



# The Impact of AI and ML Tools on the Accounting and Auditing Profession: A Survey of Student Expectations

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## Abstract

The accounting and auditing profession is undergoing a significant transformation driven by the rapid advancement and incorporation of artificial intelligence (AI) and machine learning (ML) tools. These innovative technologies have the potential to automate mundane tasks, improve data analysis capabilities, and enhance decision-making processes, fundamentally changing how accounting and auditing professionals carry out their responsibilities. While these advancements present challenges and opportunities, they also require a reevaluation of skills, knowledge, and ethical considerations for the profession to flourish in this evolving environment. This paper investigates the expectations of accounting and auditing students regarding the impact of artificial intelligence (AI) and machine learning (ML) tools on their future professions. Data was collected through a structured survey questionnaire completed by a sample of 98 students. Statistical methods, including regression analysis, were used to analyze the collected data. The results indicate that students are generally optimistic about the potential of these technologies to enhance efficiency, accuracy, and decision-making in accounting and auditing. However, they also express apprehensions about job security and the necessity for continuous learning to adapt to technological advancements. This research contributes to the literature by offering insights into the expectations of future professionals in the accounting and auditing domain and emphasizing the significance of preparing students for the evolving technological landscape. The study's findings underline the importance of aligning educational programs with the demands of AI and ML integration to ensure the readiness of future practitioners.

**Keywords:** Accounting, Auditing, Artificial intelligence (AI), Machine learning (ML)

## 1. Introduction

As students prepare to enter the accounting and auditing profession, they are met with the prospect of an industry undergoing rapid transformation fueled by the integration of Machine Learning (ML) and Artificial Intelligence (AI) technologies. These advancements are reshaping traditional practices, offering new opportunities for automation, data analysis, and

decision-making processes. For students, understanding the impact of ML and AI on the accounting and auditing profession is crucial as they navigate their education and career paths in this evolving landscape.

The accounting and auditing fields have long been regarded as data-centric, relying on manual processes for data entry, analysis, and reporting. With the rise of ML and AI, there is a shift towards automating these tasks, allowing professionals to focus on more strategic and analytical aspects of their roles. This shift not only improves efficiency but also presents students with new challenges and opportunities as they prepare to enter the workforce.

Moreover, ML and AI technologies are changing the way audits are conducted, with tools capable of analyzing vast amounts of data in real time, detecting patterns, anomalies, and trends that may have been overlooked using traditional methods. This advanced analytics capability enhances audit quality and effectiveness, providing students with a glimpse into the future of auditing practices.

However, as students look towards a future where ML and AI are integral to the accounting and auditing profession, they must also consider the challenges these technologies bring. The adoption of ML and AI requires students to develop new skills, such as data analytics, programming, and AI model interpretation. Additionally, there are ethical considerations surrounding the use of AI and ML, particularly in areas such as data privacy, bias, and transparency, which students must navigate as they prepare to enter the workforce.

In this context, it is essential for students to understand the implications of ML and AI technologies on the accounting and auditing profession from their perspective. This paper explores the impact of ML and AI tools on the accounting and auditing profession from the viewpoint of students, focusing on their expectations, challenges, and opportunities as they prepare to enter a profession undergoing significant technological transformation. Through a comprehensive review of the literature and insights from students themselves, this paper aims to provide a student-centered view of the evolving landscape of accounting and auditing in the era of ML and AI.

The rest of the paper is organized as follows: in the following sections, we present the methodology, a comprehensive literature review and respective findings on the knowledge of financial reporting for SMEs. Next, the data analysis is presented. Based on the findings from data analysis several recommendations are offered. The study is concluded with the conclusion section.

## **2. Objectives and Purpose of the Study**

Students' expectations regarding the integration of AI and ML into the accounting and auditing profession are shaped by several factors, including their exposure to these technologies during their education, the perceived relevance of these tools in the job market, and the anticipated challenges and opportunities they foresee in their professional lives. These expectations are critical, as they reflect not only the readiness of future professionals to adapt to technological advancements but also their understanding of the ethical, technical, and practical implications of these tools in transforming traditional accounting and auditing practices. By exploring these factors in detail, the study provides a nuanced understanding of the preparedness of accounting students to navigate an evolving technological landscape.

The primary objective of this study is to explore the perceptions and expectations of accounting and auditing students regarding the integration of Artificial Intelligence (AI) and Machine Learning (ML) in their profession. It seeks to evaluate students' awareness of AI and ML applications in accounting and auditing and their attitudes toward how these technologies can

enhance efficiency, accuracy, and decision-making. The study also aims to identify challenges and concerns, such as ethical considerations, job displacement, and the over-reliance on algorithms, that students

perceive as potential barriers to the adoption of these technologies. Furthermore, the research provides recommendations for aligning educational curricula with the technological advancements shaping the profession, emphasizing the need for practical training and skill development in AI and ML. By analyzing how AI and ML redefine traditional roles, the study highlights the importance of cultivating complementary skills like data analysis, critical thinking, and ethical decision-making. Finally, it supports initiatives that encourage continuous learning and skill enhancement to ensure that students and future professionals are well-prepared to thrive in a rapidly evolving technological landscape.

### **3. Methodology**

This study utilizes a quantitative research design to collect and analyze data on students' expectations regarding the use of Artificial Intelligence (AI) and Machine Learning (ML) tools within the accounting and auditing profession. The research focuses on providing measurable insights into how students perceive these technologies and their potential implications for their future careers. Data collection is conducted through a structured survey questionnaire that is electronically distributed to accounting and auditing students enrolled in undergraduate and graduate programs at the University of Tirana and other universities in Albania. The survey is designed to capture a wide range of perspectives and ensure a broad understanding of students' expectations about AI and ML in their field.

The survey questionnaire includes closed-ended questions aimed at obtaining quantitative data related to students' perceptions of the relevance and benefits of AI and ML technologies, their expectations for the integration of these tools in accounting and auditing, and the challenges or concerns they associate with these advancements. The study investigates several variables of interest, including students' expectations of AI and ML tools in their profession and the factors that influence these expectations, such as their educational background, exposure to technology, and perceived career relevance. Demographic variables, including age, gender, educational level, and prior experience with AI and ML, are also incorporated to contextualize the findings and identify patterns or trends among different groups of students.

While this research offers valuable insights, it is important to acknowledge its limitations. One limitation lies in the use of convenience sampling, which may restrict the generalizability of the results since participants are selected based on their availability rather than through a randomized sampling method. Additionally, as the survey relies on self-reported data from students, there is a potential for response bias, where participants may provide answers that are socially desirable rather than fully reflective of their true perspectives. Furthermore, although the study involves students from multiple institutions, its geographic and institutional focus on Albania may limit the applicability of its findings to broader or international contexts.

Despite these limitations, the study is expected to provide important insights into students' expectations of AI and ML technologies in accounting and auditing. These insights are particularly significant for guiding the development of educational programs, professional practices, and policies that align with the technological advancements in the field. By exploring the factors influencing students' expectations, this research aims to contribute to the smooth integration of AI and ML tools into the profession, equipping students and future

professionals with the knowledge and skills needed to thrive in a technology-driven landscape.

#### **4. Literature Review**

The utilization of Artificial Intelligence (AI) technologies has had a profound impact on the field of accounting and auditing (Korinek et al., 2021). AI has transformed the way tasks are executed, enabling auditors and accountants to streamline their processes and enhance their efficiency (OECD, 2021; Fedyk et al., 2022). John McCarthy is credited with coining the term "Artificial Intelligence" (Yadav et. al 2017). Artificial intelligence (AI) refers to the field of study focused on creating computers and software capable of intelligent behavior, or the programming of computers to perform tasks more effectively and accurately than humans (Chukwudi et.al, 2018). Another perspective views artificial intelligence as the ability of a programmable device to perform tasks expected of the human brain, such as acquiring and applying knowledge, making judgments, generating original ideas, and understanding relationships. The goal of AI is to create machines that can respond similarly to humans.

Data analysis is one of the key areas where AI has made a significant impact. With the vast amounts of data handled by accountants and auditors, AI algorithms can swiftly and accurately analyze and process this data, eliminating the need for manual data entry and reducing the risk of errors. AI-powered applications can perform complex calculations and identify patterns in the data, enabling accountants and auditors to make decisions based on reliable and precise information (OECD, 2021).

Moreover, AI-powered applications have revolutionized the preparation of financial statements by accountants. Traditionally, accountants spent a considerable amount of time manually reconciling accounts and preparing financial statements (Das, 2021). However, with the introduction of AI-powered applications, these complex tasks are automated, allowing accountants to save valuable time and focus on more strategic activities. AI-powered software can extract financial data from various sources, compile data, and generate financial statements with minimal human intervention (ICAP, 2023). By integrating AI applications into the accounting and auditing profession, accounting firms have experienced numerous advantages, including improved efficiency, greater accuracy, and enhanced decision-making capabilities (Rosi & Mahyuni, 2021).

Additionally, the integration of evolving technologies such as cloud accounting, expert systems, machine learning, and data mining has further enhanced the value that AI brings to the profession. These technologies enable accounting firms to efficiently process and analyze vast volumes of structured and unstructured data, providing valuable insights into the financial and non-financial performance of companies (IMF, 2021). As a result, accounting firms are increasingly considering integrating AI into their audit assignments to enhance their effectiveness. AI also has the potential to enhance various aspects of the accounting industry, including operations and services, logistical activities, data security, sales, marketing, customer service, data analysis, and research and development (Ghanoum & Alaba, 2020; Das, 2021).

Furthermore, the ability of AI applications to handle large volumes of data and generate meaningful insights allows users, particularly auditors, to gain a deeper understanding of financial and non-financial performance (OECD, 2021). This, in turn, enables auditors to provide more comprehensive insights to their clients and other stakeholders. In a study conducted in Jordan, Hashem & Alqatamin (2021) confirmed the impact of AI applications on the accounting and auditing profession in IT companies from the auditors' perspective.

The study emphasized that all AI applications are crucial for the accounting profession as they provide auditors with the necessary tools and processes to accurately and clearly complete the audit process, aiding decision-makers effectively. Additionally, Liburd et al. (2020) asserted that AI applications can effectively guide auditors towards high-risk areas, given that the heavy reliance of accounting and auditing companies on AI applications is based on certain assumptions, the most important of which are the accuracy of these applications and the assurance that artificial intelligence systems will always act within desired constraints. Moreover, deviations from the desired restrictions will be detectable and correctable.

Recent studies have explored accounting students' awareness and knowledge of Artificial Intelligence (AI) and Machine Learning (ML), highlighting the impact of these technologies on accounting education and future professional practices. A study by Mansor et al (2022) surveyed accounting students at UiTM Tapah, revealing that while students are generally aware of AI, their knowledge level is moderate. Despite this, the majority recognize AI's significant benefits across various domains. This suggests a need for educational institutions to enhance AI-related content in accounting curricula to bridge the knowledge gap. Similarly, Emerald Insight (2023) discusses the importance of integrating real-life AI-powered data analysis and financial reporting projects into accounting education. Such integration not only improves students' comprehension of AI applications in accounting but also develops essential soft skills like critical thinking, preparing them for the evolving demands of the profession.

The adoption of Explainable AI (XAI) has become a prominent trend in recent years, addressing concerns regarding the interpretability of machine learning models. As accounting and auditing professionals increasingly rely on ML algorithms, the demand for transparency in AI decision-making processes has grown. XAI technologies ensure that auditors and stakeholders can understand and validate AI-driven conclusions, fostering greater trust in automated systems (Munoko et al., 2020).

Regulatory shifts have also played a pivotal role in influencing the adoption of AI and ML in accounting. The European Union's AI Act, for instance, establishes standards for accountability, transparency, and ethical AI use in professional domains, including financial services (OECD, 2021). These regulations encourage the responsible deployment of AI tools while addressing challenges such as algorithmic bias, data security, and ethical concerns.

In addition to professional applications, recent literature highlights the growing focus on integrating AI and ML into accounting education. Rosi and Mahyuni (2021) underscore the need for educational institutions to incorporate AI and ML training into their curricula. Preparing students to navigate a technology-driven landscape has become essential for ensuring that the next generation of accountants and auditors is equipped to leverage these tools effectively.

Despite these advancements, challenges remain. Ethical concerns, such as bias in AI algorithms and potential misuse of data, continue to be areas of concern (Munoko et al., 2020). However, the opportunities presented by AI and ML, such as real-time fraud detection, process automation, and enhanced accuracy in financial reporting, outweigh these challenges when proper safeguards are in place.

Furthermore, the International Federation of Accountants (IFAC 2023) emphasizes that AI is set to revolutionize both the practice and education of accounting. By automating routine tasks and providing personalized learning experiences, AI necessitates changes in educational accounting curricula, shaping the future of the accounting profession. However, it is crucial to address associated challenges, such as bias, over-reliance on AI tools, and data privacy, to

ensure effective and equitable integration of AI into accounting education. These findings underscore the imperative for accounting education to adapt, ensuring that students are well-equipped with the necessary AI and ML competencies to thrive in a technologically advanced accounting landscape.

## **5. Data Analysis**

In this section the findings from a survey conducted to gauge the perceptions and experiences of accounting students about their field of study. The survey aimed to gather insights into various aspects, including their familiarity with and attitudes towards emerging technologies like Artificial Intelligence (AI) and Machine Learning (ML), ethical considerations, and preparedness for the evolving demands of the accounting profession.

The survey was designed in Google Forms and was distributed electronically via the communication channels provided by the university, such as email accounts and teams in MS Teams. The questionnaire was open and collected responses for almost two months in the period from September to November 2024. On some occasions, the survey was completed while in class, and when the professor (also the author of this study) was present and explained the purpose of the survey to the students. This method was used mainly in the initial phases of the survey completion and helped to test the accuracy and completeness of the questionnaire and clarify any possible doubts. It was estimated that the survey reached about 250 students altogether. A total of 98 accounting students completed the survey, providing valuable data for analysis. The sample comprised students at different stages of their educational journey, potentially offering a diverse perspective on the topics at hand.

### **5.1 Statistical and descriptive analysis**

The total number of responses of 98, while providing a snapshot and being 40% of the targeted group, may not be large enough to generalize the findings across the broader population of accounting students. Additionally, the sampling technique used to recruit participants might not have captured a representative distribution of the target demographic, particularly concerning gender, educational level, and other socio-demographic factors that could influence responses.

Below are the main findings of each survey question, focusing on the most frequent responses:

*Table 1. Summary of Demographics questions*

<b>Demographics</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b><i>Gender</i></b>		
Male	20	20.4%
Female	78	79.59%
<b><i>Age</i></b>		
20-24	94	95.92%
25-30	3	3.06%
Above 40	1	1.02%
<b><i>Educational Level</i></b>		
Graduate	89	90.82%
Undergraduate	9	9.18%

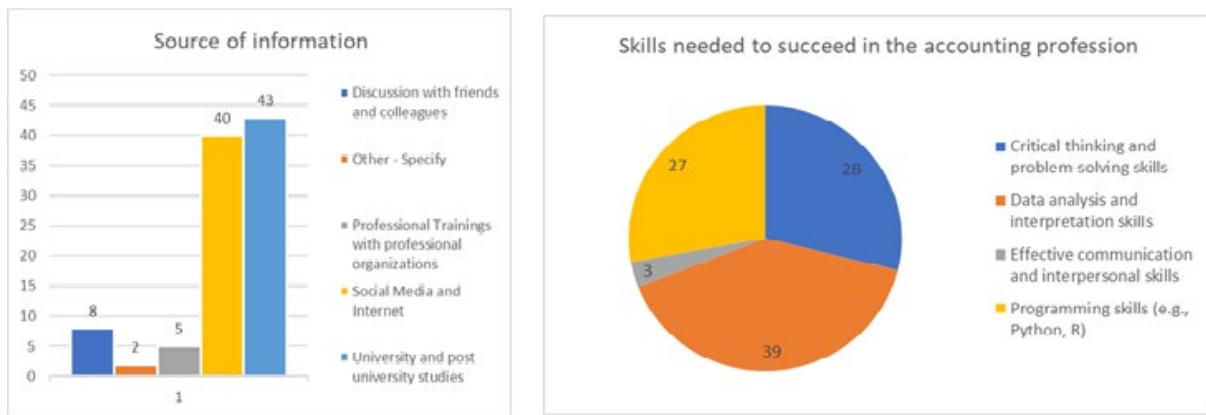
<b><i>Institution for Highest Education</i></b>		
Other Public University in other cities in Albania	1	1.02%
Other Public University in Tirana	2	2.04%
Private University in Albania	2	2.04%
University of Tirana	93	94.90%
Other Public University in other cities in Albania	1	1.02%
<b><i>Current Employment Status</i></b>		
Academic	3	3.06%
Privat Sector	58	59.18%
Public Sector	9	9.18%
Self employed	1	1.02%
Unemployed	26	26.53%
<b><i>Position in Current Job</i></b>		
Intermediate level	23	23.47%
Junior Level	29	29.59%
Management level	4	4.08%
Senior level	13	13.27%
Unemployed	27	27.55%

*Source: Summary of results by the author (2024)*

The majority of respondents are female (78 out of 98), which suggests a gender imbalance in the survey participation. Respondents are predominantly in the 20-24 age range (94 out of 98), indicating the survey largely captured a younger demographic, since the sample were the accounting students. Most participants are graduates (89 out of 98), showing that the respondents are well-educated within their academic journey. A vast majority have completed their highest level of education at the University of Tirana (93 out of 98), since the target group of sample have been University of Tirana students. A majority of respondents are from the private sector (58 out of 98), with unemployment being the second most common status (26 out of 98). Junior level positions are the most reported among those employed (29 out of 98), indicating that many respondents are at the beginning of their career.

The majority of respondents received their information during their university and post-university studies (43), followed closely by social media and the internet (40). This suggests that formal education and online platforms are key information sources.

Figure 1. Source of information and skills needed to succeed in the accounting systems

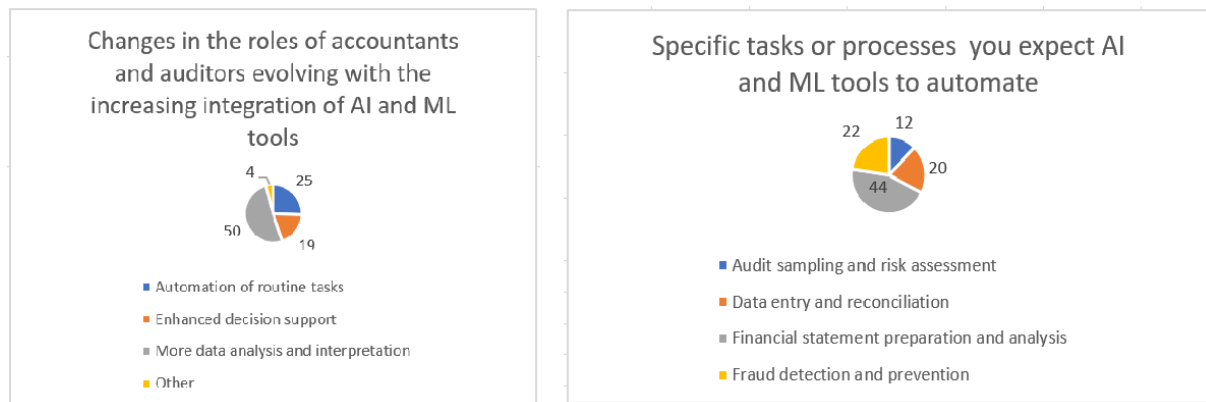


Source: Summary of results of the survey by the authors (2024)

Data analysis and interpretation skills lead the responses (39 out of 98), underscoring the perceived necessity for technical proficiency. Critical thinking and programming skills are also highly regarded, highlighting the interdisciplinary nature of future accounting roles.

The survey indicates that the future roles of accountants and auditors will focus heavily on data analysis and interpretation, facilitated by AI and ML tools, while also automating routine tasks and enhancing decision-making capabilities.

Figure 2. Changes in the roles of accountants and auditors evolving with the increasing integration of AI and ML tools and Specific tasks or processes you expect AI and ML tools to automate

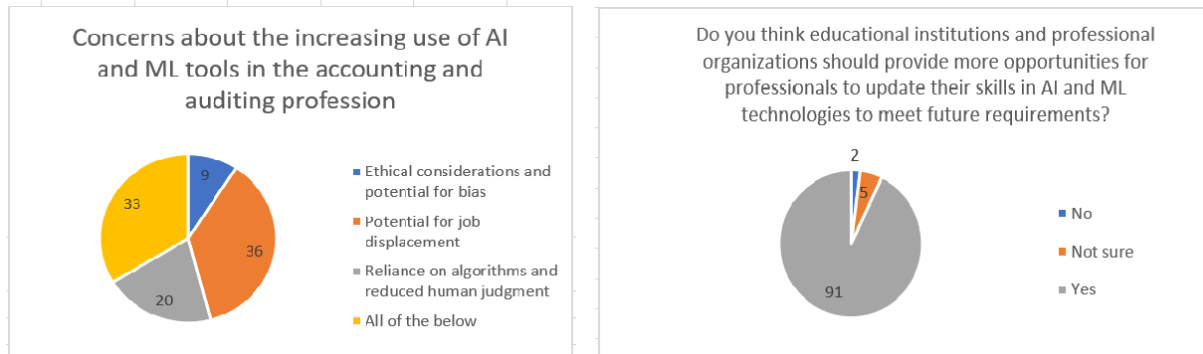


Source: Summary of results of the survey by the authors (2024)

Professionals expect AI and ML tools to primarily automate or streamline financial statement preparation and analysis (44 responses), followed by fraud detection and prevention (22 responses), data entry and reconciliation (20 responses), and audit sampling and risk assessment (12 responses). This reflects a focus on enhancing both the efficiency and accuracy of key accounting functions.

The survey highlights significant concerns among professionals about potential job displacement as the primary issue with the integration of AI and ML in accounting and auditing, alongside worries about over-reliance on algorithms and ethical challenges.

Figure 3. Concerns about the increasing use of AI and ML tools in the accounting and auditing profession and if educational institutions and professional organizations should provide more opportunities for professionals to update their skills in AI and ML technologies to meet future requirements



Source: Summary of results of the survey by the authors (2024)

The overwhelming majority (91 out of 98) advocate for more opportunities, which underscores a recognized need for continuing education and skill development in response to technological changes.

Based on the survey results and the nature of the questions, here are some potential correlations that can derive from the dataset.

From the data received we can examine the relationship between respondents' employment status (e.g., public sector, private sector, unemployed) and their views on AI and ML in accounting.

The cross-tabulation between respondents' employment status and their views on AI and ML in accounting shows the following: Familiarity with AI and ML by Employment Status:

- *Academic*: 3 respondents are somewhat familiar; none are not familiar or very familiar.
- *Private Sector*: 10 respondents are not familiar, 33 are somewhat familiar, and 15 are very familiar.
- *Public Sector*: 6 respondents are somewhat familiar, 3 are very familiar, and none are not familiar.
- *Self-employed*: 1 respondent is somewhat familiar; none are not familiar or very familiar.
- *Unemployed*: 3 respondents are not familiar, 21 are somewhat familiar, and 2 are very familiar.

The relationship between respondents' awareness of existing accounting and auditing standards related to AI and ML and whether they think these standards adequately address the use of AI and ML in the profession. Here's the breakdown:

*No, not aware*: Among those who are not aware of the standards, 3 believe the standards do not address AI and ML adequately, 14 are unsure, and 5 believe they do.

*Yes, aware and expect evolution*: For those aware and expecting evolution, 7 do not find the standards adequate, 19 are unsure, and 34 believe they are adequate.

*Yes, aware but no expectation of evolution*: Among these, 4 believe the standards are not adequate, 7 are unsure, and 5 believe they are adequate.

The following section details the structure and characteristics of the dataset and proceeds to present the results of the analysis conducted in SPSS, offering a professional and methodologically sound foundation for the study's findings.

## 5.2 SPSS analysis

The following section details the structure and characteristics of the dataset and proceeds to present the results of the analysis conducted in SPSS, offering a professional and methodologically sound foundation for the study's findings.

### 5.2.1 Relationship between Currently Courses or Certifications and Employment Status

In the next session, we will focus on the provided variables, using Currently courses or certifications as the dependent variable and Employment Status as the predictor (independent variable). We will explain how these variables are analyzed within a regression model, interpreting their relationship and the insights derived from SPSS output. This will help clarify the roles of the dependent and independent variables in the context of statistical analysis.

Table 2. Model Summary about Relationship between Currently courses or certifications and Employment Status

Variable	Values	Interpretation
<b>R</b>	0.329	This is the correlation coefficient, indicating the strength and direction of the linear relationship between Employment Status and Currently courses or certifications. A value of 0.329 suggests a positive but weak relationship
<b>R<sup>2</sup></b>	0.108	This is the coefficient of determination, which indicates that 10.8% of the variance in Currently courses or certifications is explained by Employment status.
<b>Adjusted R<sup>2</sup></b>	0.099	This adjusts R <sup>2</sup> for the number of predictors in the model. It's slightly lower, which can occur with smaller sample sizes or models with limited predictive power.
<b>Standard Error of the Estimate</b>	0.785	This measures the average distance that the observed values fall from the regression line. A smaller value would indicate a better fit, though in this case, it's moderately large.

Source: Results of SPSS from the survey by the author (2024)

Table 3. Values of SPSS Analyses and Interpretation about Relationship between Currently courses or certifications and Employment Status

Variable	Value	Interpretation
<b>Anova Table</b>		
F-statistic	11.503	Indicates the overall fit of the regression model. The F-statistic shows that the model significantly explains variation in the dependent variable
p-value (Sig)	0.001	This value is less than 0.05, confirming that the regression model is statistically significant. This means that Employment Status significantly predicts the dependent variable, <i>Currently enrolled in courses or certifications</i> .
<b>Coefficients Table:</b>		
Constant B	1.434	The intercept of the regression line. It indicates that when Employment Status is 0 (e.g., possibly unemployed), the predicted value for the dependent variable is 1.434.
Employment status (B)	0.322	The slope or unstandardized coefficient. It suggests that for every one-unit increase in Employment Status (e.g., transitioning from unemployed to employed), the predicted value for the dependent variable increases by 0.322.
Standard Error	0.095	Indicates the average distance that the observed values fall from the regression line. A lower value suggests better precision of the

		coefficient.
T-value	3.392	Evaluates the significance of the Employment Status predictor. The T-value is high, and its associated p-value (0.001) confirms that Employment Status has a statistically significant effect on the dependent variable

Source: Results of SPSS from the survey by the author (2024)

In summary, The regression analysis shows that Employment Status significantly affects *Currently enrolled in courses or certifications*. The positive coefficient (0.322) indicates that being employed is associated with a higher likelihood of being enrolled in courses or certifications. The model is statistically significant and supports the hypothesis that Employment Status impacts the dependent variable.

### 5.2.2 Relationship between Awareness of ethical considerations in AI, privacy, and data and Participation in courses related to AI, ML, and accounting education.

In the next session, we will explore the relationship between the dependent variable: *awareness of ethical considerations in AI, privacy, and data* and the predictor: *participation in courses related to AI, ML, and accounting education*. We will analyze how the predictor influences the dependent variable, interpreting the SPSS output to understand the statistical significance, impact size, and practical implications of the findings. This will provide insights into how education in AI and ML affects awareness of ethical and privacy issues.

Table 4. Model Summary about Relationship between Awareness of ethical considerations in AI, privacy, and data and Participation in courses related to AI, ML, and accounting education.

Variable	Values	Interpretation
<b>R</b>	0.325	This represents the strength and direction of the linear relationship between the independent and dependent variables. A value of 0.325 indicates a weak positive correlation between the variables.
<b>R<sup>2</sup></b>	0.106	This indicates that approximately 10.6% of the variance in the dependent variable can be explained by the independent variable(s) in the model. The remaining 89.4% is due to other factors not included in the model or random error.
<b>Adjusted R<sup>2</sup></b>	0.097	Adjusted <b>R<sup>2</sup></b> adjusts the <b>R<sup>2</sup></b> value for the number of predictors in the model, providing a more accurate measure for models with multiple predictors. Here, the adjusted <b>R<sup>2</sup></b> is slightly lower than <b>R<sup>2</sup></b> , suggesting that the independent variable(s) are only marginally predictive of the dependent variable.
<b>Standard Error of the Estimate</b>	0.458	This measures the average distance that the observed values fall from the regression line. A standard error of 0.458 indicates the typical error in predictions made by the model. The smaller this value, the better the fit of the model.

Source: Results of SPSS from the survey by the author (2024)

Table 5. Values of SPSS Analyses and Interpretation about Relationship between Awareness of ethical considerations in AI, privacy, and data and Participation in courses related to AI, ML, and accounting education.

Variable	Value	Interpretation
<b>Anova Table</b>		
F-statistic	11.371	A value of 11.371 suggests the predictor, <i>participation in courses related to AI, ML, and accounting education</i> , contributes meaningfully to explaining variation in the dependent variable.
p-value (Sig)	0.001	The p-value is less than 0.05, indicating the model is statistically significant. <i>participation in courses related to AI, ML, and accounting education</i> significantly predicts <i>awareness of ethical considerations in AI, privacy, and data</i> , highlighting its importance.
<b>Coefficients Table:</b>		
Constant B	0.721	Individuals who have not participated in AI/ML courses are predicted to have a baseline awareness score of 0.721. This is a starting point for assessing the impact of course participation.
participation in courses related to AI, ML, and accounting education (B)	0.325	For every one-unit increase in <i>participation in courses related to AI, ML, and accounting education</i> (e.g., participation in additional courses), the predicted awareness of ethical considerations ( <i>awareness of ethical considerations in AI, privacy, and data</i> ) increases by 0.325.

Source: Results of SPSS from the survey by the author (2024)

The results indicate a statistically significant positive relationship between AI/ML education and awareness of ethical considerations, including data privacy and bias. The predictor explains 10.6% of the variance, suggesting that education in AI/ML plays a meaningful role in enhancing ethical awareness. However, other factors not included in the model might also contribute to awareness.

## 6. Practical Implications and Case Studies

The findings of this study emphasize the transformative role that Artificial Intelligence (AI) and Machine Learning (ML) tools can play in accounting and auditing practices. Integrating these technologies into academic curricula and professional settings is critical to preparing future professionals for the challenges and opportunities of a technology-driven industry. By incorporating real-world examples and case studies, this section illustrates the tangible benefits of AI and ML and provides actionable recommendations for academia, industry, and policymakers.

One notable example is PwC's AI-enabled auditing platform, which has significantly enhanced its anomaly detection capabilities. By employing machine learning algorithms, the platform can efficiently process large volumes of financial data, identifying patterns and anomalies that may indicate fraud or misstatements. This has resulted in reduced audit completion times and increased accuracy in detecting irregularities, showcasing the potential of AI to revolutionize traditional auditing processes (PwC, 2022).

In the realm of education, institutions such as Stanford University and the University of Toronto have integrated AI and ML training modules into their accounting programs. These programs combine theoretical knowledge with practical applications, enabling students to work with AI-powered tools such as fraud detection systems and compliance monitoring software. Graduates of these programs are better equipped to navigate the complexities of modern accounting and auditing practices (Rosi & Mahyuni, 2021).

A compelling case study is provided by Deloitte, which implemented an AI-driven audit platform designed to predict compliance risks and enhance decision-making accuracy. The platform uses machine learning to analyze historical data, flagging potential issues that auditors may overlook in traditional manual reviews. As a result, Deloitte reduced its audit cycle by approximately 20%, demonstrating the efficiency gains achievable through AI adoption (Fedyk et al., 2022).

In the context of Albania, where many Small and Medium Enterprises (SMEs) face challenges such as resource constraints and limited access to advanced technology, AI tools could play a pivotal role in bridging these gaps. Universities in Albania could collaborate with global technology providers like SAP or IBM to design specialized training programs that expose students to AI applications in accounting. For instance, these partnerships could offer workshops on using AI-powered analytics tools to detect fraud or ensure compliance with international standards such as IFRS and XBRL (OECD, 2021).

Furthermore, global initiatives, such as the OECD AI Principles, emphasize the ethical and transparent use of AI in financial systems. These principles guide the responsible adoption of AI tools, ensuring they align with regulatory standards and promote accountability in professional practices. Integrating these principles into educational programs and professional certifications can help accounting professionals adopt AI with confidence while addressing ethical considerations (OECD, 2021).

To ensure the successful implementation of AI and ML in accounting, the development of tailored certification programs focusing on AI applications in auditing and fraud detection is recommended. These certifications, offered by professional bodies, can help practitioners stay updated with the latest technological advancements and ethical considerations. Similarly, establishing partnerships between academia and the industry would provide students with real-world exposure to AI technologies, further bridging the gap between theoretical knowledge and practical application.

By incorporating these detailed examples, case studies, and actionable recommendations, this study demonstrates how AI and ML tools can transform accounting education and professional practices. These insights not only address the expectations of students and industry stakeholders but also contribute to the development of a robust and technologically advanced accounting profession.

## **7. Recommendations**

In light of the survey findings and the evolving landscape of the accounting and auditing profession, the following recommendations are proposed for educational institutions and professional organizations:

1. **Curriculum Enhancement:** Integrate AI and ML-focused courses and curricula into accounting and auditing programs to equip students with the necessary skills and knowledge to thrive in the future profession.
2. **Hands-on Training and Practical Experience:** Provide opportunities for students to gain hands-on training and practical experience with AI and ML tools through internships, workshops, and research projects. This will enable students to apply theoretical knowledge to real-world scenarios and develop proficiency in using AI and ML tools effectively.
3. **Mentorship Programs and Industry Engagement:** Establish mentorship programs connecting students with experienced professionals in AI and ML, providing guidance

and insights into the practical applications and ethical considerations of these technologies in the accounting and auditing profession.

4. **Networking Opportunities and Professional Development:** Create networking opportunities for students to connect with peers, professionals, and industry experts working in AI- or ML-related fields. This will foster knowledge sharing, career exploration, and professional development.
5. **Ethical Considerations and Responsible Use:** Promote ethical considerations and responsible use of AI and ML tools in the accounting and auditing profession. Emphasize the importance of transparency, human oversight, and accountability in the application of AI and ML tools to ensure the integrity and reliability of accounting and auditing practices.

## **8. Conclusions**

The survey findings revealed a nuanced understanding among students regarding the transformative potential of AI and ML tools in the accounting and auditing profession. Students generally acknowledged the ability of these technologies to automate routine tasks, enhancing efficiency and freeing up professionals to focus on more strategic and value-added activities. Additionally, students recognized the potential of AI and ML tools to enhance data analysis capabilities, enabling deeper insights into financial data and improving the quality of audits and financial reporting.

From the examined relationships between respondents, those in the private sector displayed the broadest range of familiarity with AI and ML, including the highest number of respondents who are very familiar. This suggests greater exposure or necessity for understanding AI and ML technologies in the private sector, potentially driven by competitive pressures and resource availability. A significant number of unemployed individuals were somewhat familiar with AI and ML, which may indicate their proactive efforts to remain relevant in the job market by acquiring knowledge about emerging technologies. Public sector employees, while fewer in number, also exhibited a reasonable degree of familiarity, mostly reporting being at least somewhat familiar, suggesting an evolving recognition of AI's relevance in public services, such as fraud detection and financial management. Conversely, academic and self-employed respondents showed limited familiarity levels, which could reflect either less exposure to AI tools in their roles or limited perceived applicability of such technologies in their specific contexts. This distribution highlights the role of sectoral demands, access to training, and job security in shaping familiarity with AI and ML technologies.

A significant finding is that a higher proportion of respondents who are aware of the standards and expect them to evolve believe that the current standards adequately address AI and ML. In contrast, those who are unaware of the standards are more likely to express uncertainty about their adequacy. This correlation between awareness and a positive perception of standards underscores the importance of disseminating information about AI and ML-related frameworks. Increased awareness could foster a more informed perspective on the adequacy and evolution of these standards, thereby supporting better alignment between industry practices and regulatory requirements.

Despite the perceived benefits of AI and ML tools, students also expressed concerns about the potential for job displacement and the impact on the traditional roles of accounting and auditing professionals. Automation could lead to a reduction in demand for certain routine tasks currently performed by accountants and auditors. Moreover, students raised concerns about overreliance on algorithms, which could undermine human judgment and critical

thinking skills. These concerns reflect a critical need for a balanced integration of AI technologies, ensuring that human expertise remains central to decision-making processes. Addressing these apprehensions requires a dual focus on equipping professionals with AI-related technical skills while fostering competencies that emphasize judgment, ethics, and adaptability.

In terms of preparedness to adapt to the changing landscape of the accounting and auditing profession, students highlighted a pressing need for enhanced skills and knowledge in AI and ML technologies. They recognized the importance of developing programming skills, data analysis and interpretation expertise, and critical thinking and problem-solving abilities as foundational for future success. Additionally, students emphasized the significance of communication and interpersonal skills to effectively collaborate with AI and ML tools and to convey findings and insights to clients and stakeholders. These findings highlight an urgent need for accounting education programs to adopt a multidisciplinary approach, integrating technical, analytical, and soft skill development to prepare graduates for the evolving demands of the profession.

Students also identified significant gaps in opportunities for hands-on learning about AI and ML tools. They expressed a strong desire for more AI and ML-focused courses and curricula within their accounting and auditing programs. Furthermore, students called for practical exposure through internships, workshops, and research projects that provide real-world applications of AI and ML in the accounting and auditing context. Addressing these gaps would not only enhance students' technical competencies but also build their confidence in applying these technologies effectively in professional settings. Collaborative initiatives between academia and industry could play a pivotal role in bridging these gaps by offering experiential learning opportunities and access to state-of-the-art tools.

In conclusion, while students demonstrated a broad understanding of the potential benefits and challenges associated with AI and ML in accounting and auditing, the findings underscore the need for targeted educational reforms and industry collaborations. Incorporating practical training, fostering critical thinking, and addressing ethical considerations will be critical in preparing the next generation of accounting professionals to thrive in a technology-driven landscape. Additionally, tailored interventions addressing sector-specific needs and emphasizing lifelong learning will ensure sustained adaptability and relevance. Bridging these gaps will not only ensure that students are well-prepared to navigate the complexities of their future roles but also contribute to the broader integration of AI and ML technologies within the accounting and auditing profession, ultimately enhancing its impact and reliability.

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