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Digital transformation and its implications for professional accountants' skills needs

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ABSTRACT
Digital transformation brings significant changes to clerical accounting tasks. This research aims to (1) investigate digital technology that has a broad impact on the field of accounting; and (2) identify the skills needed by accounting graduates to enter the workforce in the digital era. The research was conducted with a qualitative approach using a systematic literature review method. In the initial phase, this study identified 40 manuscripts. Based on the selection criteria, this study examined 26 manuscripts about digital transformation related to the skills needs of the accounting profession. Manuscripts come from 21 journals indexed by Scopus Q1 – Q3 and published in the period 2019 – 2024. Digital technologies such as big data and data analytics, artificial intelligence, robotic process automation, blockchain, and cloud-based accounting are having a broad impact on accounting processes and practices. The implications of this impact are the changing role of the accounting profession. A number of new skills, both technical and non-technical, are needed to support the changing role of the accounting profession. Therefore, educational institutions need to prepare accounting graduates with a range of skills, supported by digital skills. Further studies are needed to identify patterns of changes in the role of the accounting profession and its skills requirements.

Keywords: Accountant Professional, Digital Transformation, Digital Technology, Technical Skills, Non-Technical Skills

1. Introduction

Digital technology is a key pillar of the Industrial Revolution 4.0. Various digital technologies have developed, such as automation supported by robotic technology, blockchain, artificial intelligence (AI), cloud technology and various derivative applications [1]. These technologies work together to increase flexibility, productivity, and customization of business and accounting processes. The use of digital technology not only has an impact on clerical accounting tasks, but has a further impact on workforce preparation. Accounting job is one of the professions affected by the advancement of the industrial revolution [2, 3, 4]. Digital transformation is an issue of interest to various groups because it brings significant changes to the accounting field and changes the way accounting professionals work.

Currently, many companies have utilized various digital technologies, not only in the accounting sector, but also throughout the company's operational systems. Digital technology is applied in various fields such as digitizing reporting, daily business activities, project management, up to supply chain operations [5]. Accounting digitalization is also related to the quality of financial reporting, the usefulness of accounting information, and the effectiveness of strategic decisions [6]. The various applications of digital technology cause the work carried out to be more effective and efficient, so that productivity at work also increases.

The use of digital technology has an impact on the role of accountants. Therefore, accounting graduates need to be equipped with various digital technology skills. Information and communication technology (ICT) competency is one of the basic technical skills needed by accounting graduates [7]. To prepare students' skills, accounting education programs are required to include ICT software in accounting courses [5]. Students taking accounting education need to have knowledge and skills about big data & data analytics and cloud accounting so that they are ready to face advances in digitalization [8]. In short, digital technology must be present in the learning process of accounting students.

Studies on digital transformation and its implications for the accounting profession have been reported in previous studies. The focus of many reported studies is related to auditing [3, 9, 10, 11], financial reporting [6, 12], as well as the skills needed in the digital era [13, 14]. Studies on the impact of digital transformation on the preparation of accounting human resources are still limited. The author emphasizes the importance of studies to fill theoretical and practical gaps regarding digital transformation and its implications for preparing the skills of accounting education graduates.

This study aims to demystify digital transformation and identify required skills through a systematic literature review. The choice to conduct research using this method was driven by the opportunity to fill the knowledge gap regarding the relationship between digital transformation and the skills needed for accounting graduates to enter the world of work in the digital era. This research method has been widely adopted by previous researchers [15, 16, 17, 18], because it is able to answer questions that cannot be answered through individual studies.

This research objectives to (1) investigate digital technology that has a broad impact on the field of accounting; and (2) identify the skills needed by accounting graduates to enter the workforce in the digital era. To achieve the study objectives, two research questions were formulated to direct the discussion in this article. The research questions are as follows:

a. What digital technologies have a broad impact on the field of accounting work?
b. What skills do accounting graduates need to enter the world of work in the digital era?

This research contributes to building a theoretical framework regarding the impact of digital transformation on accounting professionals and its implications for vocational higher education in preparing graduates to enter the workforce. Furthermore, it contributes to efforts to improve the understanding of vocational accounting education policymakers regarding the relationship between digital transformation and key aspects of accounting that are experiencing disruption. This is crucial for developing strategic and systematic steps to prepare digitally literate accounting human resources, while simultaneously restructuring the accounting education system and curriculum to integrate digital technology skills more broadly.

2. Method

The research was conducted with a qualitative approach using a systematic literature review (SLR) method. SLR is a systematic and structured research method for compiling, evaluating, and synthesizing relevant literature in a particular knowledge domain or research topic [19, 20, 21]. SLR provides a comprehensive and structured overview of existing knowledge in a particular research area so that it can be used as a basis for decision making and further research [22, 23, 24], can answer questions that cannot be answered through individual studies, can identify problems in primary research that must be corrected in further research, and can generate or evaluate theories about how or why phenomena occur [25].

The implementation of SLR in this study adapted the 2020 Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines [25] and several SLR methods in other studies [26, 27, 28]. The application of SLR in this research is divided into three main stages including:

- Phase I – Planning the Review Process
  This stage includes determining research questions and objectives, formulating a research outline and developing search criteria. The main source of literature in this research is publications in scientific journals, which are published periodically, are not discontinued, and are indexed in Scopus Q1 – Q4. Articles are written in English and published in the period 2019 – 2024.
- Stage II – Conducting the Review Process
  Literature search using the Google search engine. Search and selection of journal articles using the keywords "digital transformation in accounting and auditing", "digital skills for accountants" and similar terminology. Searches are limited to the first 20 search results for each keyword. Data extraction results are tabulated in a spreadsheet. Information collected includes: author's name, year of publication, article title, journal name, volume, number, DOI, journal ranking, number of citations. The final step after obtaining relevant literature is to synthesize various findings from the selected literature. The main goal of data synthesis is to analyze and evaluate various research results from various literature, and choose the most appropriate method to integrate explanations and interpretations of these various findings.
- Stage III – Reporting and Dissemination of Review Results
  This stage includes the entire series of article writing, including reporting research results descriptively and conducting discussions. In order to develop the discussion and answer research questions, the author conducted a thematic analysis. This analysis is used to determine the existence of certain themes or concepts in qualitative data.

This research examines 40 search result publications on the Google search engine, using two different keywords. For each keyword, the first 20 publications were taken. The search was carried out on April 1 2024 – April 10 2024. A description of the publication search results is shown in Table 1.

Table 1. Description of publication

Publication Description		Frequency	Percentage
Type of Publication	Articles in Scientific Journal	37	92,5%
	Articles in Non-Scientific Journal	3	7,5%
	Total	40	100%
Year of Issued	2019	12	32.4%
	2020	7	18,9%
	2021	10	27,0%
	2022	5	13,5%
	2023	2	5,4%
	2024	1	2,7%

	Total	37	100%
Journal Rankings	Scopus Q1	15	40,5%
	Scopus Q2	16	43,2%
	Scopus Q3	1	2,7%
	Scopus Q4	0	0,0%
	Non-Scopus	5	13,5%
	Total	37	100%

Source: Processed research data

Based on the predetermined search criteria, there were 8 (20%) publications that did not match. Three book publications and five scientific publications are not indexed by Scopus. Thus, this research reviewed the literature of 32 (80%) journal articles, with an average of more than 125 citations.

Table 2. Name of author, year of publication, and title of scientific article aligned with research questions.

Authors and Year of Issued	Article Title
[8]	Integrating technology and data analytic skills into the accounting curriculum: Accounting department leaders' experiences and insights
[13]	Digital technology and changing roles: a management accountant's dream or nightmare?
[16]	Blockchain and its implications for accounting and auditing
[2]	Future-proofing accounting professionals: Ensuring graduate employability and future readiness
[29]	The effects of personality traits on digital transformation: Evidence from German tax consulting
[30]	An investigation into the development of non-technical skills by undergraduate accounting programmes
[1]	The Future of Accounting: How Will Digital Transformation Impact the Sector?
[31]	Balancing skills in the digital transformation era: The future of jobs and the role of higher education
[32]	Accountant as Digital Innovator: Roles and Competencies in the Age of Automation
[6]	Digital Accounting, Financial Reporting Quality and Digital Transformation: Evidence from Thai Listed Firms
[33]	The Impacts of Emerging Technologies on Accountants' Role and Skills: Connecting to Open Innovation—A Systematic Literature Review
[34]	Determinants of 21st-century digital skills: A large-scale survey among working professionals
[35]	Accountants' postures under compulsory digital transformation imposed by government oversight authorities
[18]	The digital transformation of corporate reporting – a systematic literature review and avenues for future research
[3]	The digital transformation of external audit and its impact on corporate governance
[36]	The disruptive and transformative potential of new technologies for accounting, accountants and accountability: A review of current literature and call for further research
[37]	The role of internet-related technologies in shaping the work of accountants: New directions for accounting research
[38]	The role of business analytics in the controllers and management accountants' competence profiles: An exploratory study on individual-level data

[9]	Digital transformation and the public sector auditing: The SAI's perspective
[10]	Assessing the impacts of digital transformation on internal auditing: A bibliometric analysis
[39]	Investigating Accountants' Resistance to Move beyond Excel and Adopt New Data Analytics Technology
[11]	Impacts of digitization on auditing: A Delphi study for Germany
[14]	Exploring the impact of 4IR on skills and personal qualities for future accountants: a proposed conceptual framework for university accounting education
[40]	Emerging digital technologies and auditing firms: Opportunities and challenges
[4]	Digital transformation and accountants as advisors
[41]	A Study on the Transformation of Accounting Based on New Technologies: Evidence from Korea

Source: Processed research data

The next step, in order to develop the discussion and answer research questions, the author conducted manual content analysis. Content analysis is used to determine the presence of certain words, themes, or concepts in qualitative data.

3. Results and Discussion

This research aims to (1) investigate digital technology that has a broad impact on the field of accounting; and (2) identify the skills needed by accounting graduates to enter the workforce in the digital era.

Digital Technology in the Accounting Field

The first research question concerns what digital technologies have a broad impact on the field of accounting. To answer this research question, researchers used a digital technology cluster which includes cloud computing & technology, automation & robotics, blockchain, artificial intelligence, big data & data analytics, internet of think, and accounting software and other technology. A resume of digital technology searches discussed in selected journal articles is shown in Figure 1.

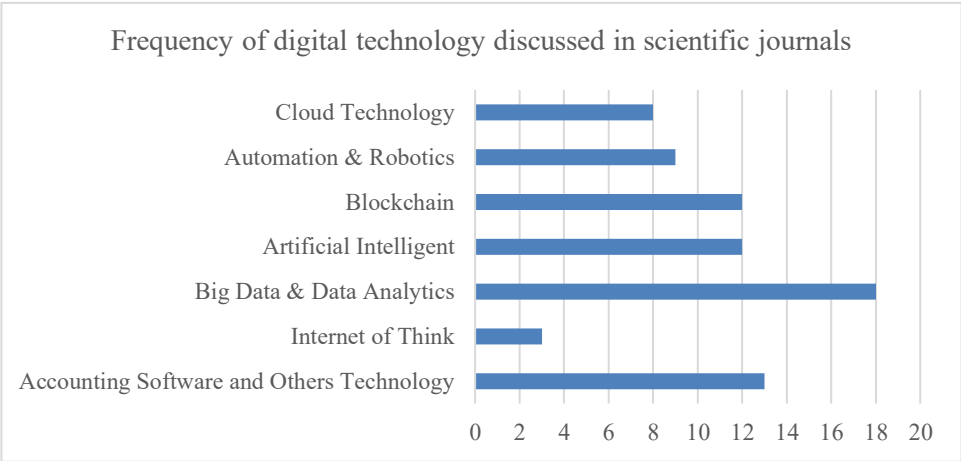

Figure 1. Resume digital technology in accounting field

Big data & data analytics, accounting software, blockchain, automation & robotics, and cloud technology are types of digital technology that are widely discussed in journal articles.

This indicates that this technology has a broad impact on the accounting field. Digital transformation has become an interesting issue for various groups because it brings significant changes to the accounting field. Digital transformation in the accounting field refers to the integration of digital technology into various aspects of accounting processes and practices to improve efficiency, accuracy and decision making [1]. Research findings show that areas of accounting that are significantly impacted by digital transformation include: digitalization of accounting processes and practices, automation of clerical tasks, audit processes, financial reporting, and decision making.

The development of accounting software and cloud technology has given rise to cloud accounting technology. Some software is cloud-based, such as ERP, SAP Accounting Software, Xero Accounting System, Zahir Accounting, and Quickbooks [42]. This technology has become the main tool in digitizing accounting processes and practices as well as automating routine tasks [1, 41]. The emergence of cloud-based accounting software is changing the role of the accounting profession from carrying out clerical tasks to strategic tasks. In this way, there will be plenty of time for the accounting profession to contribute to the company's progress. In the future, the role of accountants will shift as advisors in companies [4]. Accountants as advisors are a valuable strategic resource because of their unique ability to combine generic human resources with digital human resources and social capital resources.

The use of blockchain technology in accounting can offer better audit solutions, automated control and data reliability. Automation in recording and processing transactions can reduce costs and human errors. In addition, it can avoid manipulation and fraud and enable instant information sharing and improve information integrity [16, 41]. It is believed that digitalization of the audit process can increase the role of audit in governance mechanisms. The application of new technologies such as robotic process automation (RPA) and artificial intelligence (AI) has a positive impact on auditors because they focus more on value-added activities [40]. Digitalization and automation are beneficial for auditors in the audit planning process, analytical review procedures, materiality assessment, internal control evaluation, risk assessment, and business continuity decision making [17]. Other researchers also state that digitalization will give rise to new auditor profiles which will enable the creation of a culture of innovation in the audit process [3]. In this ever-evolving environment, auditors need to complement their professional knowledge and audit practices with information technology and data analytics skills, as well as develop ways of critical thinking and analyzing information.

The impact of digital technology on corporate reporting processes is also examined from various perspectives, including for corporate information management, sustainable reporting practices, and accountability and transparency [18]. Apart from that, digital transformation in the small and medium enterprise sector is also studied by other researchers [1]. In the government sector, local government accountants are usually forced to adopt digital innovations to meet the requirements of top-down public financial management reforms [35]. In this context, the success of digital transformation depends on adopting digital processes, having a digital mindset, developing a digital culture, and mastering digital knowledge and skills [12]. These various impacts need attention to ensure digital transformation can run well.

Important skills for accounting graduates in the digital era

The second research question is about the skills needed by accounting graduates to enter the digital age world of work. To answer this research question, researchers used a skills cluster which includes accounting competencies, digital skills, generic skills, personal attributes, and other types of skills. A summary of the types of skills and competencies discussed in the selected journal articles is shown in Figure 2.

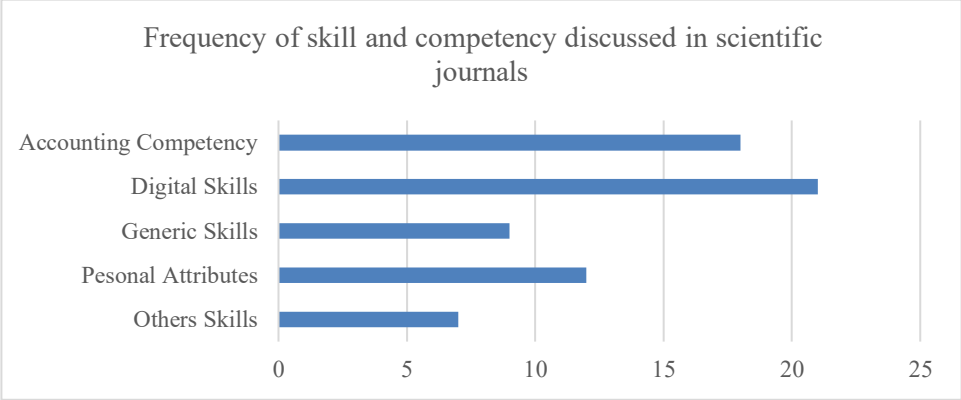

Figure 2. Resume of skills and competencies

In line with the title of this study, accounting technical competencies and digital skills are the main topics of discussion in journal articles. Accounting technical competencies and skills include: general accounting, auditing (internal and external), financial accounting, management accounting, government accounting, fraud detection, taxation, business management and risk management. Digital transformation has an impact on business models and strategies. Conventional business models and strategies have been abandoned. Referring to research [14], there are two business skills for future accountants, namely: (1) consulting and business advisory skills; and (2) strategic thinking. Changes in business models make the accounting profession a business partner and internal consultant [13, 4]. Knowledge and technical accounting skills such as general accounting, auditing, financial accounting, management accounting, government accounting, fraud detection, taxation, business management and risk management are the main capital to be able to play the role of a business consultant.

Digital skills include various types of skills to support the use of digital technology such as cloud computing & technology, automation & robotics, blockchain, artificial intelligence, big data & data analytics, and accounting software. The main types of digital skills discussed include IT basic knowledge, digital business skills, big data and data analytics, data visualization, database and programming skills, and Microsoft Office skills. Referring to research [14], digital skills are divided into: (1) basic digital skills; (2) advanced digital skills; and (3) data skills. Basic digital skills relate to core technologies that have been widely adopted and used by the accounting profession. Included in this category are cloud-based accounting technology, ERP, spreadsheets, Business Intelligence applications, and digitalization of tax reporting activities [17, 40]. The currently developing digitalization phenomenon requires the accounting profession to understand cloud-based applications and be able to carry out real-time online reporting [14]. Advanced digital skills relate to the development of artificial intelligence (AI), blockchain, and advanced BI applications in various accounting sectors [16, 41]. Additionally, programming such as Python, R, and SQL are identified as specialized skills but can be considered part of the advanced digital skills category [14].

Digital transformation in business implies the expectation of using large amounts of financial and non-financial data in decision making. Thus, accountants are expected to be able to handle, organize and audit various data. This ability is related to data skills [14]. These types of skills are considered key skills for success in the workplace. Skills such as the ability to analyze using business intelligence, data analysis, and exploration techniques, as well as synthesizing and interpreting multiple sources are some of the key skills required by employers [1]. Data management and data analysis are the two data skills that appear most frequently in publications.

In addition, generic skills and personal attributes are also topics of discussion in journal articles. Generic skills, also known as transferable skills, are abilities and competencies that are

valuable across various jobs and industries. These skills are not specific to a particular career path but are useful in almost any work environment. Generic skills that are widely discussed include: analytical and thinking skills, problem solving skills, creativity and innovation skills, collaboration and relationships, communication skills, self-management and learning skills, organizational and leadership skills. These generic skills are highly valued by employers because they enhance an individual's ability to perform effectively in various roles and contribute to organizational success. Developing these skills can improve employability and career advancement opportunities. Future accountants will play a role in innovation, creativity, improvisation and other strategic thinking supported by data analytics capabilities so that they can provide added value to organizations [32, 33]. The shift in the role of accountants to become more actively involved in the decision-making process requires them to have a broader understanding of the business environment.

Generic skills are increasingly recognized as important in the dynamic world of work, complementing the technical skills possessed by the accounting profession [2]. Historically, it was technical accounting skills that were required for career work in accounting. However, in today's rapidly changing environment, interpersonal skills are needed more than ever as the accounting profession transitions from technical activities [43]. Employers place more emphasis on generic skills of graduates such as interpersonal and communication skills, including the ability to adjust and adapt to the company's organizational culture [42]. The increasing importance of generic skills has also been identified by research conducted by several international accounting professional bodies [44, 45, 46]. Communication, teamwork, time management and problem solving skills are identified by employers as key prerequisites for recruiting accounting graduates [2]. Along with the importance of technical skills, there is an increasing demand for generic skills that industry expects accounting graduates to have.

Personal attributes, often referred to as personal qualities or characteristics are the traits that define an individual's personality and behavior. These attributes can significantly influence how a person interacts with others, approaches tasks, and navigates various aspects of life. Personal attributes that are widely discussed include: honesty and integrity, openness and adaptability, ethics and social responsibility, and personality traits. These attributes can be innate or developed over time through experience and conscious effort. They play a crucial role in personal and professional success, shaping how individuals are perceived by others and how they navigate their environment.

Ethical issues for the accounting profession have become a major concern amidst rapid technological advances in the era of industrial revolution 4.0. The use of artificial intelligence technology to automate accounting tasks and assist decision making through predictive analysis raises concerns about the implications of data misuse and its impact on internal and external stakeholders [47]. It is important for accountants to have determination in carrying out their professional duties. Apart from that, the emergence of a number of accounting scandals is a reason for the importance of professional ethics [22]. It is not surprising that the application of new technology, such as advanced analytics, facilitated by big data, raises a number of ethical implications for the accounting profession.

The International Federation of Accountants has responded to the increasing importance of ethics by continuing to update and strengthen the code of ethics and professional behavior for its members. In line with this, a framework for accountant ethical skills is proposed which includes: (1) technical ethical skills; and (2) interpersonal skills [45]. Apart from having technical ethical skills, the accounting profession also needs to have a number of interpersonal ethical skills. This type of skill includes the ability to act critically, for example in terms of the quality of data used and produced by digital technology, as well as the ability to act to safeguard company data [44, 46]. Accounting professionals need to develop the technical skills to understand how complex automation models work in order to be able to evaluate the potential ethical implications of the assumptions used in the automation process. There are a number of other capabilities that are also discussed, such as technological innovation, knowledge of

international standards and industry-specific regulations, global citizenship, and customer focus. These skills are needed to broaden the horizons of the accounting profession.

4. Conclusion, Implication and Limitation

Digital technology is applied in various aspects of accounting processes and practices, such as digitizing company reporting, company information management, decision-making processes, and audit processes. Big data & data analytics, artificial intelligence, robotic process automation, blockchain, and cloud accounting are types of digital technology that have a broad impact in the accounting field. Digital transformation changes the role of accountants from carrying out clerical tasks to strategic tasks. Digital transformation has brought about changes in accounting tasks which have implications for the types of skills required of an accountant. A number of new skills, both technical and non-technical, are needed to support the changing role of the accounting profession. This shift in role needs to be anticipated by educational institutions by preparing a number of skills, both technical and non-technical, supported by digital skills. Generic skills and personal attributes have become an interesting issue amidst the rapid advances in digital technology.

The practical implications of this study are on the scientific debate about digital transformation and its implications for the preparation of professional accountant skills. The main issues of the impact of digital transformation on accounting processes and practices, as well as audit processes make us aware of the need to change. Digital transformation cannot be considered a voluntary choice. These changes require universities to change and modify their curricula and educational programs along with automation and digitalization.

The limitations of this research relate to the scope of the literature analyzed. Even though digital transformation is global, there is still little scientific research and academic studies regarding the application of digitalization in accounting and its impact on the accounting profession, especially in developing countries like Indonesia. This study adopts more research conducted by foreign researchers.

This study recommends that further research be carried out through surveys and in-depth interviews to gain knowledge about the changing role of accountants in the digitalization and automation environment. In addition, the use of digital technology such as artificial intelligence, blockchain, big data and cloud accounting needs to be further studied for its implications on accounting processes and practices from the perspective of companies of different sizes (micro, small, medium and large). Apart from that, it is also necessary to study the acceptance and use of digital technology, especially in micro, small and medium scale businesses.

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References

[1] M. J. A. Gonçalves, A. C. F. da Silva and C. G. Ferreira, "The Future of Accounting: How Will Digital Transformation Impact the Sector?," *Informatics,* vol. 9, no. 1, pp. 19-35, 2022.

[2] M. Bowles, S. Ghosh and L. Thomas, "Future-proofing accounting professionals: Ensuring graduate employability and future readiness," *Journal of Teaching and Learning for Graduate Employability,* vol. 11, no. 1, pp. 1-21, 2020.

[3] R. Manita, N. Elommal, P. Baudier and L. Hikkerova, "The digital transformation of external audit and its impact on corporate governance," *Technological Forecasting and Social Change,* vol. 150, no. January, p. Article No. 119751, 2020.

[4] O. Yigitbasioglu, P. Green and M.-Y. D. Cheung, "Digital transformation and accountants as advisors," *Accounting, Auditing & Accountability Journal,* vol. 36, no. 1, pp. 209-237, 2023.

[5] B. Z. Berikol and M. Killi, "The Effects of Digital Transformation Process on Accounting," in *Accounting, Finance, Sustainability, Governance & Fraud: Theory and Application*, Singapore, Springer Nature Singapore Pte Ltd, 2021, pp. 219-231.

[6] P. Kornchai and N. K. Khajit, "Digital Accounting, Financial Reporting Quality and Digital Transformation: Evidence from Thai Listed Firms," *Journal of Asian Finance, Economics and Business,* vol. 8, no. 8, pp. 409-419, 2021.

[7] T. D. Oesterreich, F. Teuteberg, F. Bensberg and G. Buscher, "The controlling profession in the digital age: Understanding the impact of digitisation on the controller's job roles, skills and competences," *International Journal of Accounting Information Systems,* vol. 35, pp. 1-23, 2019.

[8] L. M. Andiola, E. Masters and C. Norman, "Integrating technology and data analytic skills into the accounting curriculum: Accounting department leaders' experiences and insights," *Journal of Accounting Education,* vol. 50, no. March, p. Article No. 100655, 2020.

[9] J. E. Otia and E. Bracci, "Digital transformation and the public sector auditing: The SAI's perspective," *Financial Accountability & Management,* vol. 38, no. 2, pp. 252-280, 2022.

[10] S. P. Pizzi, A. Venturelli, M. Variale and G. P. Macario, "Assessing the impacts of digital transformation on internal auditing: A bibliometric analysis," *Technology in Society,* vol. 67, no. November, p. Article No. 101738, 2021.

[11] V. Tiberius and S. Hirth, "Impacts of digitization on auditing: A Delphi study for Germany," *Journal of International Accounting, Auditing and Taxation,* vol. 37, no. December, p. Article No. 100288, 2019.

[12] S. Thipwiwatpotjana, "Digital Transformation of Accounting Firms: The Perspective of Employees from Quality Accounting Firms in Thailand," *Human Behavior, Development & Society,* vol. 22, no. 1, pp. 53-62, 2021.

[13] R. Andreassen, "Digital technology and changing roles: a management accountant's dream or nightmare?," *Journal of Management Control,* vol. 31, no. 3, p. 209–238, 2020.

[14] V. Tsiligiris and D. Bowyer, "Exploring the impact of 4IR on skills and personal qualities for future accountants: a proposed conceptual framework for university accounting education," *Accounting Education,* vol. 30, no. 4, 2021.

[15] D. Barr-Pulliam, H. L. Brown-Liburd and I. Munoko, "The effects of person-specific, task, and environmental factors on digital transformation and innovation in auditing: A review of the literature," *Journal of International Financial Management & Accounting,* vol. 33, no. 2, pp. 337-374, 2022.

[16] E. Bonsón and M. Bednárová, "Blockchain and its implications for accounting and auditing," *Meditari Accountancy Research,* vol. 27, no. 5, pp. 725-740, 2019.

[17] D. Gulin, M. Hladika and I. Valenta, "Digitalization and the Challenges for the Accounting Profession," *ENTRENOVA - ENTerprise REsearch InNOVAtion,* vol. 5, no. 1, pp. 428-437, 2019.

[18] R. Lombardi and G. Secundo, "The digital transformation of corporate reporting – a systematic literature review and avenues for future research," *Meditari Accountancy Research,* vol. 29, no. 5, pp. 1179-1208, 2021.

[19] M. Newman and D. Gough, "Systematic Reviews in Educational Research," in *Systematic Reviews in Educational Research: Methodology, Perspectives and Application*, Germany, Springer VS, 2020, pp. 3-22.

[20] H. Snyder, "Literature review as a research methodology: An overview and guidelines," *Journal of Business Research,* vol. 104, no. November 2019, pp. 333-339, 2019.

[21] Y. Xiao and M. Watson, "Guidance on Conducting a Systematic Literature Review," *Journal of Planning Education and Research,* vol. 39, no. 1, pp. 93-112, 2019.

[22] S. Brunelli, S. Sciascia and M. Baù, "Nonfinancial reporting in family firms: A systematic review and agenda for future research," *Business Strategy and the Environment,* vol. 32, 2023.

[23] H. B. Christensen, L. Hail and C. Leuz, "Mandatory CSR and sustainability reporting: economic analysis and literature review," *Review of Accounting Studies,* vol. 26, no. 3, p. 1176–1248, 2021.

[24] J. Á. Jaramillo, J. W. Z. Sossa and G. L. O. Mendoza, "Barriers to sustainability for small and medium enterprises in the framework of sustainable development—Literature review," *Business Strategy and the Environment,* vol. 28, no. 4, p. 512–524, 2019.

[25] M. J. Page, J. E. McKenzie, P. M. Bossuyt, ... and D. Moher, "The PRISMA 2020 statement: an updated guideline for reporting systematic reviews," *BMJ,* vol. 372, 2021.

[26] C. Fisch and J. Block, "Six tips for your (systematic) literature review in business and management research," *Management Review Quarterly,* vol. 68, p. 103–106, 2018.

[27] H. Han, R. K. Shiwakoti, R. Jarvis, C. Mordi and D. Botchie, "Accounting and auditing with blockchain technology and artificial Intelligence: A literature review," *International Journal of Accounting Information Systems,* vol. 48, pp. 1-16, 2023.

[28] H. Tushar and N. Sooraksa, "Global employability skills in the 21st century workplace: A semi-systematic literature review," *Heliyon,* vol. 9, no. 11, pp. 1-14, 2023.

[29] M. Diller, M. Asen and T. Späth, "The effects of personality traits on digital transformation: Evidence from German tax consulting," *International Journal of Accounting Information Systems,* vol. 37, no. June, p. Article No. 100455, 2020.

[30] S. Douglas and E. Gammie, "An investigation into the development of non-technical skills by undergraduate accounting programmes," *Accounting Education,* vol. 28, no. 3, pp. 304-332, 2019.

[31] V. G. Goulart, L. B. Liboni and L. O. Cezarino, "Balancing skills in the digital transformation era: The future of jobs and the role of higher education," *Industry and Higher Education,* vol. 36, no. 2, p. 118–127, 2021.

[32] J. Kokina, R. Gilleran, S. Blanchette and D. Stoddard, "Accountant as Digital Innovator: Roles and Competencies in the Age of Automation," *Accounting Horizons,* vol. 35, no. 1, p. 153–184, 2021.

[33] N. Kroon, M. d. C. Alves and I. Martins, "The Impacts of Emerging Technologies on Accountants' Role and Skills: Connecting to Open Innovation—A Systematic Literature Review," *Journal of Open Innovation: Technology, Market, and Complexity,* vol. 7, no. 3, pp. 163-189, 2021.

[34] E. v. Laar, A. J. v. Deursen, J. A. v. Dijk and J. d. Haan, "Determinants of 21st-century digital skills: A large-scale survey among working professionals," *Computers in Human Behavior,* vol. 100, no. November, pp. 93-104, 2019.

[35] A. F. Lino, A. C. B. de Aquino and F. R. Neves, "Accountants' postures under compulsory digital transformation imposed by government oversight authorities," *Financial Accountability & Management,* vol. 38, no. 2, pp. 202-222, 2021.

[36] M. Marrone and J. Hazelton, "The disruptive and transformative potential of new technologies for accounting, accountants and accountability: A review of current literature and call for further research," *Meditari Accountancy Research,* vol. 27, no. 5, pp. 677-694, 2019.

[37] J. Moll and O. Yigitbasioglu, "The role of internet-related technologies in shaping the work of accountants: New directions for accounting research," *The British Accounting Review,* vol. 51, no. 6, p. Article No. 100833, 2019.

[38] T. D. Oesterreich and F. Teuteberg, "The role of business analytics in the controllers and management accountants' competence profiles: An exploratory study on individual-level data," *Journal of Accounting & Organizational Change,* vol. 15, no. 2, pp. 330-356, 2019.

[39] P. J. Schmidt, J. Riley and K. S. Church, "Investigating Accountants' Resistance to Move beyond Excel and Adopt New Data Analytics Technology," *Accounting Horizons,* vol. 34, no. 4, p. 165–180, 2020.

[40] S. Vitali and M. Giuliani, "Emerging digital technologies and auditing firms: Opportunities and challenges," *International Journal of Accounting Information Systems,* vol. 53, no. June, p. Article No. 100676, 2024.

[41] S. Yoon, "A Study on the Transformation of Accounting Based on New Technologies: Evidence from Korea," *Sustainability,* vol. 12, no. 20, p. Article No. 8669, 2020.

[42] I. M. Suarta, I. K. Suwintana, I. G. A. O. Sudiadnyani and N. P. R. Sintadevi, "Employability and digital technology: what skills employers want from accounting workers?," *Accounting Education,* vol. 33, no. 3, pp. 274-295, 2024.

[43] D. Rumbens, C. Richardson, C. Lee, J. Mizrahi and C. Roche, "The path to prosperity: Why the future of work is human.," 2019. [Online]. Available: https://www.deloitte.com/au/en/issues/work/path-prosperity-future-work.html. [Accessed 15 March 2024].

[44] AICPA & CIMA, "Future re-inventing finance for a digital world," The American Institute of CPAs and The Chartered Institute of Management Accountants., North Carolina, U.S.A., 2019.

[45] IFAC, Handbook of the international code of ethics for professional accountants, New York: International Federation of Accountants, 2018, pp. 1-254.

[46] IMA, "IMA management accounting competency framework," Institute of Management Accountants, Montvale, N.J., 2019.

[47] M. Kılıç and S. B. Kahyaoğlu, Algorithmic Discrimination and Ethical Perspective of Artificial Intelligence, Singapore: Springer Nature, 2024.

[48] L. M. Tan and F. Laswad, "Professional skills required of accountants: what do job advertisements tell us?," *Accounting Education,* vol. 27, no. 4, pp. 403-432, 2018.

[49] E. Koumparaki, "The 7 in-demand skills employees currently need," 2023. [Online]. Available: https://www.talentlms.com/blog/in-demand-employee-skills/. [Accessed 25 Februari 2024].

[50] WEF, "The Future of Jobs Report 2023," World Economic Forum, 2023.

[51] C. Webb, "The digital accountant: Digital skills in a transformed world," The Association of Chartered Certified Accountants, London, UK, 2020.

[52] B. Marr, "The Digital Transformation Of Accounting And Finance - Artificial Intelligence, Robots And Chatbots," 1 June 2018. [Online]. Available: https://www.forbes.com/sites/bernardmarr/2018/06/01/the-digital-transformation-of-accounting-and-finance-artificial-intelligence-robots-and-chatbots/?sh=fcf260f4ad89. [Accessed 20 February 2021].

[53] UNESCO, "Digital skills critical for jobs and social inclusion," 15 March 2018. [Online]. [Accessed 15 October 2021].

[54] ACCA, "The digital accountant: digital skills in a transformed world," 2020.