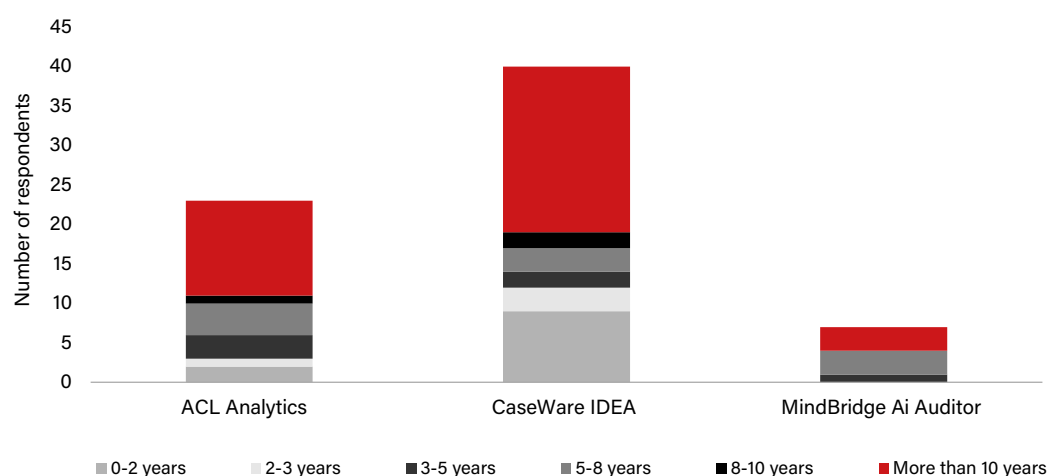
↑ Note: F: Female, M: Male.

By years of experience in the sector, and among the respondents participating in our survey, both generative AI (Figure A4. 7) as well as non-generative AI (Figure A4. 8) is mainly used by audit staff with more than 10 years of experience, followed by those with between 0 and 2 years of experience.

//// **FIGURE A4.7** Generative AI by years of experience in the sector

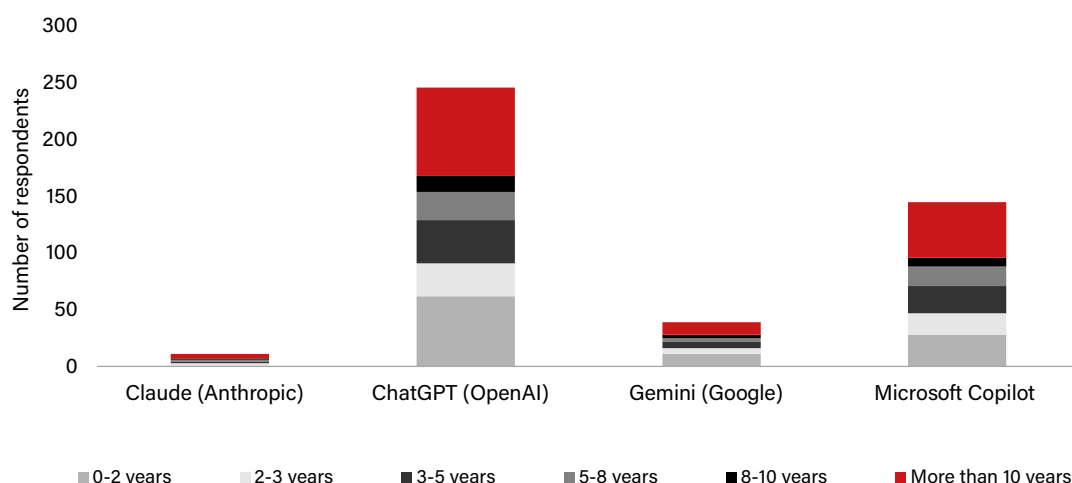


//// **FIGURE A4.8** Non-generative AI by years of experience in the sector



By years of service in the audit firm, the results of Figure A4. 9 for generative AI and Figure A4. 10 for non-generative AI, are similar to those shown in Figure A4. 7 and Figure A4. 8.

//// **FIGURE A4.9** Generative AI by years of service in the firm



//// **FIGURE A4.10** Non-generative AI by years of service in the firm

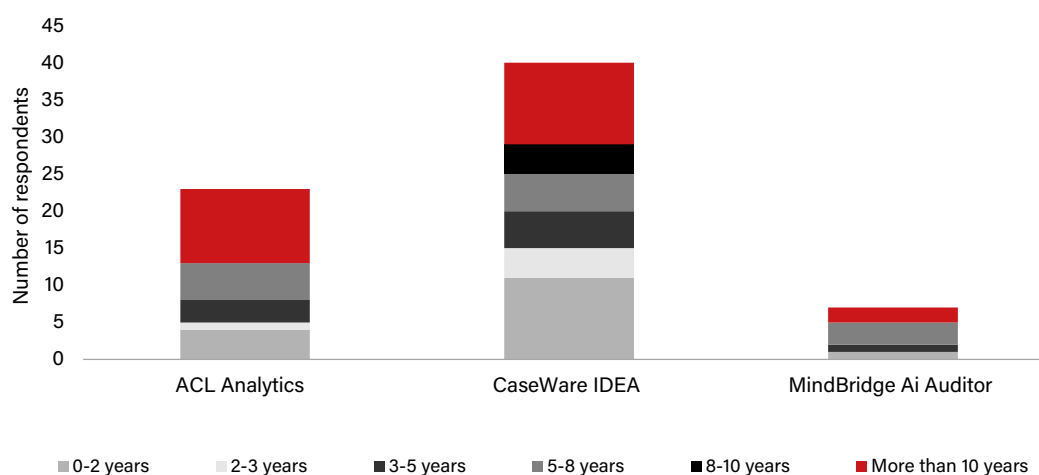


Table A4. 1 shows that, overall, men tend to be slightly more satisfied with the use of AI in auditing than women, with 46.24% reporting a score of 4 or 5, compared with 40.74% of women. In the scores of "very dissatisfied" and "dissatisfied", reporting a score of 1 or 2, the results are similar for men and women, with 20.37% for women and 21.97% for men. Dissatisfaction with AI is relatively evenly distributed between men and women, with men tending to rate their overall experience more positively.

Managers are the most satisfied with the AI, with 48.89% of responses in the 4 and 5 category, respectively. They are followed in terms of satisfaction by Directors with 47.06%. Partners, on the other hand, with 32.25%, are the professional category with the highest level of dissatisfaction, reporting scores of 1 or 2. In other words, one in every 5 Partners states they are "very dissatisfied" with the use of AI in auditing, possibly reflecting unmet expectations regarding the use of AI.

Big 4 firms are by far the most satisfied with AI, with 58.22% of respondents giving a score of 4 or 5. In contrast, large firms report the highest levels of dissatisfaction, with 60.98% of respondents giving a score of 1 or 2. This could reflect implementation constraints or unmet expectations.

//// **FIGURE A4.1** Satisfaction with the use of AI in auditing

Gender	1	%	2	%	3	%	4	%	5	%	Total
Female	18	16.67%	4	3.70%	42	38.89%	33	30.56%	11	10.19%	108
Male	20	11.56%	18	10.40%	55	31.79%	56	32.37%	24	13.87%	173
Total	38	13.52%	22	7.83%	97	34.52%	89	31.67%	35	12.46%	281
Professional Category											
Assistant	6	10.53%	6	10.53%	19	33.33%	21	36.84%	5	8.77%	57
Senior Assistant	11	11.96%	5	5.43%	33	35.87%	28	30.43%	15	16.30%	92
Manager	3	6.67%	3	6.67%	17	37.78%	16	35.56%	6	13.33%	45
Director	3	17.65%	1	5.88%	5	29.41%	6	35.29%	2	11.76%	17
Partners	15	22.06%	7	10.29%	23	33.82%	18	26.47%	5	7.35%	68
Total	38	13.62%	22	7.89%	97	34.77%	89	31.90%	33	11.83%	279
Firm Size											
Small	24	33.80%	5	7.04%	26	36.62%	11	15.49%	5	7.04%	71
Medium	6	25.00%	3	12.50%	11	45.83%	3	12.50%	1	4.17%	24
Large	3	3.66%	47	57.32%	13	15.85%	12	14.63%	7	8.54%	82
Big 4	5	3.42%	9	6.16%	47	32.19%	63	43.15%	22	15.07%	146
Total	38	11.76%	64	19.81%	97	30.03%	89	27.55%	35	10.84%	323

↑ Note: 1 being very dissatisfied and 5 being very satisfied.

Table A4. 2 complements the main findings presented in Section 4 of the report. The table shows that 46.05% of respondents agree that AI will improve the quality of reporting, i.e. scores of 4 and 5. The highest figure is for small firms with 49.71% of respondents supporting this statement. 24.26% of Big 4 employees agree or strongly agree with the second statement. In other words, one in five believe that AI could generate distrust due to issues of understanding, privacy or security. This reflects widespread concern about the risks that AI could bring to relationships. Overall, the majority of respondents are neutral (34.27% on score 3), with 22.65% on score 4. This indicates that while there is no clear consensus on whether AI will affect the relationship or not, a significant part believes it will not have a significant impact. 49.08% of the employees of small firms agree or strongly agree with this statement.

//// **FIGURE A4.2** Impact of AI on the Auditor-Client Relationship

It will improve the relationship by generating higher quality reporting											
	1	%	2	%	3	%	4	%	5	%	Total
Small	12	6.94%	25	14.45%	50	28.90%	56	32.37%	30	17.34%	173
Medium	2	4.17%	8	16.67%	18	37.50%	14	29.17%	6	12.50%	48
Large	3	3.13%	19	19.79%	34	35.42%	25	26.04%	15	15.63%	96
Big 4	8	3.96%	26	12.87%	75	37.13%	63	31.19%	30	14.85%	202
Totals	25	4.82%	78	15.03%	177	34.10%	158	30.44%	81	15.61%	519
It will worsen the relationship by creating distrust (issues of understanding, privacy, security)											
	1	%	2	%	3	%	4	%	5	%	Total
Small	25	15.15%	50	30.30%	63	38.18%	21	12.73%	6	3.64%	165
Medium	5	10.64%	11	23.40%	22	46.81%	7	14.89%	2	4.26%	47
Large	15	15.63%	34	35.42%	28	29.17%	13	13.54%	6	6.25%	96
Big 4	28	13.86%	54	26.73%	71	35.15%	35	17.33%	14	6.93%	202
Totals	73	14.31%	149	29.22%	184	36.08%	76	14.90%	28	5.49%	510
It will not significantly affect the relationship											
	1	%	2	%	3	%	4	%	5	%	Total
Small	18	11.04%	16	9.82%	49	30.06%	42	25.77%	38	23.31%	163
Medium	7	15.22%	6	13.04%	17	36.96%	10	21.74%	6	13.04%	46
Large	13	13.98%	10	10.75%	30	32.26%	24	25.81%	16	17.20%	93
Big 4	22	11.17%	40	20.30%	75	38.07%	37	18.78%	23	11.68%	197
Totals	60	12.02%	72	14.43%	171	34.27%	113	22.65%	83	16.63%	499

↑ Note: 1 being strongly disagree and 5 being strongly agree.

Annex 5: International analysis on the use of AI in auditing

A5.1. Introduction

This annex complements the analyses developed in the main report by comparing respondents working in audit firms in Spain with those employed in other countries. The aim of this section is to examine differences in the adoption, training, and perception of AI in auditing at the international level, identifying global trends and potential areas for improvement in the Spanish context. This represents a first identification of the differences between Spain and the rest of the world, included here as a brief and general overview, to be followed up by a more detailed international study. The methodology used in this analysis follows the same structure as detailed in *Section 1.5 Sources of information, methodology and study structure* of the report. However, for this annex, we have segmented the sample of respondents into two groups:

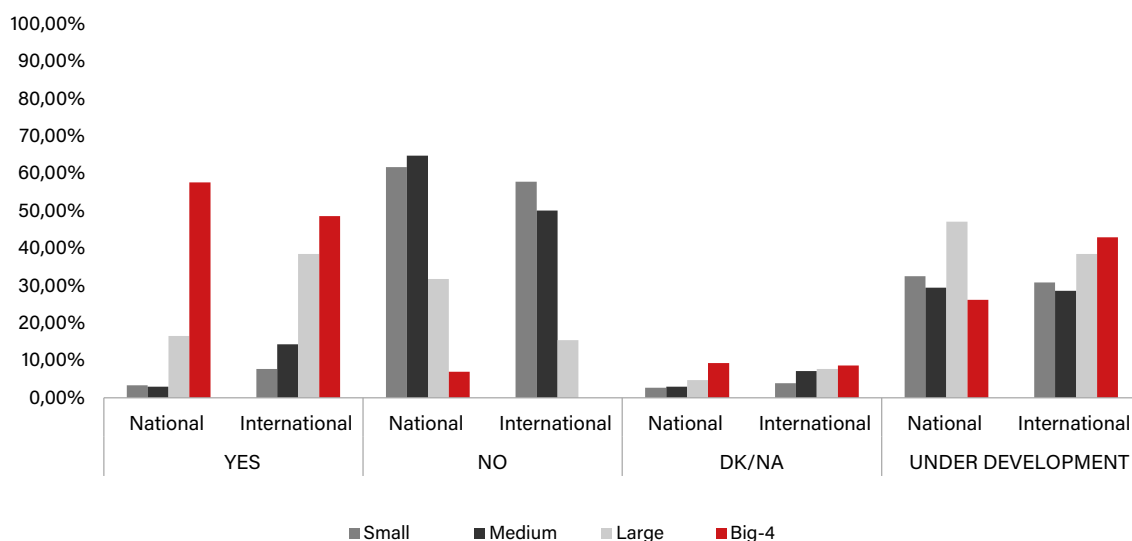
- 1. Spain:** Employees working in firms based in Spanish territory.
- 2. International:** Employees working in firms based in other countries.

Based on this distinction, we analysed several key aspects related to Section 2 of the report, including the status of AI strategy implementation, the extent of professional training, the use of generative and non-generative AI tools, and the perception of AI's impact on auditing by country of employment. This analysis enables us to contextualise the progress of AI in auditing within a global comparative framework. One important consideration is that the Big 4 and some large firms included in this study are international in nature, meaning responses from employees in Spain and abroad should, in principle, be similar. Our results show that this is not always the case. This aspect merits further investigation and is scheduled for inclusion in a future, more detailed international study.

A5.2. AI strategy in international vs. Spanish audit firms

One of the key areas assessed in the study is the existence of AI strategies within audit firms. The results show that progress in AI integration is more consistent in international firms. In Spain, a significant proportion of Big 4 respondents reported that their firm had implemented an AI strategy (Figure A5. 1). In contrast, in Spain, a large number of firms, mainly small and medium-sized firms, have yet to define a clear strategy. Outside Spain, however, the pace of AI strategy adoption in small and medium-sized firms appears to be faster.

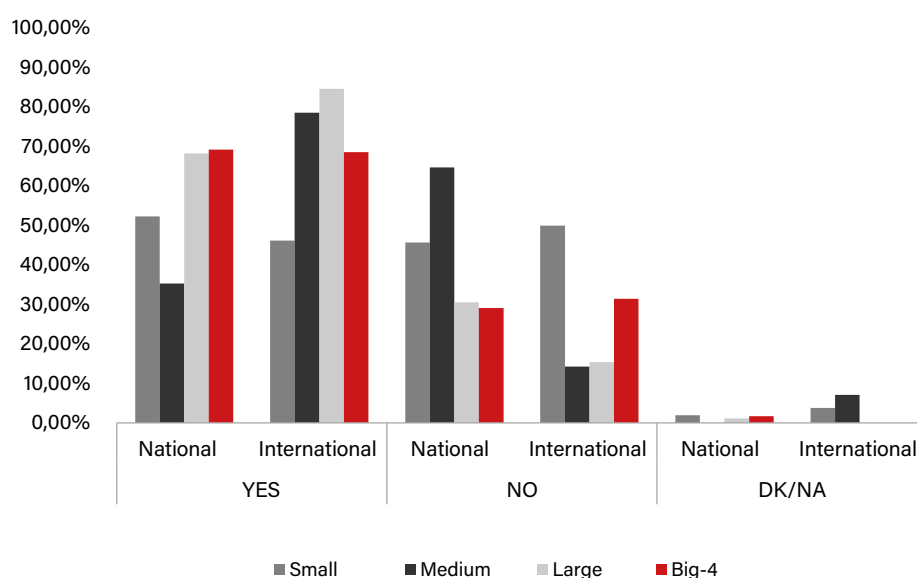
//// **FIGURE A5.1** AI strategy implementation stage by firm size



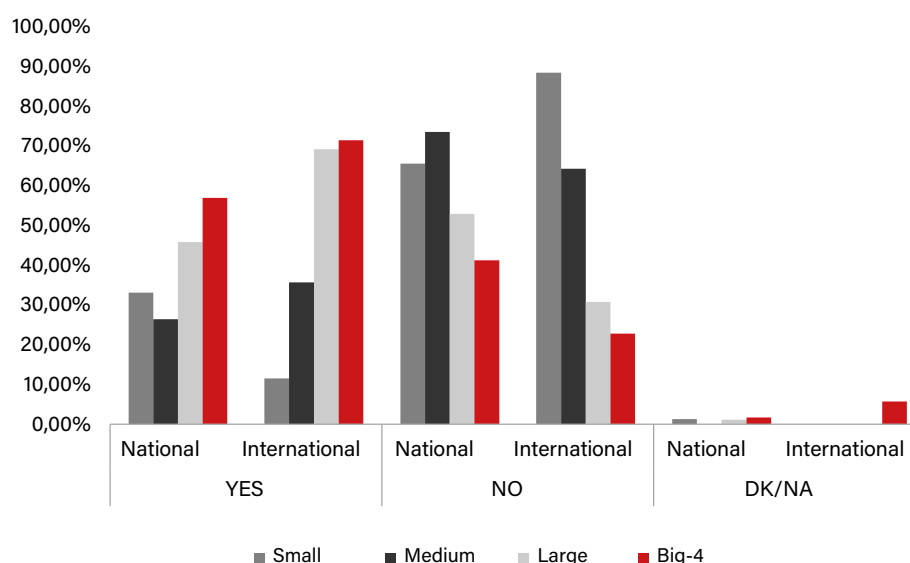
A5.3 Use of AI and AI training: Differences between Spain and the international sphere

The use of AI tools and the training received by auditors is analysed according to the country where they work. In international firms, the daily use of AI is slightly higher than in Spain (Figure A5. 2), especially in large and medium-sized firms. With respect to training, the data show that audit firm employees of international firms have received somewhat more extensive training in AI (Figure A5. 3). While in Spain there are still many companies that have not provided specific AI training, abroad this training is more common and recurring and seems to be less frequent only in small firms. This evidence indicates the need to promote AI training programmes in Spain to facilitate the transition towards more technology-driven audits.

//// **FIGURE A5.2** Daily use of AI by firm size



//// FIGURE A5.3 Training in AI



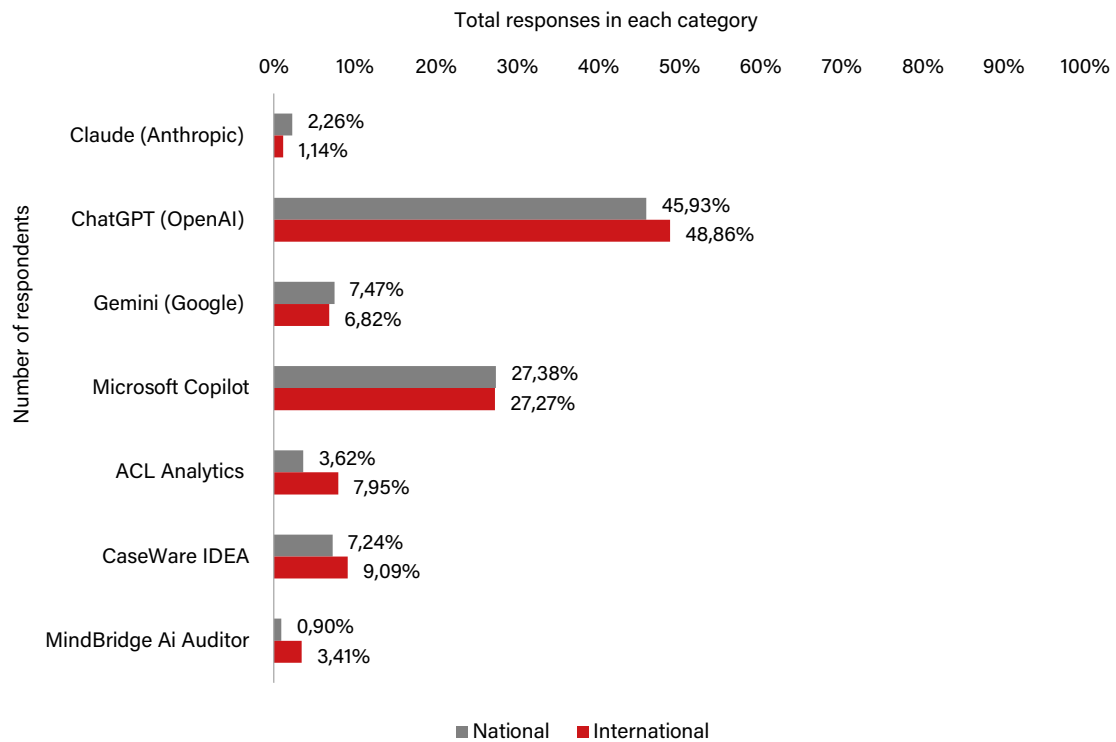
A5.4. Use of generative and non-generative AI in the international context

Another key difference between audit firm employees in Spain and in other countries is the type of AI tools used. Among all respondents, generative AI tools (such as *ChatGPT*) are more widely used in international firms than in Spain. Overall, the use of non-generative AI tools is also higher internationally according to respondents' answers (Figure A5. 4).

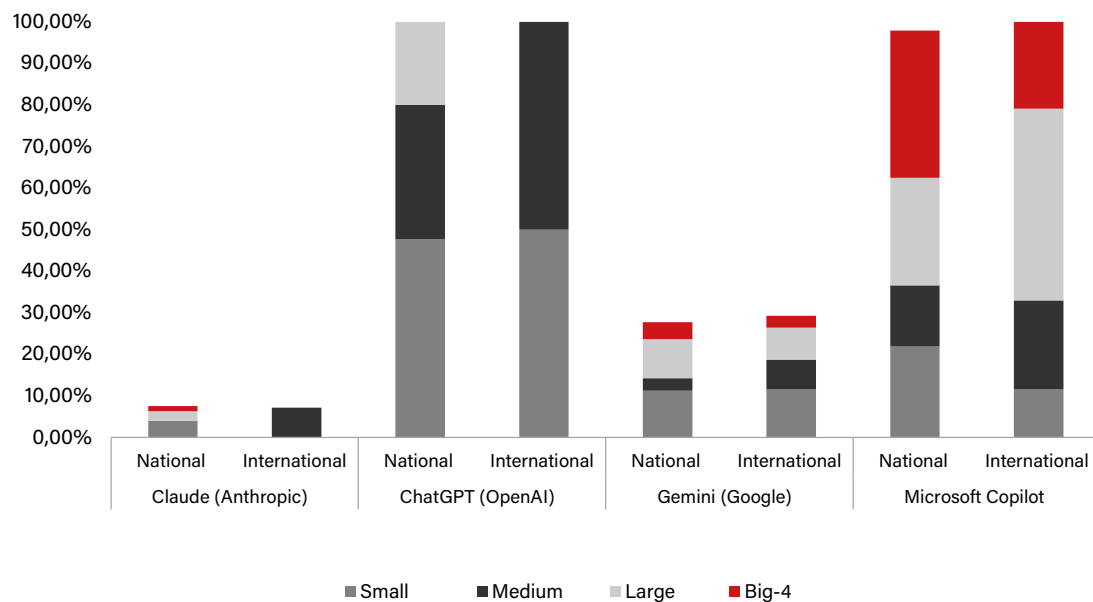
When broken down by firm size, international firms (Figure A5. 5 and Figure A5. 6) show a higher use of generative AI tools (such as *ChatGPT* or *Microsoft Copilot*) across all firm sizes compared with Spanish firms. The difference is particularly notable in large firms, where the adoption rate of generative AI is significantly higher internationally. In medium and small firms, the gap remains considerable, but the use of generative AI in Spanish firms remains lower. Notably, *ChatGPT* is more widely used in Spain than internationally.

International firms use non-generative AI to a greater extent than Spanish firms. *CaseWare IDEA* is the most widely adopted tool in auditing, both in Spain and internationally. In second place, the most used tool in Spain is *ACL Analytics*. *MindBridge Ai Auditor* is not yet a mainstream tool, but it has more presence in the international Big 4.

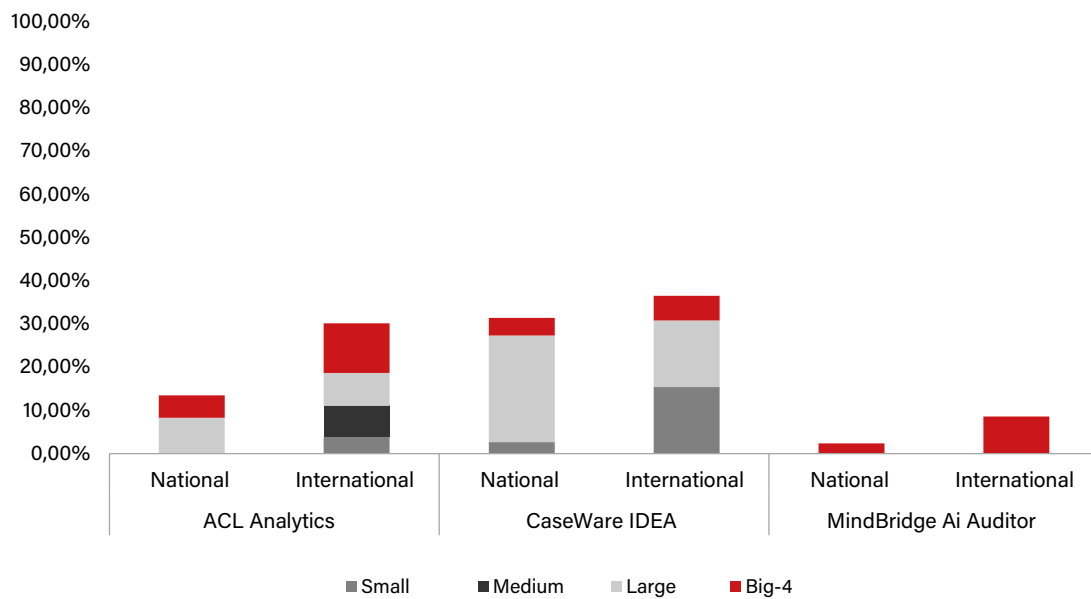
//// **FIGURE A5.4** Generative and non-generative AI users: Spanish vs. International



//// **FIGURE A5.5** Use of Generative AI by firm size (Spanish vs. International)- expressed as %



//// **FIGURE A5.6** Use of non-generative AI by firm size (Spanish vs. International)- expressed as %



A5.5 Conclusions from the international analysis

This comparative analysis between audit firms in Spain and those abroad highlights differences in AI adoption, training, and tool usage. Internationally, the landscape is more homogeneous, with less pronounced differences by firm size. In Spain, many firms are still in the development phase or have yet to define a clear strategy. In terms of usage, the adoption of both generative and non-generative AI tools is slightly higher internationally, particularly for non-generative AI across all firm sizes. Although ChatGPT usage is relatively high in Spain, other countries present a more diversified AI ecosystem, with tools like Microsoft Copilot, ACL Analytics, and MindBridge Ai Auditor showing slightly greater presence according to respondents' answers.

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