sciendo

Proceedings of the 4th International Conference on Economics and Social Sciences (2021), ISSN 2704-6524, pp. 453-464

The 4th International Conference on Economics and Social Sciences
Resilience and economic intelligence through digitalization and big data analytics
June 10-11, 2021
Bucharest University of Economic Studies, Romania

Digitalization in Accounting: A Structured Literature Review

Oana Cristina STOICA[1*], Liliana IONESCU-FELEAGĂ[2]

DOI: 10.2478/9788366675704-045

Abstract

Digitalization brings with it many changes worldwide, especially in those fields where information technology is indispensable. The accounting profession is such a field where digital transformations take its tool. The objective of this paper is to synthesize the recent academic works on the accounting digitalization area and to give some insights for future research by using a structured literature review (SLR). The findings of our study show that researchers direct their attention towards three main aspects: accounting education, professional regulation, and accounting information systems by showing how each of them contributes to changes in the accounting profession following its digitalization. The present paper could be of interest to researchers as it gives a summary of the existing recent literature in accounting digitalization.

Keywords: digitalization, accounting profession, structured literature review (SLR), accounting education, accounting information systems.

JEL Classification: M49.

1. Introduction

The aim of this paper is to synthetize and review the existing literature on digitalization in accounting. In so doing, this paper seeks to identify how the accounting profession changes due to digitalization and how accounting education, professional regulators, and accounting information systems contribute to this change.

The accounting field is one of the most affected by digital transformation given that most of the tasks performed by accountants are routine ones. Digitalization has the potential to influence accounting practices in many ways by bringing accountants into non-accounting functions (Knudsen, 2020). Advances in technology give a lot of incertitude with regards to roles that accountants would play (Kokina and

[1] Bucharest University of Economic Studies, Bucharest, Romania, stoicaoana14@stud.ase.ro.
[2] Bucharest University of Economic Studies, Bucharest, Romania, liliana.feleaga@cig.ase.ro.
* Corresponding author.

Blanchette, 2019). All the above show that the accounting profession is likely to change due to digitalization in the following years.

Using a structured literature review (SRL) as a research method, the present paper addresses the following three research questions:

RQ1: How is research on accounting digitalization developing?

RQ2: What is the focus and critique of the literature on accounting digitalization?

RQ3: What is the future for research on accounting digitalization?

In answering our three research questions, we use a SLR as a research method. Massaro and Guthrie (2016) argue that a SLR requires rigid rules comparing with traditional literature review that has no rules. Also, in conducting a SLR, authors need to follow a specific plan and logically structure the paper. Thus, this method has the potential to help rebuild and reshape the existing literature review method used in accounting studies (Massaro and Guthrie, 2016). This type of literature review and other close methods have recently been used in the accounting area by authors. For instance, Tsalavoutas et al. (2020) conducted a study about mandatory IFRS disclosure, Dumay et al. (2016) reviewed the literature in integrated reporting area and Knudsen (2020) conducted a study on digitalization in accounting. The present paper follows the Knudsen (2020) study, which reviews the existing literature between 2008 and 2017, while our paper reviews the existing literature between 2018 and 2021.

Our findings show that researchers directed their attention towards the accounting digitalization area, but further research is needed to investigate the digitalization impact on the accounting profession.

The paper is structured as follows. The next section describes the methodology used. As Massaro and Guthrie (2016) argue in their paper, a SLR does not contain a traditional literature review, having that the literature review is done in the findings section. As such, in the third section, we summarize the findings in the reviewed papers, and in the last section, the main conclusion, directions for future research as well as implications and limitations are given.

2. Methodology: Structured Literature Review

Our literature review has been done by using the ten steps for developing a SLR that are given by Massaro and Guthrie (2016) in their paper, which are presented in Figure 1 below.

We first wrote a literature review protocol to define the boundaries for our research after noticing that there is a potential for a SLR on digitalization impact on the accounting profession and more specifically on financial accounting. Given that the literature on accounting digitalization is constantly evolving and the evolution in technology has gone through serious changes in the past few years, our literature review was limited to studies published between January 1st, 2018 and 2021. Moreover, only articles from accounting journals indexed in Scopus database have been selected in order to limit our search to published academic studies only and to exclude conferences and other unpublished papers.

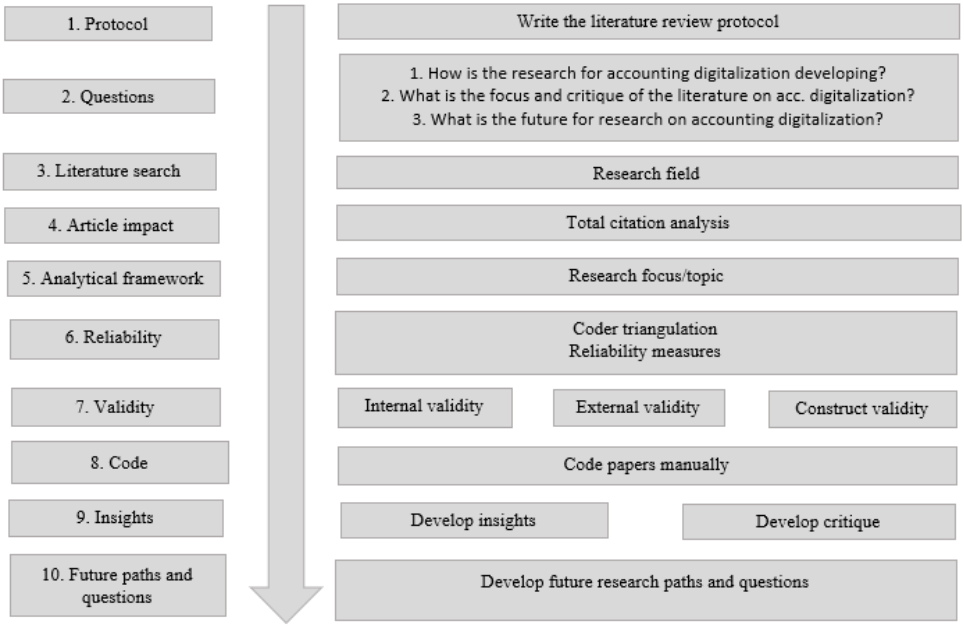

Figure 1. The process to develop a SLR
Source: Adapted from Massaro et al. (2016), p. 8.

Second, we have defined our research questions s having as a starting point the three generic questions for conducting SRL, as described by Massaro et al. (2016, p. 7), and adapting them to our study. The three research questions are presented in Figure 1.

Third, we determined the type of studies and carried out a comprehensive literature search. As mentioned above, we searched only in accounting journals indexed in Scopus database and available in Science Direct by selecting the subject area Business, Management and Accounting, section Accounting. The searching process was based on keywords search in the journals mentioned in Table 1. First we sought for the keyword "digitali?ation" and not surprisingly, only few papers have been returned. Similarly to Knudsen (2020), we then sought for other words related to digitalization. The query used in the search process, which could be found in Appendix A, returned a number of 118 articles, and the next step was to identify which of them are relevant for our research by reading the abstract for each paper. As a result, we found that only 17 papers were pertinent for our study as the other ones were more related to auditing, controlling, stock price and other different areas. Table 1 below shows the status of the accounting digitalization papers on the reviewed journals. The selected papers are presented in Appendix B.

Table 1. Status of Accounting digitalization articles in the reviewed journals

Ref. No.	Journals in the review	Number of articles
1	International Journal of Accounting Information Systems	11
2	Accounting, Organizations and Society	1
3	Journal of Accounting Education	4
4	The British Accounting Review	1
	TOTAL	**17**

Source: Authors' own research.

Fourth, we measured the article impact depending on the number of citations, which represents an indicator of interest in the research area (Dumay et al. 2016). Using Google Scholar, we found that the reviewed articles had been cited 322 times as of April 2021. For the selected articles published in 2018 and 2019, the total number of citations was 271, and for the articles published in 2020 and 2021, the total number of citations was 51. However, we did not exclude from our analysis the articles with a low number of citations given that they are recent, and it there was not enough time for them to be cited (Dumay, 2014). The top 3 most cited articles are Moll and Yigitbasioglu (2019) with 79 citations, who review the literature on the internet-related technologies in accounting, followed by Dzuranin et al. (2018) with 52 citations, who propose the infusion of data analytics in the accounting curriculum and Kokina, and Blanchette (2019) with 31 citations, who investigated the digital labour in accounting. The above indicate that there is an increased interest in the accounting digitalization area.

Fifth, we defined our analytical framework by identifying the units of analysis in our reviewed papers (Massaro and Guthrie, 2016). The unit that we considered suitable for performing the analysis was research focus. Furthermore, for this unit we chose three criteria: accounting education, professional regulators, accounting information systems and accountants in practice, as we found that accounting digitalization research in the reviewed articles is directed towards these main areas. Also, we believe that a better picture of accounting digitalization research could be better understood when splitting the research focus on different items. Moreover, for each criterion we discuss findings and research methods in order to see what the results of the papers are and how these have been analysed.

Sixth, we established the literature review reliability by separately coding the reviewed papers and coming up with a similar analytical unit.

Seventh, we tested the literature review validity for each of the three methods discussed by Massaro and Guthrie (2016). Internal validity was ensured when authors separately coded the papers. External validity was ensured by excluding irrelevant articles from the analysis after reading the abstract of the 118 articles. This process was in detail described in the third step. Construct validity was ensured through the analysis of citations as discussed in the fourth step.

Eighth, we coded the data as mentioned in the fifth step. Furthermore, we did not use any computer-aided coding, but we chose to code the data manually instead.

3. Insights and Critique

The nineth step in writing a structured literature review, as suggested by Massaro and Guthrie (2016), is to develop insights and critique by analysing the dataset. As such, this section aims to answer our first two research questions. Next, we will present our analysis in accordance with the defined analytical framework.

3.1. Accounting Education

3.1.1. Findings

Nowadays, organizations in the accounting area need more innovative workforce than ever before (EY, 2018), because entry level accounting jobs are heavy on data skills (Lawson and Smith, 2018). This statement shows us the need of accounting companies for accounting graduates that have not only accounting knowledge, but also innovation and data skills.

By analysing the reviewed papers, we determined that researchers contribute to this area to see whether accounting students meet the criteria required by employees and how universities and other education institutions should change their curricula to prepare students. As an example, Sarkar et al. (2020), identify the way accounting information systems and other related courses are adapted for preparing students with the necessary skills by analysing two different institutions. They found that both the focused approach and the hybrid approach are valuable for students to accumulate innovation and data skills. The hybrid approach is also supported in Dzuranin et al. (2018) in their paper. In addition, the authors of this study found support for an integrative approach and suggest that developing data analytic mindsets should be considered by faculties for their students.

Furthermore, Andiola et al. (2020) conducted a survey with AACSB accounting department leaders to see the status for integrated technology in their curricula. They found that accounting information systems are required by the majority of departments within the undergraduate curriculum. Also, the findings show that many courses integrate data analytics and technology, but they are very different.

Moreover, Ballou et al. (2018) found that knowledge, skills, and abilities such as holistic business knowledge, data analytics, technology and tools, research skills, writing or communication and unstructured problem solving can help create a scientific-method mentality. Moreover, authors state that discrepancies exist between academics' and accounting professionals' perspectives with respect to knowledge, skills, and abilities allocation.

The findings on the accounting education role on accounting digitalization provide a few key insights. In the first place, the review indicates that the knowledge and skills accounting students should acquire are beyond traditional accounting. Second, the review shows that data analytics and technology should be integrated in the accounting curricula in different approaches to help develop the required knowledge and skills.

3.1.2. Research Methods

The studies in our reviews focus mostly on the survey method, but case studies and interviews are also used.

3.2. Profession Regulators

3.2.1. Findings

Accounting profession regulators aim at helping with specific responses to the need for certain standards that the members of the profession should meet.

Recently, regulators started to integrate different standards in the context of digitalization. For example, listed companies are now required to submit their annual reports on XBRL formats. The construction of a taxonomy that allows computers to read and transmit accounting information is an essential step for accounting standard-setters to enable companies to comply with XBRL reporting standard and accommodate digitalization (Rowbottom et al., 2021). The authors of the study state that accounting standard-setters sought to minimise the digitalization impact by modelling the taxonomy. Findings in Rowbottom et al., (2021) paper show that the process of digitalization has the potential to change the IFRS principle-based approach in rule-based approach as corporate reporting should be more homogenous. With respect to the XBRL reporting, Pei and Vasarhelyi (2020) propose an accounting system that achieves better integration between non-GAAP sources of financial measures and information, named U-XBRL. Chiu et al. (2019) argue that XBRL is the most common developing technology studied by researchers. This argument is also supported by Hutchison et al. (2018) in their papers.

Furthermore, Alkhatib et al. (2019) investigate the factors that can influence the voluntary digital reporting to Companies House by small companies in the UK as in 2005 the UK government implemented two different digital reporting initiatives for these companies. The results show that the technology competences that a company has, the relative advantage that comes from standardization benefits and support from top management are the factors that positively influence voluntary digital reporting.

Advances in information technology bring about not only benefits, but also risks and threats mostly related to cybersecurity incidents (SEC, 2018). Gao et al. (2020), conducted a longitudinal study on cybersecurity disclosure, as in 2018 SEC approved a guidance on cybersecurity risk disclosures by outlining the importance of sufficient procedures and controls disclosure and interdicting insider trading on information about cyber incidents that are not public. The authors of the study found that risk of service or operation disruption and data breach risk are the two most frequently disclosed cybersecurity risks. In addition, findings of the paper show that cybersecurity risk disclosure length increased during the study period.

In summary, professional regulators play an important role in accounting digitalization as they help companies to digitally disclose their reports and come up

with guidance for disclosing cybersecurity risk, which is the new threat in nowadays' accounting information reporting.

3.2.2. Research Methods

Each paper in this section uses different research methods. For example, one of the papers uses a combination of interviews, observations, and documentary evidence, while other three papers use a single method: regression, conceptual model, and survey.

3.3. Accounting Information Systems

3.3.1 Findings

Advances in technology and the need for more real-time information changed the way accounting is performed. Thus, it was interesting for us to see how our reviewed papers describe the information systems and their role on accounting change.

For instance, Moll and Yigitbasioglu (2019) critically review the literature on big data, artificial intelligence, cloud computing and blockchain, and state that these technologies may contribute to a significant improvement of financial visibility. In addition, they argue that academics have largely ignored the influence of most digital technologies on accountants' work except big data. However, recently published papers discuss this relationship.

As an example of artificial intelligence, Kokina and Blanchette (2019) found that certain tasks that are repetitive and rule based are suitable for bots and will no longer be performed by people. In addition, they found that companies benefit from digitalization and automatization through robotic process automation in particularly, by saving their costs, improving process documentation, lowering the error rates, obtaining more accurate measurement of process performance, and having a better reporting quality. Regarding automatization, Søgaard (2021) proposes a prototype to show how accounting information systems, distributed ledger technology and public governance could be interrelated to increase social welfare. The author states that administrative burdens should be reduced for SMEs, given that the proposed prototype ensures the flow of tax revenue.

Cloud accounting is another component of digitalization that impacts the way accounting is performed. Asatiani et al. (2019) investigate the effects of the accounting process characteristics on decision to outsource accounting tasks. In so doing, they compare users of cloud-based and traditional accounting information systems. The authors found that users of cloud-based accounting information systems are more likely to outsource their accounting processes. With regards to research on accounting information system cloud computing, Alles (2018) argues that the literature fails to determine its clear role in relation to either the field of cloud computing or of accounting. Another interesting aspect is revealed by the information disclosure on social media, which has recently received attention from authors. In this respect Amin et al. (2021) investigate the determinants of disclosing

CSR information on social media. Their findings show that disclosing CSR information on Twitter has increased in the last few years, and that the presence of women on firm boards positively influences CSR disclosure on social media. Also, by citing Postman (2009), the authors present how companies benefit from social media disclosure. The unique characteristics that aim at providing value to social media are authenticity, transparency, immediacy, participation, connectedness, and accountability.

In summary, accounting information systems play a significant role in accounting change by moving the profession beyond its traditional aspects. Also, the way companies report the information is changing due to advances in technology by becoming more timely and more transparent. As Knudsen (2020), concludes in his study, "digitalization is the impetus for increasingly elusive boundaries of accounting".

3.3.2. Research Methods

The studies above use numerous different research approaches, such as textual analysis and regression, creation and evaluation of an IT artefact, interviews, surveys, and natural experiment.

4. Conclusions and Directions for Future Research

This study reviewed the most recent existing literature on the accounting digitalization area by using a structured literature review. Thus, this paper provides directions for future research in this area.

Our findings suggest that researchers have directed their attention towards accounting digitalization by investigating it from different points of view. In our reviewed papers we found three aspects that can play an important role in this matter. First, we saw that researchers pay significant attention to accounting education, especially on how the new requirements in the digitalization era could be integrated in education curricula to prepare students for practice and how they should be integrated. Second, we found that several papers investigated the impact of professional regulators on accounting digitalization by discussing the new standards and guidance and how they influence reporting. Third, we found that a significant number of papers directed their attention towards accounting information systems. In this respect, authors investigated the tasks that are suitable for the implementation of robotic process automation to replace people, what the new trends on information disclosure are, what their determinants are and whether cloud computing is a factor that influences the accounting outsourcing decision. Some authors even give prototypes on how accounting information should be reported to ensure social welfare.

However, we did not find any academic paper in our review that directly discuses about the impact of digitalization on the accounting profession and what the future of accountants will be, which could be an interesting aspect to study. Moreover, research is needed to find how the three aspects, academia, regulation, and

accounting information systems are interconnected to ensure a good operation in what means digital transformation and its implications on the accounting domain.

Despite its limitations related to the dataset, our study could be of interest for researchers, as it summarizes the findings in the accounting digitalization area of the past few years and gives insights for future research.

References

[1] Alles, M. (2018). Examining the role of the AIS research literature using the natural experiment of the 2018 JIS conference on cloud computing, *International Journal of Accounting Information Systems*, 31, pp. 58-74.

[2] Alkhatib, E. A., Ojala, H. & Collis, J. (2019). Determinants of the voluntary adoption of digital reporting by small private companies to Companies House: Evidence from the UK, *International Journal of Accounting Information Systems*, 34, p. 100421.

[3] Amin, M. H., Mohamed, E. K. & Elragal, A. (2021). CSR disclosure on Twitter: Evidence from the UK, *International Journal of Accounting Information Systems*, 40, p. 100500.

[4] Andiola, L. M., Masters, E. & Norman, C. (2020). Integrating technology and data analytic skills into the accounting curriculum: Accounting department leaders' experiences and insights, *Journal of Accounting Education*, 50, p. 100655.

[5] Asatiani, A., Apte, U., Penttinen, E., Rönkkö, M. & Saarinen, T. (2019). Impact of accounting process characteristics on accounting outsourcing-Comparison of users and non-users of cloud-based accounting information systems, *International Journal of Accounting Information Systems*, 34, p. 100419.

[6] Ballou, B., Heitger, D. L. & Stoel, D. (2018). Data-driven decision-making and its impact on accounting undergraduate curriculum, *Journal of Accounting Education*, 44, pp. 14-24.

[7] Chiu, V., Liu, Q., Muehlmann, B. & Baldwin, A. A. (2019). A bibliometric analysis of accounting information systems journals and their emerging technologies contributions, *International Journal of Accounting Information Systems*, 32, pp. 24-43.

[8] Dumay, J. (2014). "15 years of the journal of intellectual capital and counting: a manifesto for transformational IC research", *Journal of Intellectual Capital*, Vol. 15, No. 1, pp. 2-37.

[9] Dumay, J., Bernardi, C., Guthrie, J. & Demartini, P. (2016). Integrated reporting: A structured literature review. *Accounting Forum*, 40(3), pp. 166-185.

[10] Dzuranin, A. C., Jones, J. R. & Olvera, R. M. (2018). Infusing data analytics into the accounting curriculum: A framework and insights from faculty, *Journal of Accounting Education*, 43, pp. 24-39.

[11] EY. (2018). Future Work Now. EY.com. Retrieved from https://www.ey.com/gl/en/services/people-advisory-services/ey-future-work-now.

[12] Gao, L., Calderon, T. G. & Tang, F. (2020). Public companies' cybersecurity risk disclosures, *International Journal of Accounting Information Systems*, 38, p. 100468.

[13] Hutchison, P. D., Daigle, R. J. & George, B. (2018). Application of latent semantic analysis in AIS academic research, *International Journal of Accounting Information Systems*, 31, pp. 83-96.

[14] Knudsen, D. R. (2020). Elusive boundaries, power relations, and knowledge production: A systematic review of the literature on digitalization in accounting, *International Journal of Accounting Information Systems*, 36, p. 100441.

[15] Kokina, J. & Blanchette, S. (2019). Early evidence of digital labour in accounting: Innovation with Robotic Process Automation, *International Journal of Accounting Information Systems*, 35, p. 100431.

[16] Lawson, R. & Smith, D. (2018). How to Master Digital Age Competencies, *Strategic Finance*, September.

[17] Moll, J. & Yigitbasioglu, O. (2019). The role of internet-related technologies in shaping the work of accountants, New directions for accounting research, *The British Accounting Review*, 51(6), p. 100833.

[18] Massaro, M., Dumay, J. & Guthrie, J., (2016). On the shoulders of giants: undertaking a structured literature review in accounting. Account. Audit. Account. J. 29 (5), pp. 767-801.

[19] Pei, D. & Vasarhelyi, M. A. (2020). Big data and algorithmic trading against periodic and tangible asset reporting: The need for U-XBRL. *International Journal of Accounting Information Systems*, 37, pp. 100453.

[20] Rowbottom, N., Locke, J. & Troshani, I. (2021). When the tail wags the dog? Digitalisation and corporate reporting. Accounting, Organizations and Society, p. 101226.

[21] Sarkar, S., Gray, J., Boss, S. R. & Daly, E. (2021). Developing institutional skills for addressing big data: Experiences in implementation of AACSB Standard 5, *Journal of Accounting Education*, 54, p. 100708.

[22] Scopus.com. (2021). [online] Available at: https://www.scopus.com/search/form.uri?display=advanced, accessed 18 March 2021.

[23] SEC (2018). Commission statement and guidance on public company cybersecurity disclosures, available at: https://www.sec.gov/rules/interp/2018/33-10459.pdf.

[24] Søgaard, J. S. (2021). A blockchain-enabled platform for VAT settlement, *International Journal of Accounting Information Systems*, 40, p. 100502.

[25] Tsalavoutas, I., Tsoligkas, F., Evans, L. (2020). Compliance with IFRS mandatory disclosure requirements: A structured literature review, *Journal of International Accounting*, Auditing and Taxation 40, p. 100338.

Appendices

Appendix A. Query used in Scopus Database

[TITLE-ABS-KEY (digitali?ation OR digital OR "big data" OR "analytics" OR "cloud" OR "cyber" OR "mobile" OR "social media" OR "roboti?ation" OR "automati?ation" OR "artificial intelligence" OR "blockchain" OR "platforms" OR "internet of things") AND PUBYEAR > 2017 AND PUBYEAR < 2022 AND SRCTITLE ("Journal of Financial Economics" OR "International Journal of Accounting Information Systems" OR "Journal of Accounting and Economics" OR "Journal of International Accounting, Auditing and Taxation" OR "Accounting,

Organizations and Society" OR "Journal of Accounting and Public Policy" OR "Critical Perspectives on Accounting" OR "Asia Pacific Management Review" OR "Journal of Contemporary Accounting & Economics" OR "Advances in Accounting" OR "Journal of Accounting Education" OR "European Research on Management and Business Economics" OR "China Journal of Accounting Research" OR "Management Accounting Research" OR "The British Accounting Review")]

Appendix B. List of Selected Articles

Ref. No	Source title	Title	Method	Year	Authors
1	*International Journal of Accounting Information Systems*	CSR disclosure on Twitter: Evidence from the UK	Quantitative	2021	Amin, M.H., Mohamed, E.K.A., Elragal, A.
2	*International Journal of Accounting Information Systems*	A blockchain-enabled platform for VAT settlement	Conceptual	2021	Søgaard, J.S.
3	*Journal of Accounting Education*	Developing institutional skills for addressing big data: Experiences in implementation of AACSB Standard 5	Qualitative	2021	Sarkar, S., Gray, J., Boss, S.R., Daly, E.
4	*Accounting, Organizations and Society*	When the tail wags the dog? Digitalisation and corporate reporting	Qualitative	2021	Rowbottom, N., Locke, J., Troshani, I.
5	*International Journal of Accounting Information Systems*	Public companies' cybersecurity risk disclosures	Quantitative	2020	Gao, L., Calderon, T.G., Tang, F.
6	*International Journal of Accounting Information Systems*	Big data and algorithmic trading against periodic and tangible asset reporting: The need for U-XBRL	Conceptual	2020	Pei, D., Vasarhelyi, M.A.
7	*International Journal of Accounting Information Systems*	Elusive boundaries, power relations, and knowledge production: A systematic review of the literature on digitalization in accounting	Qualitative	2020	Knudsen, D.-R.
8	*Journal of Accounting Education*	Integrating technology and data analytic skills into the accounting curriculum: Accounting department leaders' experiences and insights	Quantitative	2020	Andiola, L.M., Masters, E., Norman, C.
9	*The British Accounting Review*	The role of internet-related technologies in shaping the work of accountants: New directions for accounting research	Qualitative	2019	Moll, J., Yigitbasioglu, O.

Ref. No	Source title	Title	Method	Year	Authors
10	*International Journal of Accounting Information Systems*	Early evidence of digital labor in accounting: Innovation with Robotic Process Automation	Qualitative	2019	Kokina, J., Blanchette, S.
11	*International Journal of Accounting Information Systems*	Impact of accounting process characteristics on accounting outsourcing - Comparison of users and non-users of cloud-based accounting information systems	Quantitative	2019	Asatiani, A., Apte, U., Penttinen, E., Rönkkö, M., Saarinen, T.
12	*International Journal of Accounting Information Systems*	Determinants of the voluntary adoption of digital reporting by small private companies to Companies House: Evidence from the UK	Quantitative	2019	Alkhatib, E., Ojala, H., Collis, J.
13	*International Journal of Accounting Information Systems*	A bibliometric analysis of accounting information systems journals and their emerging technologies contributions	Qualitative	2019	Chiu, V., Liu, Q., Muehlmann, B., Baldwin, A.A.
14	*International Journal of Accounting Information Systems*	Application of latent semantic analysis in AIS academic research	Qualitative	2018	Hutchison, P.D., Daigle, R.J., George, B.
15	*International Journal of Accounting Information Systems*	Examining the role of the AIS research literature using the natural experiment of the 2018 JIS conference on cloud computing	Qualitative	2018	Alles, M.
16	*Journal of Accounting Education*	Data-driven decision-making and its impact on accounting undergraduate curriculum	Mixt methods	2018	Ballou, B., Heitger, D.L., Stoel, D.
17	*Journal of Accounting Education*	Infusing data analytics into the accounting curriculum: A framework and insights from faculty	Quantitative	2018	Dzuranin, A.C., Jones, J.R., Olvera, R.M.