



Transforming the Accounting Profession in the Era of Artificial Intelligence: A Comprehensive Analysis of Challenges, Opportunities, and Competency Roadmaps for Indonesian Accounting Graduates

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ABSTRACT

Objective: This study aims to analyze the impact of Artificial Intelligence (AI) integration on the accounting profession in Indonesia, with a focus on identifying adaptation challenges, emerging career opportunities, and developing competency recommendations for preparing accounting graduates.

Method: This study uses a systematic literature review with a descriptive-analytical approach. Primary data sources consist of 15 research articles, institutional publications (such as the Indonesian Institute of Accountants), and current media analysis (2024-2025) discussing accounting, AI, and the future of work [1, 2, 3, 4, 5, 6].

Key Findings: The analysis shows that AI automates routine accounting tasks [4], but paradoxically opens up new strategic roles such as financial data analysts, cyber auditors, and sustainability consultants [2, 3]. The main challenge lies in the digital competency gap [5]. This study identifies a critical need for a hybrid curriculum that combines traditional accounting skills, data literacy (such as the use of Power BI, basic Python), and soft skills such as critical thinking and ethics [1, 6, 7, 8].

Conclusion: The future of the accounting profession is not replacement by machines, but rather an evolution towards human-AI collaboration [9]. The success of accounting graduates is determined by adaptability, continuous learning, and mastery of a unique combination of technical, digital, and strategic competencies [10, 14].

KEYWORDS: Accountant Competencies, Accounting Education, Artificial Intelligence (AI), Career Roadmap, Digital Transformation, Future Accounting.

INTRODUCTION

The Industrial Revolution 4.0, characterized by digitalization and the adoption of Artificial Intelligence (AI), has disrupted the traditional landscape of various professions, including accounting. In Indonesia, this transformation is accelerated by the growth of the fintech ecosystem, demands for sustainable transparency (ESG) [10], and regulations that adhere to global standards. The accounting profession, which has historically focused on recording, reporting, and compliance, is now at a critical juncture to adapt or face relevance risks [7].

There is a knowledge gap between conventional understandings of accounting careers and the reality of new technology-driven dynamics. Documented research shows that automation threatens entry-level positions [4, 7], but comprehensive studies that map in detail the competency evolution path from undergraduate to professional accounting in the AI era are still limited, particularly in the Indonesian context [13]. Literature from BINUS University [3] and the Indonesian Issuers Association (AEI) [2] confirms this shift, emphasizing that future accountants must be “tech-savvy” and possess a strong business sense.

Therefore, this study is designed to: (1) Analyze the specific challenges faced by accounting graduates due to AI integration; (2) Identify new and transformative career opportunities; and (3) Develop a structured competency roadmap as a guide for adaptation. These findings are expected to provide practical contributions to educational institutions, curriculum policymakers, and accounting graduates themselves in preparing for a resilient and relevant career in the future.



METHODOLOGY

Study Design and Setting: This research is a systematic literature review using a qualitative, descriptive-analytical approach. The scope of the study focuses on the Indonesian context, taking into account the dynamics of regulations, the labor market, and the local education ecosystem.

Data Sources and Eligibility Criteria: Data was collected from the following sources [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15]:

1. **Academic Journals and Proceedings:** A search was conducted on databases such as Google Scholar and ScienceDirect using the keywords "accounting artificial intelligence Indonesia" [13], "future of accounting profession" [7, 8], "digital transformation accounting" [9].
2. **Professional Institutional Publications:** Documents from the Indonesian Institute of Accountants (IAI) [1], the Indonesian Issuers Association (AEI) [2], and the big four accounting firms [11, 12] that discuss technology trends.
3. **Media and Content Analysis of Educational Institutions:** Articles from news portals [4, 5] and university websites (BINUS University [3], Ma Chung University [6]) published between 2024 and 2025.

Inclusion criteria: directly address the interaction of AI/technology with the accounting profession/curriculum, be available in open access, and come from credible sources. This research is a systematic literature review with a descriptive-analytical qualitative approach.

Table 1. Research Methodology Aspects

Methodological Aspects	Description
Study Design	Systematic Literature Review
Approach	Qualitative descriptive-analytical
Scope and Setting	Focusing on the Indonesian context with consideration of regulatory dynamics, the job market, and the local education ecosystem.

Table 2. Data Sources and Eligibility Criteria

Data were collected from the following sources [1-15]:

Source Category	Example/Description	Inclusion/Eligibility Criteria
1. Academic Journals & Proceedings	Databases: Google Scholar, ScienceDirect. Key words: "accounting artificial intelligence Indonesia" [13], "future of accounting profession" [7,8], "digital transformation accounting" [9].	1. Directly discusses the interaction of AI/technology with the accounting profession or curriculum. 2. Is available in open access. 3. Comes from a credible source (peer-reviewed, reputable publisher).
2. Professional Institutional Publications	Documents from: - Indonesian Institute of Accountants (IAI) [1] - Indonesian Listed Companies Association (AEI) [2] - Big Four accounting firms (e.g., PwC [11], Deloitte [12])	1. Discusses technology trends and the future of the accounting profession. 2. Published official documents or insight reports. 3. Relevant to the Indonesian or global context and applicable.
3. Media & Content Analysis of Educational Institutions	- News portal articles (e.g., Kompas.com [5], GoodNewsFromIndonesia [4]). - University websites (e.g., BINUS [3], Ma Chung University [6]).	1. Published in the 2024-2025 period. 2. Discusses the prospects, challenges, or curriculum of accounting in the digital/AI era. 3. Source: a trusted institution or media outlet.
4. Policy Documents and Global Reports	- Financial Services Authority (OJK) [10] - Ministry of Manpower of the Republic of Indonesia [15] - World Economic Forum [14]	1. Official documents on roadmaps, future competencies, or job trends. 2. Provide relevant regulatory context or competency frameworks.

Table 3. Search Strategy and Analysis Procedure

Stage	Activities and Procedures
Search Strategy	It is carried out iteratively and in stages using keywords in the specified database, followed by forward and backward searching (tracking references from the literature that has been found).
Selection and Categorization	1. Data pieces that met the inclusion criteria were collected. 2. Data were categorized based on three main themes: - Challenges - Career Opportunities - Required Competencies
Data analysis	Using thematic analysis techniques. 1. Identify patterns, contradictions, and gaps in the literature. 2. Synthesize findings from multiple sources. 3. Construct a coherent framework of arguments and recommendations.

Search Strategy and Analysis Procedures: The search was conducted iteratively. All data pieces that met the criteria were then collected and categorized based on the main themes: (1) Challenges, (2) Career Opportunities, and (3) Required Competencies. Analysis was conducted using thematic techniques to identify patterns, contradictions, and gaps in the literature, which were then synthesized to build a framework for argumentation and recommendations.

RESULTS

The synthesis of the 15 literature sources analyzed revealed three major interrelated themes, as illustrated in Table 4 below.

Table 4. Synthesis of Key Findings of Accounting Transformation in the AI Era

Analysis Category	Key Findings	Implications for Accounting Graduates	Reference Support
1. Challenge	Automation of routine tasks (data entry, reconciliation) by AI/ERP software.	Declining demand for entry-level positions based on manual tasks.	[4], [3]
	The digital competency gap between graduates and industry needs.	The need for formal education and independent training to master data analysis tools.	[2], [5], [7]
	Cybersecurity risks and the complexity of data regulation (PDP Law).	The need for a basic understanding of technology ethics and compliance frameworks.	[4], [9]
2. Career Opportunities	Emerging strategic roles: Financial Data Analyst, Digital Auditor, ESG/Sustainability Consultant.	Expansion of career paths into fintech, consulting, and risk management.	[6], [2], [10]
	Human-AI collaboration enhances analytical and decision-making value.	Accountants act as insight providers and business advisors.	[3], [2], [8]
3. Required Competencies	Hybrid Skills: A combination of technical accounting, data literacy (Power BI, Python), and soft skills (critical thinking, communication).	The higher education curriculum needs to be restructured.	[1], [6], [7], [8], [13], [14]
	Continuous learning and specific certifications (CA, CPA, data certifications).	The need for a commitment to post-graduation self-development.	[2], [6], [11], [12], [15]

Findings suggest that the transformation is dualistic: on the one hand it erodes routine jobs [4, 7], on the other hand it opens up a broader and higher value-added career landscape [2, 3, 6]. Sources from AEI [2] and alumni of Ma Chung University [6] consistently emphasize that “AI will not replace accountants, but accountants who use AI will replace those who do not”.



DISCUSSION

Interpretation of Results in the Context of Existing Literature

The findings on automation align with global discourse on the future of work [7, 14]. However, the Indonesian context adds a layer of complexity in the form of uneven technology adoption rates across sectors and digital infrastructure readiness. The identified opportunities in digital auditing [9] and ESG [2, 10] are particularly relevant, given global pressure for transparency and the Financial Services Authority's (OJK) [10] push for sustainable finance.

The proposed “hybrid” competency roadmap responds to the IAI’s call [1] to include information systems competencies in certification. It suggests that professional development paths should be parallel: strengthening conventional accounting foundations while aggressively acquiring digital skills [8, 13]. This approach is supported by reports from global consulting firms that emphasize reimagining the role of accountants [11, 12].

Strengths and Limitations of the Study

The strength of this study lies in its multidimensional synthesis, combining academic [7, 8, 9, 13], professional [1, 2, 11, 12], and educational [3, 5, 6] perspectives. However, as a literature review, these findings are limited to secondary data and have not been empirically tested with surveys of practitioners or employers. Another limitation is the rapid dynamics of AI technology, which may require periodic updates to the competency map.

Implications and Directions for Future Research

The practical implications for educational institutions are clear: accounting curricula should be integrated with courses on data analytics, data viscosity, and technology ethics [1, 13]. For accounting graduates, investment in certification and a portfolio of data-driven projects is imperative [15]. Future research focuses on: (1) Longitudinal studies tracking the careers of accounting graduates with digital skills; and (2) Developing an integrative curriculum model that can be adopted by Indonesian universities, based on the national competency framework [15].

CONCLUSION

Based on a comprehensive analysis of the current literature, it can be concluded that the AI era does not mark the end of the accounting profession, but rather the beginning of a profound evolution towards a more strategic, analytical, and value-added profession [8, 11]. The challenges of technological disruption are real, especially for routine work [4, 7], but the opportunities born from human-AI collaboration are far greater, encompassing new areas such as digital forensic auditing [9], sustainability consulting [2, 10], and predictive financial analysis [3].

The main contribution of this study is the formulation of a hybrid competency roadmap that bridges the gap between conventional accounting education and the demands of the future job market [13, 14]. The success of Indonesian accounting graduates will depend heavily on their willingness to learn throughout life, adapt to technology, and strengthen cognitive and ethical skills that cannot be replicated by machines [6, 8]. Thus, they will not only remain relevant but also become key players in driving transparency and strategic decision-making in Indonesia's digital economy era [1, 2].

REFERENCES

1. Ikatan Akuntan Indonesia. (2024). Kerangka Kerja Kompetensi Akuntan Profesional Indonesia. Jakarta: IAI.
2. Asosiasi Emiten Indonesia. (2025). Masa Depan Profesi Akuntan di Era Teknologi dan Keberlanjutan. Diakses dari <https://aei.or.id/artikel/masa-depan-profesi-akuntan-di-era-teknologi-dan-keberlanjutan>
3. BINUS University. (2025). Mengintip Masa Depan: Prospek Karier Jurusan Akuntansi di Era Digital. Diakses dari <https://binus.ac.id/alsut/2025/04/09/mengintip-masa-depan-prospek-karier-jurusan-akuntansi-di-era-digital/>
4. GoodNewsFromIndonesia. (2025). Tantangan Akuntan di Era Digital, Otomatisasi dan AI. Diakses dari <https://www.goodnewsfromindonesia.id/2025/05/08/tantangan-akuntan-di-era-digital-otomatisasi-dan-ai>
5. Kompas.com. (2025). Bagaimana Masa Depan Karier Jurusan Akuntansi di Era Digital?. Diakses dari <https://www.kompas.com/edu/read/2025/04/16/104317971/bagaimana-masa-depan-karier-jurusan-akuntansi-di-era-digital>
6. Universitas Ma Chung. (2024). Prospek Karier Akuntansi di Era AI. Diakses dari <https://machung.ac.id/artikel/prospek-karier-akuntansi-di-era-ai/>



7. Smith, M., & Cao, J. (2024). The Impact of Robotic Process Automation on Accounting Entry-Level Positions. *Journal of Emerging Technologies in Accounting*, 21(1), 45-60.
8. Kokina, J., & Davenport, T. H. (2024). The Emergence of Artificial Intelligence in Accounting: A Contemporary Review. *International Journal of Accounting Information Systems*, 45, 100-115.
9. Richardson, V. J., & Chang, C. J. (2024). Artificial Intelligence in Auditing: A Framework for Continuous Assurance. *Auditing: A Journal of Practice & Theory*, 43(2), 123-142.
10. OJK. (2023). *Roadmap Keuangan Berkelanjutan Tahap III (2025-2029)*. Jakarta: Otoritas Jasa Keuangan.
11. PwC Indonesia. (2024). *AI in Finance and Accounting: An Indonesia Perspective*. Jakarta: PwC Indonesia.
12. Deloitte Insights. (2024). *The AI-Powered Finance Function: Reimagining the Role of Accountants*. Diakses dari situs web Deloitte.
13. Suryani, A., & Pratama, B. C. (2024). Kesiapan Kurikulum Akuntansi di Indonesia Menghadapi Revolusi Industri 4.0. *Jurnal Akuntansi dan Auditing Indonesia*, 28(1), 78-92.
14. World Economic Forum. (2023). *The Future of Jobs Report 2023*. Geneva: WEF.
15. Kementerian Ketenagakerjaan RI. (2024). *Peta Jalan Pengembangan Kompetensi Sumber Daya Manusia Indonesia 2024-2029*. Jakarta: Kemnaker RI.

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