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Unveiling the Transformational Impact of Digital Technologies on Accounting and Finance

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ABSTRACT

Digital technologies have significantly transformed the fields of accounting and finance, revolutionizing traditional practices and shaping new avenues for research and professional development. This research conducts a comprehensive bibliometric analysis to uncover the transformative impact of digital technologies on accounting and finance. Using bibliometric techniques, key trends, influential authors, and notable publications in this domain were identified. The analysis explores the interdisciplinary nature of digital technologies in accounting and finance, highlighting the integration of technologies with subfields such as financial reporting, auditing, and financial management. The findings provide valuable insights into the evolving landscape of accounting and finance in the digital age, assisting practitioners, policymakers, and researchers in understanding and harnessing the potential of digital technologies.

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1. INTRODUCTION

The rapid advancement of digital technologies has brought about significant transformations in various industries, including accounting and finance. These technologies, such as cloud computing, big data analytics, artificial intelligence, blockchain, and robotic process automation, have revolutionized the way financial information is processed, managed, and reported. The integration of digital technologies in accounting and finance not only streamlines traditional practices, but also opens up new possibilities for innovation, efficiency and strategic decision-making [1], [2].

Digital technologies have the potential to reshape the roles and responsibilities of accounting and finance professionals, allowing them to focus more on strategic analysis and decision support rather than routine tasks. The automation of manual processes, the analysis of large amounts of financial data, and the application of advanced algorithms and machine learning techniques have improved the accuracy, timeliness and reliability of financial information. This transformation has also facilitated better risk assessment, improved internal control systems, and increased transparency in financial reporting [2]–[5].

Technological developments are indeed evolving in accounting and finance,

and research in these fields is adapting to these changes. Digital transformation in public finance, for example, has contributed to the growth of countries such as Cabo Verde by improving public service management, transparency and process simplification [6]. The adoption of accounting information systems (AIS) in small and medium-sized enterprises is also influenced by technological, human, organizational, and environmental factors [7]. Blockchain technology has emerged as a multifaceted topic with various implications for accounting, auditing, and accountability, as well as the accounting profession and governance [8]. The integration of blockchain with other technological developments, such as virtual reality and the metaverse, is an area that requires further investigation.

Artificial intelligence (AI) and machine learning are also impacting the accounting profession, with new technologies providing challenges and opportunities for accounting professionals and educators [9]. The implementation of Robotic Process Automation (RPA) in accounting and auditing is another area that has seen significant growth, with AI applications transforming current accounting practices [10]. To keep up with these technological advances, accounting research should focus on understanding the implications of new technologies on the profession, identifying best practices for their implementation, and exploring the potential challenges and opportunities they present. In addition, accounting education must adapt to these changes by incorporating relevant technological knowledge and skills into their curricula, preparing future accountants for the profession's ever-evolving landscape [9], [10].

In summary, as technology continues to evolve in accounting and finance, research in these areas must adapt to remain relevant and provide valuable insight into the implications of these advances on the profession. By understanding the impact of new technologies and addressing the challenges they present, the accounting profession can continue to grow and thrive in the digital age.

Emerging technologies have significantly impacted the fields of accounting and finance, leading to the development of new research directions and challenges. Some of the key technologies that have impacted these fields include data analytics, artificial intelligence (AI), big data, blockchain and robotic process automation [11], [12]. In the accounting profession, emerging technologies have led to the development of new research directions, such as the impact of data analytics on accounting curricula and the accounting profession1. In addition, the advent of smart finance has led to the innovation of enterprise management accounting informatization platforms, which assist in providing multi-level management analysis and decision support [11]. A bibliometric analysis of key research themes in accounting and finance shows that recent research in behavioral finance focuses on investor sentiment, social media, investor attention, and financial literacy [13]. In the field of behavioral accounting, research has explored cognitive biases, behavioral taxes, organizational ecology, and organizational performance evaluation styles [13]. Emerging technologies have also led to new trends and topics for practitioners to consider, such as applications built on blockchain technology and implementation issues associated with other new technologies [12]. In addition, the rapid development of information technology has resulted in increased research interest in the field of financial control and accounting at both the country and company levels [14]. In the context of Industry 4.0, the accounting profession is undergoing significant changes, with an increasing emphasis on integrated thinking skills and technological literacy. This shift is expected to contribute to maintaining user confidence in accounting and reporting data.

Overall, emerging technologies have had a profound impact on the development of accounting and finance, leading to new research directions, challenges and opportunities. As these technologies are

constantly evolving, it is imperative for professionals in this field to adapt and stay informed about the latest trends and developments [11]–[14].

The main objective of this study is to conduct a comprehensive bibliometric analysis to uncover the impact of digital technology transformation on accounting and finance.

Accounting and Finance

Digital technologies have become increasingly prevalent in accounting and finance, transforming traditional practices and shaping new avenues for research and professional development. These technologies cover a wide range of tools and applications, including cloud computing, big data analytics, artificial intelligence, blockchain, and robotic process automation [15]–[17]. These technologies have revolutionized data collection, processing, and analysis, thus enabling more efficient and accurate financial information management. The integration of digital technologies has also facilitated better decision-making, risk assessment, and regulatory compliance in accounting and finance [18], [19].

The transformative impact of digital technology on accounting and finance is evident across multiple dimensions. First, automation of manual processes through technologies such as robotic process automation has increased efficiency, reduced errors, and freed up time for accounting professionals to focus on more strategic tasks. Second, big data analytics and artificial intelligence have enabled organizations to process and analyze large amounts of financial data, leading to improved forecasting, financial planning, and performance evaluation [20], [21]. Third, digital technologies have improved the transparency and accuracy of financial reporting through features such as real-time reporting and data visualization tools. In addition, technologies such as blockchain have the potential to revolutionize auditing practices by increasing transparency, security, and trust in financial transactions [22].

Previous research has explored various aspects of digital technologies in accounting and finance. Research has examined the challenges of adoption and implementation of these technologies in organizations, addressing factors such as resistance to change, organizational culture, and skills gaps [23], [24]. Other research has focused on the benefits and limitations of digital technologies, highlighting their impact on the quality of financial reporting, decision-making processes and risk management practices. In addition, research has also investigated the ethical implications of digital technologies, particularly regarding data privacy, cybersecurity and potential fraudulent activities. Overall, previous research has provided insights into the implications and opportunities brought by digital technologies in accounting and finance.

2. METHODS

This research utilizes a bibliometric analysis approach to uncover the transformational impact of digital technologies on accounting and finance. Bibliometric analysis is a quantitative method that allows the analysis of publications, citations, authors, and keywords to identify patterns, trends, and relationships within a given field [25].

To conduct bibliometric analysis, a complete collection of relevant literature is required. The data collection process involves identifying and retrieving scholarly publications from various sources, including academic journals, conference proceedings, and relevant databases. In this study, the selection of databases will be based on the coverage of accounting, finance, and technology literature. Commonly used databases for this research may include but are not limited to Scopus, Web of Science, and Google Scholar.

Table 1. Data Metrics

Publication years:	1979-2023

Citation years:	44 (1979-2023)
Papers:	850
Citations:	91083
Cites/year:	2070.07
Cites/paper:	107.16
Authors/paper:	1.73
h-index:	139
g-index:	294
hI,norm:	124
hi,annual:	2.82
hA-index:	46
Papers with ACC >= 1,2,5,10,20: 587,451,267,108	

3. RESULTS AND DISCUSSION

To achieve the initial goal of this research, which focused on the classification of Digital Technologies and Accounting Finance articles using VosViewer software. By utilizing the title and abstract fields and applying the binary counting method, they managed to identify a total of 4651 terms. In an attempt to analyze further, only 132 terms were selected by setting a minimum occurrence threshold of 10 times. However, it should be taken into account that for each of the 132 terms, a relevance score will be calculated. Considering the default selection threshold of 60%, only the most relevant terms would be automatically selected, resulting in 79 corresponding words. However, it is important to manually verify the words by removing unrelated terms, such as editorial, sample, abstract, and others. After verification, the number of words eligible for map generation finally reached 69.

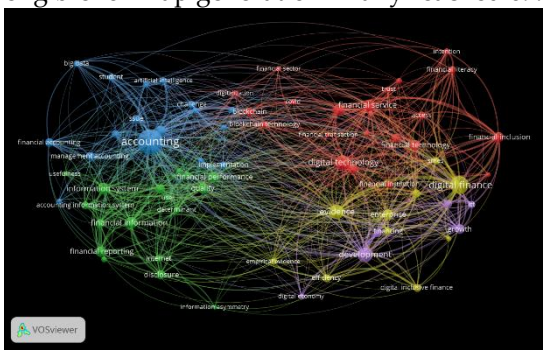

Figure 1. Result Mapping

Based on Figure 1 above, it is very interesting to discuss accounting and finance digitalization articles that have been classified where clusters one to five become overlapping and interconnected clusters, trends that occur in the field of accounting and finance are topics that are often discussed especially the business industry is a dynamic industry. Figure 2 below shows how the cluster is built.

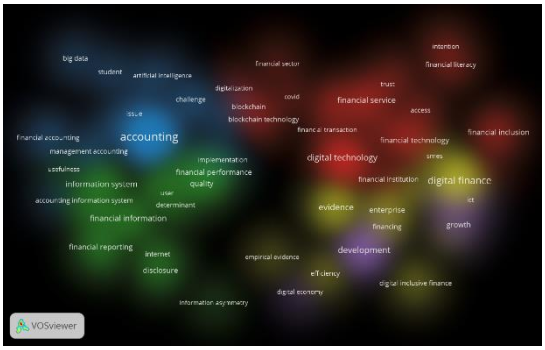

Figure 2. Mapping of Cluster Results

The figure above shows how the clusters form the subject areas of accounting and finance digitalization which will be explained in more detail in the table below:

Occurrences in this study are described in a comprehensive manner as below:

Table 2. Occurrence

Cluster	Total Items	Most frequent keywords (occurrences)	Keyword
1	(19)	Blockchain technology (15), Financial Industry (10), Fintech (15)	Acces, banking, blockchain technology, covid, customer, digital technology, digitalization, financial inclusion, financial industry, financial innovation, financial institution, financial literacy, financial sector, financial service, financial technology, financial

			transaction, fintech, intention, trust.
2	(14)	Firm Performance (25), Information asymmetry (10),	Accounting information, determinant, disclosure, efektiveness, financial information, financial performance, financial reporting, financial statement, firm performance, governance, information asymmetry, information system, quality, uselfulness
3	(10)	Aritificial intelligence (25), bid data (10)	Accountant, accounting, artificial intelligence, big data, challenge, financial accounting, implementation, management accounting, non financial information, opportunity
4	(8)	Digital financial inclussion (10), Digital inclusive finance (15)	Digital finance, digital financial inclussion, digital inclusive finance, efficiency, entreprise, financial system, financing, SMEs
5	(5)	ITC (20)	Communication technology, development, digital economy, growth, ITC.

There is one cluster from this mapping that appears at least in keywords, namely clusters one to 5. This cluster covers topics on the digitization of accounting and finance, there are keywords that have not been widely exposed such as Blockchain technology, financial industry, information asymmetry, big data, digital inclusive finance.

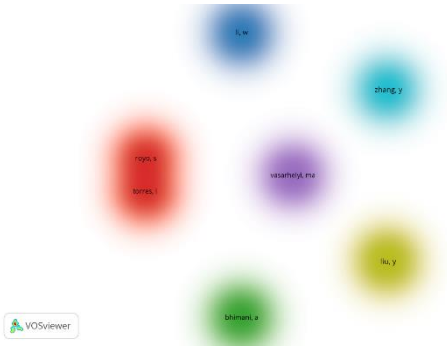

Figure 3. Author Analysis

Citation	Author and Year	Title
23688	[26]	The global city
10306	[27]	Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature
7933	[28]	Event studies in economics and finance
7613	[29]	A simple model of capital market equilibrium with incomplete information
7142	[30]	A resource-based perspective on information technology capability and firm performance: an empirical investigation
6651	[31]	Putting the enterprise into the enterprise system
6371	[32]	Why do people use information technology? A critical review of the technology acceptance model
4735	[33]	Networks: between markets and hierarchies
4581	[34]	Beyond computation: Information technology, organizational transformation and business performance
4403	[35]	The productivity paradox of information technology

In the time span from 1979 to 2023, it appears that documents on accounting and finance, especially on technology, are the most explicitly cited reference sources. However, the trend shows that more recent material is less likely to be cited, so future research could fill this gap.

Table 5. Keywords of most and least occurring terms

Most occurrences		Fewer occurrences	
Occurrences	Term	Occurrences	Term
272	Accounting	20	Firm Performance
149	Digital Finance	19	Digitalization
101	Development	18	Covid
94	Digital Technology	18	Customer
87	Information system	16	Effectiveness
66	Financial information	17	Financial Sector

64	Financial service	15	Financial Transaction
60	Financial Information	15	Financial system
59	Financial Service	13	Financial Industry
51	Financial Performance	13	Fintech
50	Entreprise	13	Financial Innovation
49	Financial Technology	13	Information asymmetry
49	Financial Inclussion	11	Digital economy
48	Financial technology	11	Blockchain Technology
44	Financial Reporting	10	Digital Inclusive Finance

The ultimate goal of this research is to identify variables that have the potential for further research in the future. Some of the keywords that may be relevant for future research are Blockchain technology, financial industry, information asymmetry, big data, and digital financial inclusion. The findings of this study provide insights into digitalization in accounting and finance. Moreover, the low frequency of occurrence in this study suggests that the potential for further research is very high in this regard.

CONCLUSION

The bibliometric analysis conducted in this study reveals the transformative impact of digital technologies on the field of accounting and finance. The findings highlight significant trends, influential authors, and key publications in this domain, which offer valuable insights into the evolving landscape in the digital age. The analysis shows a steady increase in publications over the years, indicating the growing importance of digital technologies in accounting and finance. Leading journals and conferences were identified as key platforms for disseminating research in this area. The author and institution analysis recognizes key contributors and institutions driving progress in this area.

Co-citation analysis uncovered core themes and notable publications, showcasing key areas of focus and influential works that shape the discourse on digital technologies in accounting and finance. In addition, the keyword analysis provides an understanding of the key concepts and topics discussed in the literature, reflecting the evolving digital technology landscape. Interdisciplinary relationships highlight the integration of digital technologies across different subfields of accounting and finance. The integration of technology in financial reporting, auditing, financial management, and risk assessment emphasizes the need for collaboration and knowledge exchange to harness the full potential of digital technology.

The findings from this bibliometric analysis have practical implications for practitioners, policy makers, and researchers. Practitioners can gain insights into emerging trends, best practices, and opportunities to leverage digital technologies in their organizations. Policymakers can utilize these findings to shape regulations and frameworks that accommodate the rapid changes brought about by digital technologies while ensuring ethical practices and financial transparency. For researchers, this analysis provides a foundation for further investigation, collaboration, and advancement in the field.

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