

ACCOUNTING AND MANAGEMENT CONTROL IN E-COMMERCE: THE STATE OF THE ART AND RESEARCH OPPORTUNITIES

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ABSTRACT

This work aims to analyse the state of the art of accounting and management control practices in companies that follow an e-commerce strategy. The methodology comprises a systematic literature review of the scientific production, from 2000 to 2023, in the Web of Science database. Using bibliometric techniques, temporal evolution and prominent authors, institutions, journals, and countries were identified, and the citation network was analysed. This research also analyses the structural knowledge groups and the scientific production specifically focused on accounting and e-commerce. Eighty-nine articles were analysed, most published between 2019 and 2023, with 2022 being the most evident and notable year in the number of articles published. The analysis shows that relatively few studies published in the last two decades focused on the importance of accounting and e-commerce, with a growing trend in recent years. The increased interest in studying the importance of e-commerce can be explained by the strategic role of a company in becoming innovative and more efficient and, on the other hand, the global pandemic experienced three years ago forced companies to adjust their business model. The keywords most used in the analysed studies align with this assumption. This document provides support and guidance for new researchers on this topic.

KEYWORDS: Accounting; Competitive Environment; Digital Trends; E-commerce; Management.

1. INTRODUCTION

The speed with which technology progresses in today's world imposes a new reality on economies, making technology platforms a vital means of disseminating knowledge and a channel for economic transactions, where companies and consumers reinvent business practices. For Ferrera and Kessedjian (2019), the new information technologies evolution, mainly the Internet (Laudon & Travel, 2017), has transformed businesses worldwide, providing the significant development of e-commerce and the global economy. Indeed, as stated by Bonzanini et al. (2020:1), the progress of Information and Communication Technology (ICT) "has dramatically transformed economic activity". Moreover, the development of e-commerce has been facilitated by the use of smartphones, which are readily available at a lower cost compared to a few years ago and therefore increased the popularity of online shopping (Oláh *et al.*, 2018). According to Simakov (2020), e-commerce is a specific form of innovative entrepreneurship that has gained significant benefits in goods trade due to the Internet's great potential.

However, from the perspective of Andonov and Dimitrov (2021), organisations can use technology not only to reach a larger target audience but also to increase the effectiveness and efficiency of work to acquire a good market position and image. According to Kwilinski (2019), scientific and technological progress was the impetus for new business methods aimed primarily at satisfying consumer needs, including monopolising sales markets, global competition, and the active development of information technologies. Oláh *et al.* (2018) argue that environmental,

social, and economic aspects are significant for the e-commerce sector, both for the producer and the consumer, allowing a company to build lasting customer relationships. Consumers are increasingly aware of environmental issues, so they call on companies to adopt green and sustainable solutions. With the Internet, companies can enter new markets and lead internationalisation, reaching customers worldwide (Andonov & Dimitrov, 2021).

Internet use has been transforming how an individual sees purchasing goods and services. This digital trend creates a more autonomous, intelligent, demanding, and informed consumer. Over the last decade, ICT has become more available to the public, both in terms of accessibility and cost. A turning point was reached in 2007, when the majority (55 %) of households in the EU-27 had access to the Internet. This share continued to grow, reaching 73 % in 2011, an increase of 3 percentage points compared to 2010 (Eurostat, 2015).

For Laudon and Travel (2017), e-commerce is inseparable from Internet technology. With the Internet, e-commerce is present virtually. However, for these authors, e-commerce is more than just business and technology. The third equation part for understanding e-commerce is society. E-commerce and the Internet have critical societal consequences that business leaders can ignore only at their peril. E-commerce has challenged our concepts of privacy, intellectual property, and even our ideas about national sovereignty and governance. Thus, e-commerce has been and continues to be an area where innovations are actively implemented and disseminated, so it is not only a form of innovative entrepreneurship but also an environment for testing and implementing innovations that promote e-commerce and innovative entrepreneurship in general (Simakov, 2020).

The relationship between e-commerce and accounting still needs to be clarified in the literature (e.g., Leyshon et al., 2005; Ahmad, 2013; Atanassova, 2018). So, this study aims to analyse the state of the art of accounting and management control practices in companies that follow an e-commerce strategy. The methodology comprises a systematic literature review from the Web of Science database. This article is organised into four sections. After the introduction, the second section describes the methodological procedures. The third section presents and discusses the bibliometric analysis. Finally, the main conclusions of the study, as well as its contribution and limitations, are drawn.

2. METHODOLOGY

Bibliometrics is a statistical tool for managing information regarding scientific and technological knowledge. Therefore, it can be defined as a set of empirical rules and principles that contribute to establishing the theoretical foundations of Information Science, based on quantitative processes of analyses scientific documents (Guedes & Borschiver, 2005). In this follow-up, Costa *et al.* (2012) define bibliometrics as a quantitative technique to measure knowledge production and dissemination indices, aiming to produce and monitor the development of different scientific fields, the patterns of authorship and publication, and the use of research results.

This type of analysis allows for exploring, generating, mapping, organising, and evaluating the scientific production of a given topic of study through bibliometric indicators for the research relevance and importance (Guedes & Borschiver, 2005). The scientific production evaluation is done through bibliometric indicators divided into Indicators of scientific quality (based on the perception of peers who evaluate publications by content), Indicators of scientific activity (allowing to record the scientific activity developed, namely the number of published works, the authors' productivity, the number of references between works and authors, among others); Indicators of scientific impact (measure the number of citations received, the impact factor of journals, the citation index and the influence of journals); and thematic associations indicators (for example, the citations and the references cited analysis) (Costa *et al.*, 2012).

Given the relevance of assessing journals' and authors' productivity, and identifying the most frequent keywords, it is necessary to consider the bibliometric laws, namely Bradford's Law (its focus is on the productivity of journals, i.e.,

identifying the most relevant journals in a given area of knowledge); Lotka's Law (the objective is in studying the degree of relevance and impact of authors in a specific topic); and Zipf's Laws (observes the automatic indexing of scientific and technological articles) (Guedes & Borschiver, 2005).

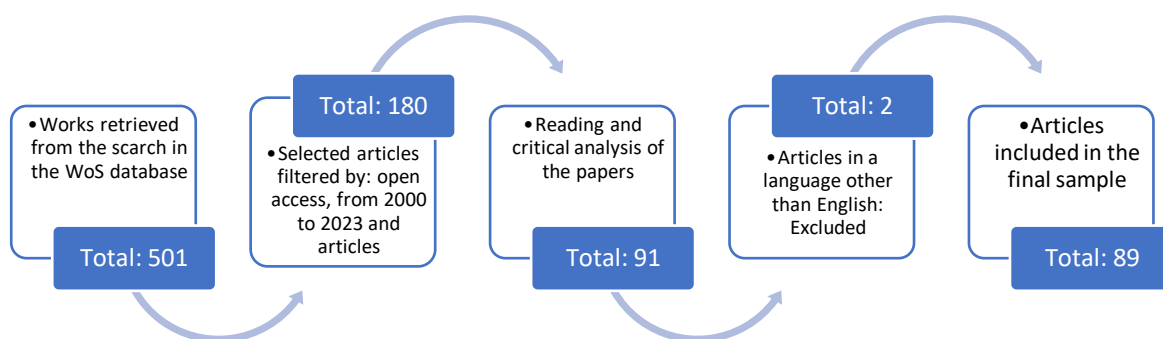
To conduct the document selection, the following research criteria were applied:

1. The articles were collected from the Web of Science.
2. The search included documents from 2000 to 2023 to analyse the most recent research.
3. The research focused on journal articles, rejecting other documents.
4. No filter was applied regarding the field of knowledge.
5. Only English articles were accepted.

The first search try was conducted on March 18, 2023. It was an advanced search (title, keywords, and abstract) with the combination of the following words: "management accounting" AND "e-commerce". Only a few results were generated since the search was done in quotes. Thus, it was decided to redefine the search, using the same words without quotes, resulting in 180 articles. These data were exported to a Microsoft Office Excel file. Then, the title and abstract of each of the 180 articles were read to check whether they addressed the research topic, which covers articles published in e-commerce related to accounting and management.

Finally, only 91 articles were identified as closely resembling the topic. However, two articles were excluded because they were not written in English (they were written in Russian and Ukrainian). Consequently, the final sample consisted of 89 articles (Figure 1).

FIGURE 1: The search process.



SOURCE: Developed by the author.

In this research, the four main bibliometric methods were used: citation analysis (number of times items cite each other), co-occurrence (number of documents that occur together), bibliographic coupling (number of references they share), and co-citation (number of times documents are cited together). Specifically, this study analyses scientific production by year, author, country/region, and organisations, as well as the most used keywords, as well as the most used keywords in the research topic, followed by an analysis of the most cited publications, authors, countries/regions, and organisations. This bibliometric analysis also includes Structural Knowledge Groups based on

the highest total link strength. At the beginning of this research, the objective was to analyse scientific production focused on e-commerce and management accounting. However, given the scarcity of research developed within the scope of these research topics, it was decided to extend the analysis to bibliography centred on accounting, management, and e-commerce. It was considered pertinent to analyse scientific production in accounting and e-commerce (12 in 89 papers).

Once the final sample was obtained, we analysed the data using VOSviewer software, specifically version 1.6.19. It was created by Nees Jan van Eck and Ludo Waltman CWTS Leiden University, Leiden, The Netherlands, aiming to create maps “based on network data and for visualising and exploring these maps” (Smyrnova-Trybulska et al., 2018, p. 381). This visualisation software package was adopted due to its powerful tool capable of generating maps to describe the links between each unit of analysis (Oliveira & Waltman, 2012).

Although other tools can be used to conduct bibliometric literature reviews (e.g., PRISMA-statement, SciMAT, Bibexcel, and Publish or Perish), VOSviewer was chosen because it has been widely used in previous studies and also because it presents an organised interface for visualising bibliometric networks (da Conceição Moreira *et al.*, 2020).

3. PRESENTATION AND DISCUSSION OF RESULTS

3.1. SCIENTIFIC PRODUCTION

3.1.1. EVOLUTION OF SCIENTIFIC PRODUCTION

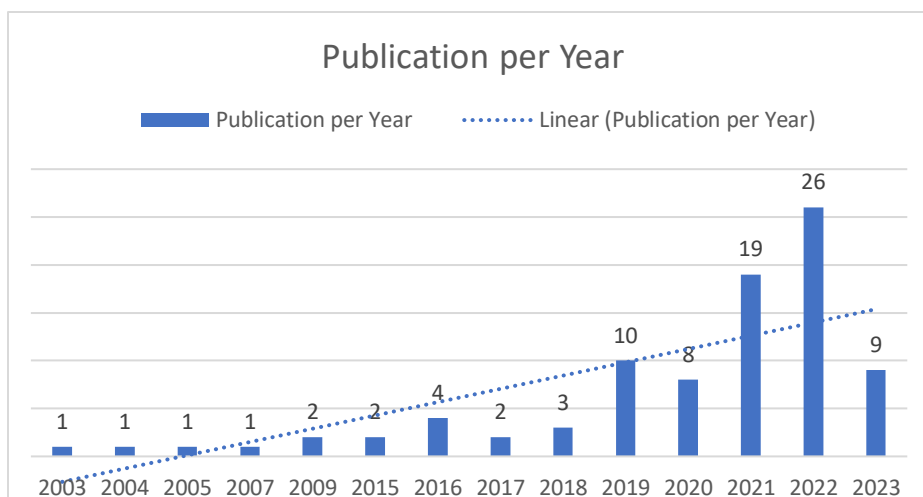
e-commerce had a visible growth during COVID-19. The closure of physical shops forced companies to create online shops. As we can see in Graph 1, it was only in 2019 that this topic began to gain momentum in the literature. This evidence confirms that, in the last four years, the role of e-commerce in companies has been promoted as a critical factor in fulfilling their objectives.

The first paper on the topic was published in 2003 by Ogasawara, Y, in JSME International Journal Series C-mechanical Systems Machine Elements and Manufacturing. Ogasawara’s (2003:9) paper, entitled “E-commerce and business models—(Business design capability becomes much more critical)”, alerts us “to the trend of technological development, highlighting the need to take a macro look at the meaning of the concept of business models, something that has become viewed in the ‘micro’ as patent-related issues”.

Graph 1 shows the chronological evolution of publications relating to e-commerce, accounting, and management themes from 2000 to 2023. This research topic has been gaining ground among researchers. However, until 2007, only an average of 1 article was published per year. Between 2009 and 2018, there was an irregular trend in publishing, with a maximum of four publications in 2016. As can be seen, the number of research on the topic increased significantly from 2019. Most of the articles were published in the last three years, precisely 54, so this topic’s trend is increasing. In fact, since 2021 there has been an increasing trend, with 2022 standing out as the year with the most publications. As the data analysed includes publications until March 18, 2023, the number of publications in 2023 is expected to exceed that obtained in 2022.



GRAPH 1: Time evolution of scientific production.



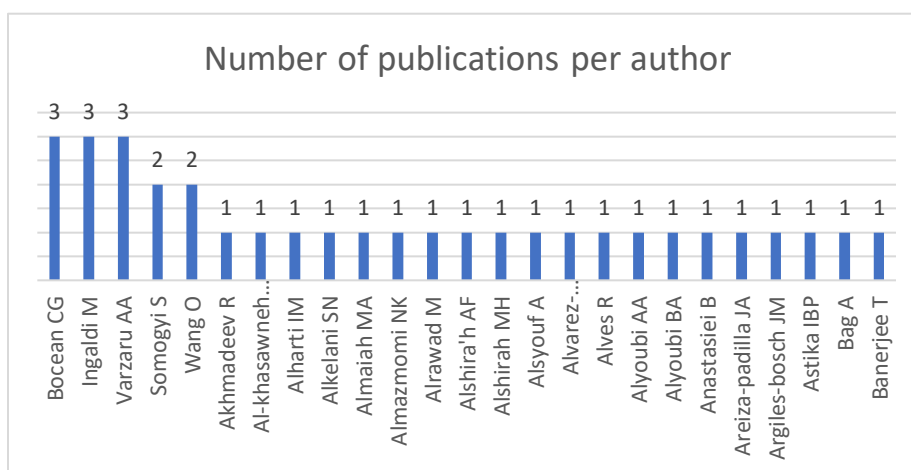
SOURCE: WoS database.

3.1.2. PUBLICATIONS PER AUTHOR

Regarding the number of publications per journal, the results showed that 60 journals published articles specifically on research topics. Sustainability (SCIE; SSCI) is the journal with the highest number of publications in the period studied, with nine articles, followed by the second and third journal, which is Mobile Information Systems (SCIE) and Electronics (SCIE), with four articles each, and the Journal of Theoretical and Applied Electronic Commerce Research (SSCI), IEEE Access (SCIE) and Baltic Journal of Economic Studies (ESCI), with three articles each. Nine journals have two publications, while the remaining 45 have only one.

In total, 266 authors were identified. The authors with the most publications are Bocean CG (3 articles), Ingaldi M (3 articles), and Varzaru AA (3 articles). Four authors have two publications, while the remaining authors have published only one article. As shown in Graph 2, it is evident that most of the authors (about 85%) have published only one article on the research topic.

GRAPH 2: Distribution of publications based on the number of author(s).



SOURCE: WoS database.

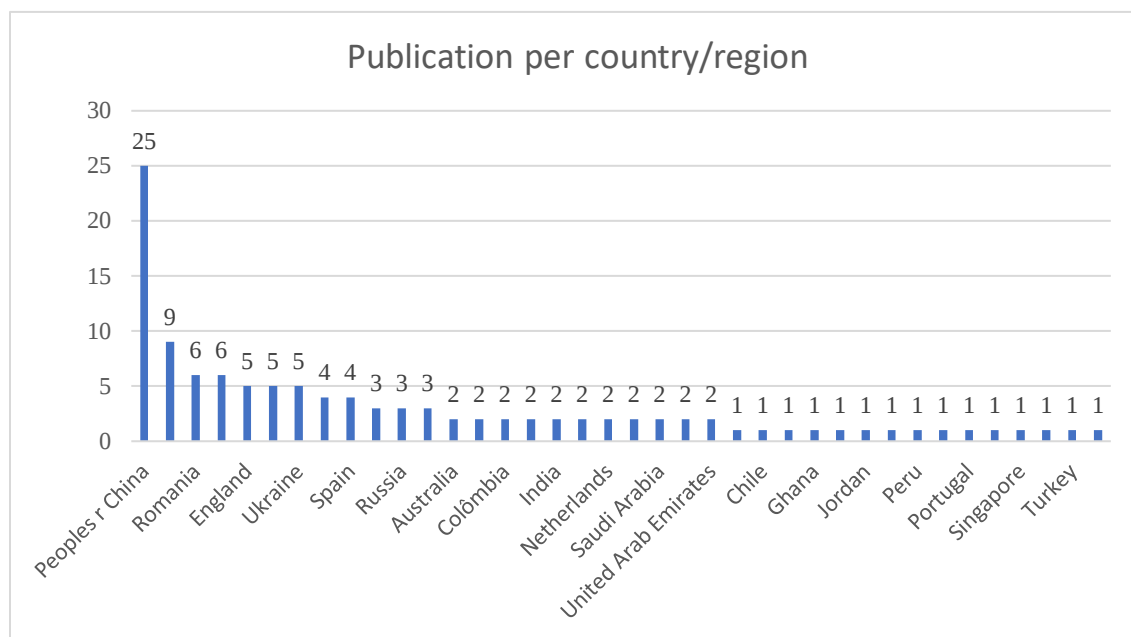
In addition, this research reveals that the number of single-authored articles is significantly lower than the number of articles produced by multiple authors.



3.1.3. PUBLICATIONS BY COUNTRY/REGION

Graph 3 shows the countries/regions with more than two publications in the timeline under study. Of 38 countries/regions with publications on the research topic, the People's Republic of China has the most publications in the area, with 25 publications. The second most published is Poland, with nine publications; Romania and Taiwan, with six; and England, Malaysia, and Ukraine, with five each. All other countries have less than four publications at the time of this research. In total, there are 15 countries with one publication. Most of the published studies on e-commerce (related with accounting and management areas) are concentrated in a developing country (China). The second country with the most publications is developed with an advanced economy and high living standards. However, the fact that the countries with the highest number of publications on research topics are developing countries (Taiwan and Malaysia, among others) may indicate a growing concern to transform companies' business models by adopting e-commerce for its numerous benefits. Plausible advantages could be that selling the product online will be available for purchase at any time of the day, every day of the week. This significantly increases sales and results, access to more customers, expansion into new markets, better position compared to the competition, and reduced costs for the business.

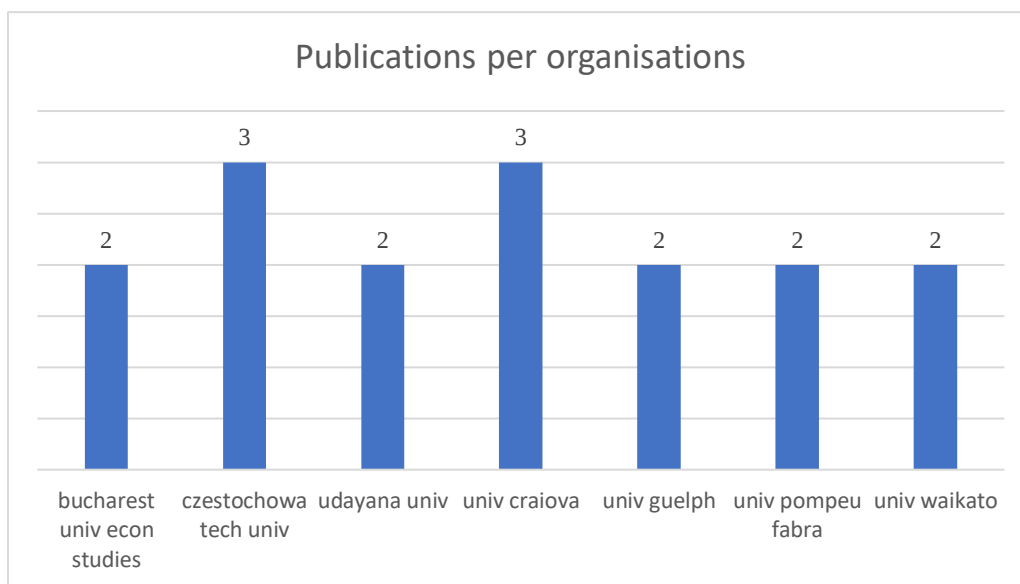
GRAPH 3: Publications by country/region.



SOURCE: WoS database and VOSviewer.

3.1.4. PUBLICATIONS PER ORGANISATIONS

Of 178 organisations with publications on the research topic, the Częstochowa University of Technology (Poland) and the University Craiova (Romania) stand out with three publications in the timeline under study. This is followed by another five organisations with two publications, as shown in Graph 4 below. The remaining 171 organisations published only one article in the research area.

GRAPH 4: Organisations with more than two publications.

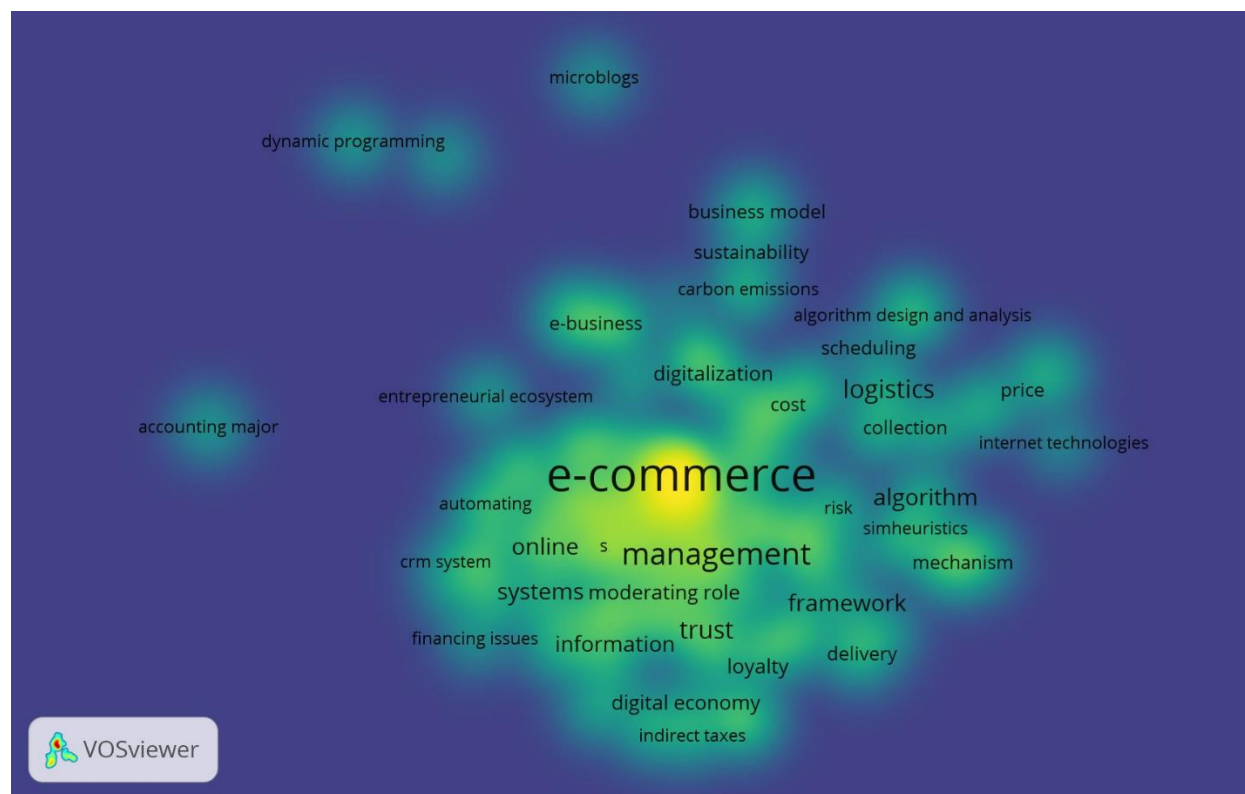
SOURCE: WoS database and VOSviewer.

3.1.5. MOST USED KEYWORDS

Graph 5 shows the frequency of the main keywords based on co-occurrence analysis. A minimum number of occurrences of a keyword (1) was established, resulting in a sample with 573 keywords.

After analysing the total occurrence of the keywords, it is concluded that the most used keywords were “e-commerce”, “Management”, “E-business”, “Digital Economy”, “Logistics”, “Business Model”, “Online”, and “Sustainability”, as shown in Graph 5. These keywords fulfil the research themes, representing e-commerce research trends.

Notably, “e-commerce” has 52 occurrences (total link strength: 495) since it constitutes a key point of the articles under analysis. This is followed by “impact” and “management” with 14 occurrences.

GRAPH 5: The most used keywords (visualisation by density).

SOURCE: WoS database and VOSviewer.

3.2. MOST CITED PUBLICATIONS, SOURCES, AUTHORS, COUNTRIES/REGIONS AND ORGANISATIONS

Table 1 presents the TOP 10 most cited articles published on the research topic. The most cited article, with 809 citations, was published by Zhu, K and Kraemer, K. L., titled “Post-adoption variations in usage and value of e-business by organisations: Cross-country evidence from the retail industry”. This work was published by Information Systems Research in 2005. In this paper, the authors analyse whether e-business usage and value are influenced by economic environments (technological, organisational, and environmental factors) and compare the results of the two sub-samples from developed and developing countries. The authors concluded that (1) “technology competence, firm size, financial commitment, competitive pressure, and regulatory support are important antecedents of e-business use”; (2) “both front-end and back-end capabilities contribute to e-business value and that back-end integration has a much stronger impact” (p. 61).

In second place, with 162 citations, is the article by Walczuch and Lundgren, published in 2004. The study emphasises the importance of trust in e-commerce from the perspective of consumers, identifying five groups of factors: personality, perception, attitude, experience, and knowledge. According to Walczuch and Lundgren (2004), these categories are determinants for consumer trust in e-commerce companies; however, perception-based factors are the main determinants in this variable.

The third most cited article, with 117 citations, entitled “Connecting Social Media to e-commerce: Cold-Start Product Recommendation Using Microblogging Information”, belongs to authors Zhao, W. X., Li, S., He, Y., Chang, E. Y., Wen, J. R., & Li, X. (2016). In the study, authors “propose a novel solution for cross-site cold-start product recommendation, which aims to recommend products from e-commerce Web sites to users at social networking sites in ‘cold-start’ situations, a problem which has rarely been addressed explored before” (p. 1147).

With 69 citations, in fourth place, is the article by Ruan and Durresi (2016): “A survey of trust management systems for online social communities—Trust modelling, trust inference and attacks”. The study investigated existing trust management systems for online social communities.

In fifth place is the article by Wang and Somogyi (2018), with 52 citations. The authors explored the impact of innovation adoption on the implementation of online food shopping by Chinese consumers. In addition, they examined consumers’ online shopping preferences by specific food categories and the segments of consumers who buy food online in China.

In sixth place is the study by Wang, Somogyi, and Charlebois (2020), with 50 citations. The objective of this research was to evaluate four e-commerce modalities: business-to-consumer (B2C), online-to-offline delivery (O2O Delivery), online-to-offline in-store (O2O In-store) and New Retail.

The article by Pagès-Bernaus, Ramalhinho, and Calvet (2019) is in seventh place, with 48 citations and studies the e-commerce activity and how it has evolved in recent years.

The article “Perceived Risk Factors Affecting Consumers Online Shopping Behaviour” is in eighth place, with 44 citations. This study was developed by Wai, Dastane, Johari, and Ismail (2019) and examines the impact of financial, convenience, non-delivery, return policy, and product risks on Malaysian online consumer behaviour.

Ingaldi and Ulewicz’s (2019) research, with 34 citations, aims to explore what standards online shops will need to meet to succeed and adapt to changing customer demands based on the Kano model and customer satisfaction.

Finally, in tenth place, with 32 citations, is the article “Efficiency-centered, innovation-enabling business models of high-tech SMEs: Evidence from Hong Kong”. The authors, Loon and Chik (2019), explore how small and medium-sized enterprises must innovate to differentiate themselves from their competitors, assessing their competencies around technology and innovation practices to become more effective and efficient.

The publications identified above have more than 30 citations. The remaining articles have 30 or fewer citations. It is important to note that In the TOP 10, no articles focus on e-commerce and accounting.

TABLE 1: TOP 10 articles with the most citations.

RO	AUTHOR(S)	YEAR	TITLE	TC
1	Zhu, K., & Kraemer, K. L.	2005	Post-adoption variations in usage and value of e-business by organisations: Cross-country evidence from the retail industry	809
2	Walczuch, R., & Lundgren, H.	2004	Psychological antecedents of institution-based consumer trust in E-retailing	162
3	Zhao, W. X., Li, S., He, Y., Chang, E. Y., Wen, J. R., & Li, X.	2016	Connecting Social Media to e-commerce: Cold-Start Product Recommendation Using Microblogging Information	117
4	Ruan, Y., & Durresi, A.	2016	A survey of trust management systems for online social communities—Trust modelling, trust inference and attacks	69
5	Wang, O., & Somogyi, S.	2018	Consumer adoption of online food shopping in China	52

6	Wang, O., Somogyi, S., & Charlebois, S.	2020	Food choice in the e-commerce era A comparison between business-to-consumer (B2C), online-to-offline (O2O) and new retail	50
7	Pagès-Bernaus, A., Ramalhinho, H., Juan, A. A., & Calvet, L.	2019	Designing e-commerce supply chains: a stochastic facility-location approach	48
8	Wai, K., Dastane, D. O., Johari, Z., & Ismail, N. B.	2019	Perceived Risk Factors Affecting Consumers' Online Shopping Behaviour	44
9	Ingaldi, M., & Ulewicz, R.	2019	How to Make e-commerce More Successful by Use of Kano's Model to Assess Customer Satisfaction in Terms of Sustainable Development	34
10	Mark Loon and Roy Chik.	2019	Efficiency-centred, innovation-enabling business models of high-tech SMEs: Evidence from Hong Kong	32

LEGEND: RO: Ranking Order; TC: Total Citations.

SOURCE: WoS database and VOSviewer.

Table 2 shows the ten most cited journals, authors, organisations, and countries/regions. According to Table 2, the most cited authors are Kraemer, K. L. and Zhu, K., with 809 citations. They are the authors of the most cited article, "Post-adoption Variations in usage and value of e-business by organisations: Cross-country evidence from the retail industry", published in 2005 in the most cited journal, Information systems research", with only one publication. Associated with the same authors is the University of California Irvine, the most cited organisation and the most cited region. Also, most publications in the area are in the USA, with 884 citations.

Next, the journals with the highest number of citations are "Information & Management", with 162 citations; "IEEE transactions on knowledge and data engineering", with 117 citations; "British food journal", with 102 citations; "Sustainability", with 71 citations; "Knowledge-based systems", with 69 citations; "International transactions in operational research", with 48 citations; "Journal of Asian finance economics and business", with 47 citations; "Asia pacific journal of management"; and "European journal of operation research", with 30 citations. The remaining journals have less than 30 citations (between 2 and 14).

Following the most cited are Lundgren H and Walczuch R, with 162 citations, authors of the second most cited article named "Psychological antecedents of institution-based consumer trust in e-retailing" and Zhao Wayne Xin, Li Sui, He Yulan, Chang Edward Y, Wen Ji-Rong, and Li Xiaoming, with 117 citations, authors of the third most cited article named "Connecting Social Media to e-commerce: Cold-Start Product Recommendation Using Microblogging Information".

It should be noted that although China has the highest number of published articles on research public ($n = 25$), the USA has a higher number of cited articles ($n = 884$). Moreover, although Netherlands and New Zealand are not among the countries with many publications, the two articles produced in each country were highly cited. On the other hand, despite the relatively high number of publications on e-commerce in some developing countries, such as Ukraine (5 articles) and Indonesia (3 articles), the number of citations from these countries received is not significant. One reason that explains this issue is that most of the articles from these countries were published in lower research impact journals (ESCI), which also contributed to the small number of citations they received.

TABLE 2: Top 10 most cited journals, authors, organisations, and countries/regions.

RO	SOURCES	TC	AUTHORS	TC	ORGANISATIONS	TC	COUNTRY/REGION	TC
1	Information systems research	809	Kraemer, KL	809	University of California Irvine	809	USA	884
2	Information & management	162	Zhu, K	809	University Maastricht	162	England	225
3	IEEE transactions on knowledge and data engineering	117	Lundgren, H	162	University Aston	117	China	211
4	British food journal	102	Walczuch, R	162	Highland Theological College	117	Netherlands	176
5	Sustainability	71	Zhao, Wayne Xin	117	University Peking	117	Taiwan	155
6	Knowledge-based systems	69	Li, Sui	117	Renmin University of China	117	Canada	117
7	International transactions in operational research	48	He, Yulan	117	University of Guelph	102	New Zealand	102
8	Journal of Asian finance economics and business	47	Chang, Edward Y	117	University of Waikato	102	Malaysia	69
9	Asia pacific journal of management	32	Wen, Ji-Rong	117	Indiana University and Purdue University	69	Poland	57
10	European journal of operational research	30	Li Xiaoming	117	University Dalhousie	50	Spain	56

LEGEND: RO: Ranking Order; TC: Total Citations.

SOURCE: VOSviewer.

3.3. STRUCTURAL KNOWLEDGE GROUPS

The Top 10 references cited with the highest total link strength (ascending order) are exhibited in Table 3. In a total of 4482 references, the study by Claes Fornell and David F. Larcker entitled “Evaluating Structural Equation Models with Unobservable Variables and Measurement Error” was the most co-cited with a total of 7 citations and 22 of the total link strength, which indicates the number of publications in which two keywords occur together. Fornell and Larcker’s study analyses the statistical tests used to analyse structural equation models with unobservable variables and measurement error. This indicates that a significant number of studies in this research area use the Structural Equation Model technique to analyse the relationship between unobserved variables.

In second place, with six citations and 17 total link strength, is the study by DeLone and McLean entitled “Information systems success: The quest for the dependent variable”. This study identified 43 specific variables that influenced different dimensions of the information systems success and organised these success factors into five categories based on Leavitt’s Diamond of Organizational Change: task characteristics, user characteristics, social characteristics, project characteristics and organisational characteristics.

The third-place article with five citations and 15 total link strength is the paper by William H. DeLone and Ephraim R. McLean, entitled “The DeLone and McLean Model of Information Systems Success: A Ten-Year Update”. This study aims to analyse research contributions on information systems success, specifically in research efforts that apply, validate, and propose improvements to the original DeLone and McLean model. Based on the contribution

evaluation, refinements to the model were proposed, leading to an updated DeLone and McLean IS success model for measuring e-commerce system success. This model is a framework and a model for measuring the complex dependent variable in information systems research (DeLone & McLean, 2003).

The fourth place, with six citations and 13 total link strengths, belongs to the study by William H. DeLone and Ephraim R. McLean, entitled “Measuring e-commerce success: Applying the DeLone and McLean information systems success model”. This publication presented an improved model, which can be adapted to the measurement challenges of the new world of e-commerce. The updated model’s six dimensions (system quality, information quality, service quality, usage, user satisfaction, and net benefits) is a parsimonious framework for organising the e-commerce success metrics identified in the literature. With two case examples (a big business of “bricks-and-clicks” of high profile and the other a small, traditional, regional retailer), the authors demonstrate and explain how the model can be used to guide the identification and specification of e-commerce success metrics (DeLone & McLean, 2004). The rest of the articles in the TOP 10 references cited have between 10 and 13 total link strength.

TABLE 3: Top 10 co-cited references with highest total link strength.

RO	CITED REFERENCE	TC	TLS
1	Fornell, C. and Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. <i>Journal of Marketing Research</i> , 18(1), 39–50.	7	22
2	DeLone, W. H. & McLean, E. R. (1992). Information Systems Success: The Quest for the Dependent Variable. <i>Information Systems Research</i> , 3(1), 60–95.	6	17
3	DeLone, W. H. & McLean, E. R. (2003). The DeLone and McLean Model of Information Systems Success: A Ten-Year Update. <i>Journal of Management Information Systems</i> , 19(4), 9–30.	5	15
4	DeLone, W. H. & McLean, E. R. (2004). Measuring e-commerce success: Applying the DeLone & McLean information systems success model. <i>International Journal of electronic commerce</i> , 9(1), 31–47.	6	13
5	Venkatesh, V. & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. <i>Management Science</i> , 46(2), 186–204.	5	13
6	Ajzen, I. (1991). The theory of planned behaviour. <i>Organisational Behavior and Human Decision Processes</i> , 50(2), 179–211.	3	13
7	Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y. & Podsakoff, N. P. (2003). Common method biases in behavioural research: A critical review of the literature and recommended remedies. <i>Journal of Applied Psychology</i> , 88(5), 879–903.	4	12
8	Podsakoff, P. M. (1986). Self-Reports in Organisational Research: Problems and Prospects. <i>Journal of Management</i> , 12(4), 531–544.	3	11
9	Zhu, K., & Kraemer, K. L. (2002). E-commerce metrics for net-enhanced organisations: Assessing the value of e-commerce to firm performance in the manufacturing sector. <i>Information systems research</i> , 13(3), 275–295.	3	11
10	Anderson, R. E., & Srinivasan, S. S. (2003). E-satisfaction and e-loyalty: A contingency framework. <i>Psychology & Marketing</i> , 20(2), 123–138.	3	10

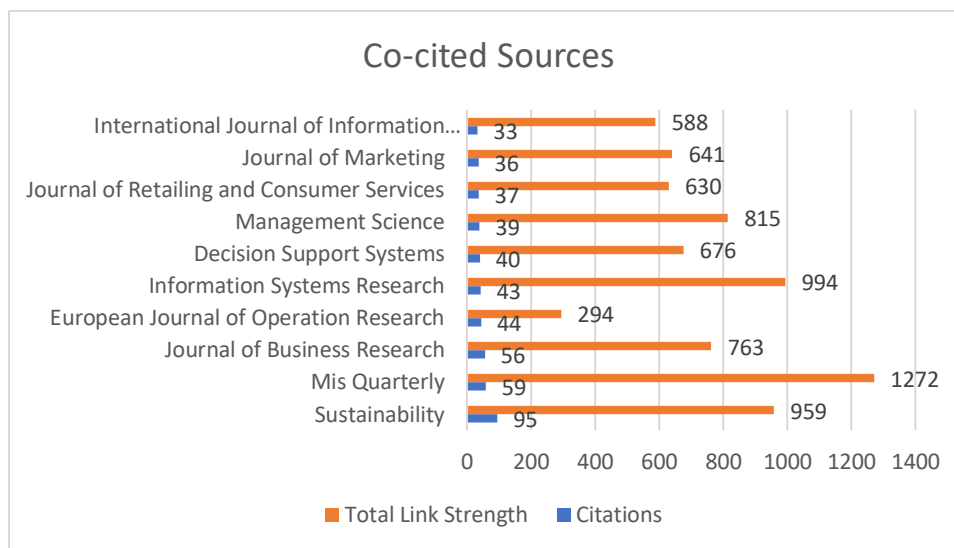
LEGEND: RO: Ranking Order; TC: Total Citations; TLS: Total Link Strength.

SOURCE: VOSviewer.



Graph 6 represents the most cited journals. Out of 2420 cited journals, the journal that stands out the most is Sustainability, with 95 citations and 959 Total link strength, which indicates the number of publications in which two keywords occur together.

GRAPH 6: Sources co-cited.



SOURCE: VOSviewer.

Finally, out of 3844 co-cited authors, DeLone stands out with 19 citations and 133 total link strength, indicating the number of publications in which two keywords occur together.

The most-cited author, DeLone W. H., holds three most-cited articles. His most cited publications were: (1) “Information Systems Success: The Quest for the Dependent Variable”, which aims to identify the factors that contribute to the success of information systems; (2) “Measuring e-commerce success: Applying the DeLone and McLean information systems success model”, which analyses the effect of information technology and the Internet on business operations in companies that are making significant investments in e-commerce applications; and (3) “The DeLone and McLean Model of Information Systems Success: A Ten-Year Update”, which investigates the research contributions of information systems (IS) success and the usefulness of the updated DeLone and McLean Success Model for measuring e-commerce system success.

The author Venkatesh V. has a publication entitled “A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies”. This research develops and evaluates a theoretical extension of the Technology Acceptance Model (TAM), which explains perceived usefulness and usage intentions regarding social influence and cognitive instrumental processes (Venkatesh & Davis, 2000).

The cited author Zhu K., with 12 citations, wrote one of the most cited articles: “e-commerce metrics for net-enhanced organisations: Assessing the value of e-commerce to firm performance in the manufacturing sector” with three citations and 11 Total Link Strength. This study developed a set of dimensions (information, transaction, customisation, and supplier linkage) to measure e-commerce capability in organisations with Internet access.

With only eight citations, the most cited author, Fornell wrote the most cited publication, with seven citations, entitled “Evaluating Structural Equation Models with Unobservable Variables and Measurement Error”. This research analyses the statistical tests used in structural equation models with unobservable variables and measurement

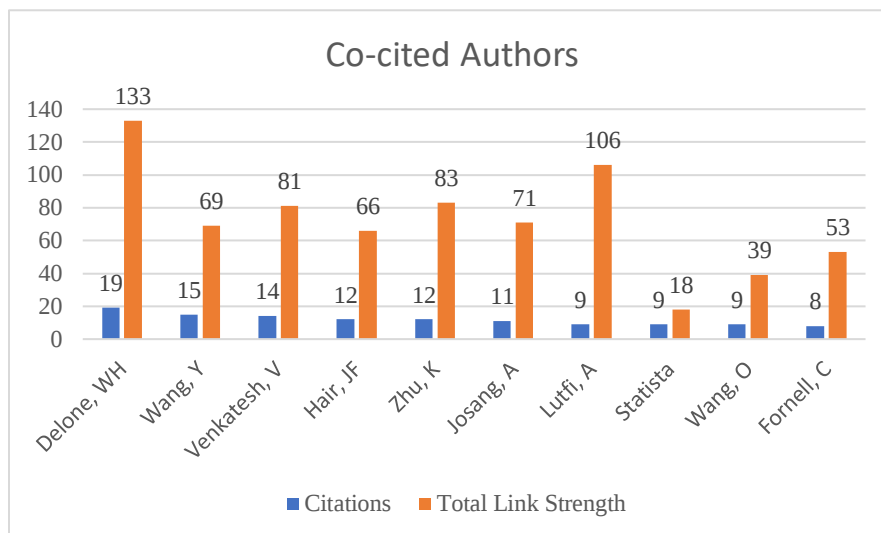


errors. This author is highly cited because most of the studies analysed apply structural equation modelling as a statistical analysis technique.

Wang Y, Hair, Josang, Lutfi, Statista, and Wang O, in the top 10 most cited references, are also co-cited authors, with citations and total link strength ranging from 18 e 106 citations and 9 and 15 total link strength. In addition, it should be noted that in the sample of 89 articles selected for the study, there are articles written by the most cited authors, Wang Y, Zhu, Lutfi, and Wang O. In particular, Zhu is the most cited author and wrote the article, in co-authorship, with the most citations of the sample under study, entitled “Post-adoption variations in usage and value of e-business by organisations: Cross-country evidence from the retail industry” published in the most cited journal “Information systems research” and in the most cited organisation, the University of California. This study, drawing on the literature on diffusion of innovation and resource-based theory, developed an integrative research model to assess the diffusion and consequence of e-business at the firm level to investigate further whether the usage and value of e-business are influenced by economic environments, by comparing two sub-samples across developed and developing countries (Zhu & Kraemer, 2005). From the sample under study, the article “Influence of Digital Accounting System Usage on SMEs Performance: The Moderating Effect of COVID-19”, was written by Lufti (2022) and, aims to explain that accounting information has served as a fundamental basis for business decision-making and its extensive use of digital technology has paved the way for the efficiency and effectiveness of accounting functions (Lutfi *et al.* 2022); and Wang O (2020) developed the article entitled “Food choice in the e-commerce era A comparison between business-to-consumer (B2C), online-to-offline (O2O) and new retail”, with the purpose of associating consumers’ motivations for food choice and sociodemographic characteristics with their attitudes and consumption towards food purchases in four e-commerce modalities: B2C, O2O Delivery, O2O In-store and New Retail; and “Consumer adoption of online food shopping in China”, aiming to explore the impact of innovation characteristics on Chinese consumers’ adoption of online food shopping (Wang *et al.* 2020).

Graph 7 highlights the most cited authors.

GRAPH 7: Top 10 co-cited authors.



SOURCE: VOSviewer.

3.4. SCIENTIFIC PRODUCTION ON ACCOUNTING

A detailed analysis of the sample of 89 publications was carried out to identify the articles specifically about the accounting of e-commerce business, resulting in 12 articles.

With the rise of internet use, the study by Shang *et al.* (2022) entitled “Analysis and Application of Enterprise Performance Evaluation of Cross-Border e-commerce Enterprises Based on Deep Learning Model” shows that a new business model based on information and networking technologies has emerged: e-commerce. The authors conducted an experimental analysis of e-commerce companies to measure their performance to “ensure the reliability of data and effectiveness of performance accounting” (p. 1).

The study by Zhou (2023), entitled “Financial model construction of a cross-border e-commerce platform based on machine learning”, analyses the financial risks and management problems that CBEC (cross-border e-commerce) platforms face, and therefore, these platforms need adequate supervision and protection against network risks. Artificial intelligence (AI) and machine learning (ML) are used to study the financial operations of CBEC platforms. The cross-border e-commerce (CBEC) financial platform can improve the information security of financial transactions and the accuracy of accounting. In the platform, the introduction of dynamic financial accounting is necessary for the financial management of the platform because, with accounting, the frequency of updating financial statements is reduced, making it easier to change information over time.

The article “Analysis on the strategy of improving management consulting business performance: Evidence on a management consulting company established by an accounting firm”, written by Lee (2021), discusses the main factors affecting management consulting business performance. Three regression models were developed to analyse business performance from the perspective of accounting firms and consulting firms. The research concludes that accounting firms should be encouraged to embrace e-commerce and digitalisation, including hardware/software upgrades, the deployment of invoicing programs and the adoption of auditing software for corporate financial reporting (Lee, 2021).

Collier and Lambert’s (2018) research aims to describe a method that supports identifying, assessing, and managing project risks under high levels of uncertainty using a scenario-based method. The innovation of this work is to develop a strategy to support risk management and cost-benefit decision-making by assisting in selecting management actions to reduce the impacts of disruptive scenarios. The authors value also “several management actions in mitigating project disruptions, accounting for benefits and costs” (p. 593).

The study by Dwirandra and Astika (2020) entitled “Impact of Environmental Uncertainty, Trust and Information Technology on User Behavior of Accounting Information Systems” aims to determine the relationship between environmental uncertainty, trust, and information technology behaviour in accounting information systems. Data were collected using two questionnaires (information technology managers and executives). Based on the results, it was concluded that information technology management is effective on organisational performance. It has been shown that with proper information technology (IT) management, uncertainty in IT implementation will be successfully resolved, and errors will be corrected earlier, which leads to lower costs and higher quality of IT services (Dwirandra & Astika, 2020).

Yang, Fan and Zhou’s (2022) research entitled “Borderless Fusion Financial Management Innovation Based on Speech Recognition Technology” reports that the current e-commerce financial management still uses the traditional accounting method, which is inefficient and cannot be integrated into new technologies. Therefore, according to the authors, this study proposes an integrated voice recognition system used for data collection and input in the workplace to improve the efficiency and performance of financial management (Yang *et al.*, 2022).

The authors Lutfi, Alkelani, Al-Khasawneh, Alshira'h, Alshirah, Almaiah, Alrawad, Alsyounf, Saad, Ibrahim (2022) wrote the article "Influence of Digital Accounting System Usage on SMEs Performance: The Moderating Effect of COVID-19" where they explain that accounting information is a fundamental basis for business decision making. The extensive use of digital technology has paved the way for the efficiency and effectiveness of accounting functions, i.e., a digital accounting system (DAS) allows the communication and processing of large amounts involved in transactions and generates the data necessary for analysis. A questionnaire survey was conducted on 183 SMEs in Jordan using the partial least squares structural equations statistical method to analyse the impact of using digital accounting on small and medium-sized enterprises (SMEs) (Lutfi *et al.*, 2022).

The relationship between business analytics and management accounting and cost performance was evaluated in Metin's (2021) study entitled "The Role of Business Analytics in Transforming Management Accounting Information into Cost Performance". The increase of internet-based applications affects cost accounting and management so business analytics can play an essential role in the effectiveness of management accounting.

According to Shi (2021), with e-commerce, there is no longer a need for face-to-face transactions between sellers and consumers. Therefore, the author's study entitled "Research on the influence of accounting computerisation and networking on e-commerce" explains that this has had repercussions on the traditional accounting sector, leading to the computerisation of accounting. However, the study concludes that computerisation improves the speed and accuracy of accounting information processing.

The study titled "New Development of Online Retail in China and the Associated (Accounting) Challenges" by Xiong, Chapple, Song, and Hui (2019) discusses and analyses the gradual development of online shopping in China, as well as the associated challenges, namely concerning accounting, such as application of accounting standards, deposit expansion, return postage insurance, and In-Store Pick-Up Service (Xiong *et al.*, 2019).

The study of Krupka, Nazarova, Pravdiuk, Myskiv, and Yevdokymova (2022), entitled "Electronic Settlements in the enterprise and their accounting and information support", aimed to analyse electronic payments, digitalisation of (non-cash) payments in international market businesses and accounting information, so that electronic transaction records automatically appear in the company's accounting system (Krupka *et al.*, 2022).

The article "Development of Electronic Commerce in Ukraine and in the world", authored by Stroiko, Burkun, and Mulenko, shows that with the growth of technology, the question of its proper use in every business entity, organisation and financial institution has arisen. The authors argue that developing information technology (IT) is the key to the sustainable financial growth of the country under study (Ukraine). With this, the creation of software for the finance and accounting of a company, namely EPR and CRM systems, facilitates human resources management, assets, and final product production (Stroiko *et al.*, 2020).

Table 5 shows the articles belonging to the accounting area.

TABLE 5: Total publications belonging to the field of accounting.

RO	AUTHOR(S)	YEAR	TITLE
1	Shang, H. J., Li, W. J., Li, G. X., Zhao, S., Li, L. & Li, Y. J.	2022	Analysis and Application of Enterprise Performance Evaluation of Cross-Border e-commerce Enterprises Based on Deep Learning Model
2	Zhou, K.	2023	Financial model construction of a cross-border e-commerce platform based on machine learning
3	Lee, C. C.	2021	Analysis on the strategy of improving management consulting business performance: Evidence on a management consulting company established by an accounting firm
4	Collier, Z. A. & Lambert, J. H.	2019	Evaluating Management Actions to Mitigate Disruptive Scenario Impacts in an e-commerce Systems Integration Project
5	Dwirandra, A. A. N. B. & Astika, I. B. P.	2020	Impact of Environmental Uncertainty, Trust and Information Technology on User Behaviour of Accounting Information Systems
6	Yang, L., Fan, Z. H. & Zhou, J.	2022	Borderless Fusion Financial Management Innovation Based on Speech Recognition Technology
7	Lutfi, A., Alkelani, S. N., Al-Khasawneh, M. A., Alshira'h, A. F., Alshirah, M. H., Almaiah, M. A., Alrawad, M., Alsyounf, A., Saad, M. & Ibrahim, N.	2022	Influence of Digital Accounting System Usage on SMEs Performance: The Moderating Effect of COVID-19
8	Metin, U.	2021	The Role of Business Analytics in Transforming Management Accounting Information into Cost Performance
9	Shi, W. Q.	2021	Research on the influence of accounting computerisation and networking on e-commerce
10	Xiong, F., Chapple L., Song, X. Y. & Hui, K. N.	2019	New Development of Online Retail in China and the Associated (Accounting) Challenges
11	Krupka, Y., Nazarova, I., Pravdiuk, N., Myskiv, L. & Yevdokymova, N.	2022	Electronic settlements in the enterprise and their accounting and information support
12	Stroiko, T., Burkun, V. & Mulenکو, A.	2020	Development of electronic commerce in Ukraine and in the world

LEGEND: RO-Ranking Order.

SOURCE: Developed by the author.

5. CONCLUSIONS

In this study, a bibliometric analysis of articles specifically focused on e-commerce (related to accounting and accounting areas) published from 2000 to 2023 in journals indexed in the WoS database was conducted, assessing the impact of authors, journals, countries/regions, organisations, and topics, as well as their temporal evolution, to systematise existing research. Eighty-nine articles were analysed, most published between 2019 and 2023, with 2022 being the most evident and notable year in the number of articles published. Thus, the analysis shows that relatively few studies published in the last two decades focused on the importance of accounting and e-commerce. Until 2015, only an average of one article per year was published. However, on the other hand, we observe a positive trend in the growth of scientific production on the subject.

We also found that the journals that have published the most articles on this topic are “Sustainability”, “Mobile Information Systems”, and “Electronics”, followed by “Journal of Theoretical and Applied Electronic Commerce Research”, IEEE Access, and Baltic Journal of Economic Studies. Although many authors have shown interest in the importance of e-commerce, they have yet to be particularly productive, as less than 20 per cent of them have produced more than one article. Bocean C. G., Ingaldi M. and Varzaru A. A. are the authors with the most publications on the subject. Similarly, China is the country that stands out in this research topic, as well as the organisation Częstochowa University of Technology (Poland) and University Craiova (Romania)

It was found that, in a total of 89 articles, the most used keywords were “E-commerce”, “Management”, “E-business”, “Digital Economy”, “Logistics”, “Business Model”, “Online”, and “Sustainability”.

The most cited article was written by Zhu, K & Kraemer, K. L., titled “Post-adoption variations in usage and value of e-business by organisations: Cross-country evidence from the retail industry”. It was published by Information Systems Research in 2005. This journal also has the highest number of citations. In this work, the authors analyse whether the economic environments impact e-business usage and value. “Information & Management”, University of California Irvine and USA are the journal, organisation, and region most cited, respectively.

Regarding the Structural Knowledge groups, the work “Evaluating Structural Equation Models with Unobservable Variables and Measurement Error” by Claes Fornell and David F. Larcker (1981) was the most cited and has the greatest total link strength, which indicates that there are studies related to statistical techniques of data analysis (Structural Equation Modelling) and correlation research, such as the multiple linear regression and logistic regression methods. Most studies are qualitative in approach, using content analysis and literature review. Interviews, surveys, and case studies are used to a lesser extent. Most empirical studies analyse e-commerce companies compared to traditional commerce companies. From a theoretical point of view, studies on e-commerce have been based on various theories commonly used in research on digitalisation, stakeholders, online trust, quality, e-commerce logistics (distribution network) and sustainable management.

Many studies have aimed to compare e-commerce with the traditional business model by identifying the differences. In this sense, e-commerce financing, logistics management, performance evaluation, type of technology used, and consumer behaviours have been analysed.

In this study, we found that the publications in the research area cited essential works, such as those by Fornell and Larcker, DeLone and McLean, and Venkatesh and Davis. These works are related to statistical data analysis techniques and use contingency theory as a theoretical framework and critical literature reviews to evaluate the processes within companies (managerial behaviour and organisation and market performance).

In conclusion, in the last four years, scholars have increased interest in studying the importance of e-commerce as a specific research topic. The interest in the topic can be explained by the strategic role of a company in becoming

innovative and more efficient and, on the other hand, by the pandemic experienced worldwide for three years that made companies must adjust their business model.

This study contributes to the e-commerce literature by carrying out a systematisation of existing research on the effect of e-commerce on firms' management control, assessing the characteristics (i.e., year of publication, authors, country of origin, journals, etc.) and impact of published articles, identifying the topics that have taken the most research attention and critically analysing the research that has been carried out on the topic.

Thus, this article aims to contribute to the scientific community, companies, and their most diverse professionals with an active role within or outside the research topic. Hence, conducting future research on other aspects of e-commerce and environmental sustainability is pertinent.

The results of this study are limited to articles published in journals indexed in the WoS database, which does not allow generalising the results since a specific database obtained the sample. This study focuses on the bibliometric analysis of the literature and not on the content analysis of the publications. The search trends were conducted manually.

However, using bibliometrics techniques proved adequate for identifying the essential characteristics of scientific production in e-commerce. The study can be adopted as a support tool for future researchers who show interest in the topic and intend to research it since it provides leading publications, prominent journals, authors, and organisations.

At the level of future lines of research, we identified the following research trends: (1) the impact of e-commerce on the environment (e.g. sustainable management); (2) the evaluation of the variables of the internet purchasing process (e-shop, communication and delivery); (3) consumer behaviour (trust in e-commerce); and (4) the factors contributing to the efficiency/quality of companies adopting the e-commerce business model (innovation, performance evaluation and reorganisation of activities).

In this study, we reinforce the importance of adopting e-commerce, with technological and digital evolution, for the survival and growth of public and private organisations and, consequently, for developing countries.

Our analyses only included the WoS database as a source of data collection. Other databases, such as Google Scholar and Scopus, should also be considered to analyse research on employee-related disclosure. To overcome this limitation, future studies could broaden the sample of research articles by selecting more databases to develop comparative studies based on different databases. Future research could also conduct a qualitative analysis to deepen the knowledge about this research area.

REFERENCES

- Atanassova, A. (2018). Accounting problems in e-commerce. *Ekonomiczne Problemy Usług*, 131(2/1), 19–30. <https://doi.org/10.18276/epu.2018.131/1Ĝ02>
- Bonzanini, O. A., Silva, A., Cokins, G., & Gonçalves, M. J. (2020). The interaction between higher education institutions and professional bodies in the context of digital transformation: The case of Brazilian accountants. *Education Sciences*, 10(11), 321. <https://doi.org/10.3390/educsci10110321>
- Collier, Z. A., & Lambert, J. H. (2018). Evaluating management actions to mitigate disruptive scenario impacts in an e-commerce systems integration project. *IEEE Systems Journal*, 13(1), 593–602. <https://doi.org/10.1109/JSYST.2018.2812864>

- da Conceição Moreira, P. S., Guimarães, A. J. R., & Tsunoda, D. F. (2020). Which bibliometric tool to choose? A comparative study between software. *P2P and Innovation*, 6, 140–158.
- DeLone, W. H., & McLean, E. R. (1992). Information systems success: The quest for the dependent variable. *Information systems research*, 3(1), 60–95. <https://doi.org/10.1287/isre.3.1.60>
- DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: a ten-year update. *Journal of Management Information Systems*, 19(4), 9–30. <https://doi-org.ezbusc.usc.gal/10.1080/07421222.2003.11045748>
- DeLone, W. H., & McLean, E. R. (2004). Measuring e-commerce success: Applying the DeLone & McLean information systems success model. *International Journal of electronic commerce*, 9(1), 31–47. <https://doi-org.ezbusc.usc.gal/10.1080/10864415.2004.11044317>
- Dwirandra, A. A. N. B., & Astika, I. B. P. (2020). Impact of environmental uncertainty, trust and information technology on user behaviour of accounting information systems. *The Journal of Asian Finance, Economics and Business*, 7(12), 1215–1224. <https://doi.org/10.13106/jafeb.2020.vol7.no12.1215>
- Eurostat (2015). Information society statistics. In [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Information society statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Information_society_statistics), accessed November 7, 2022.
- Ferrera, C., & Kessedjian, E. (2019). Evolution of e-commerce and Global Marketing. *International Journal of Technology for Business (IJTB)*, 1(1), 33–38. <http://dx.doi.org/10.5281/zenodo.2591544>
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, 18(1), 39–50. <https://doi.org/10.1177/002224378101800104>
- Krupka, Y., Nazarova, I., Pravdiuk, N., Myskiv, L., & Yevdokymova, N. (2022). Electronic settlements in the enterprise and their accounting and information support. *Independent Journal of Management & Production*, 13(3), 252–269. <https://doi.org/10.14807/ijmp.v13i3.1986>
- Kwilinski, A., Volynets, R., Berdnik, I., Holovko, M., & Berzin, P. (2019). E-commerce: Concept and legal regulation in modern economic conditions. *Journal of Legal, Ethical and Regulatory Issues*, 22, 1–6.
- Laudon, K. and C. Traver (2017). *E-commerce Business, Technology, Society*. Prentice Hall.
- Lee, C. C. (2021). Analysis on the strategy of improving management consulting business performance: Evidence on a management consulting company established by an accounting firm. *Asia Pacific Management Review*, 26(3), 137–148. <https://doi.org/10.1016/j.apmr.2020.12.002>
- Loon, M., & Chik, R. (2019). Efficiency-centered, innovation-enabling business models of high tech SMEs: Evidence from Hong Kong. *Asia Pacific Journal of Management*, 36(1), 87–111. <https://doi.org/10.1007/s10490-017-9558-4>
- Lutfi, A., Alkelani, S. N., Al-Khasawneh, M. A., Alshira'h, A. F., Alshirah, M. H., Almaiah, M. A., ... & Ibrahim, N. (2022). Influence of digital accounting system usage on SMEs performance: The moderating effect of COVID-19. *Sustainability*, 14(22), 15048. <https://doi-org.ezbusc.usc.gal/10.3390/su142215048>
- Metin, U. Y. A. R. (2021). The Role of Business Analytics in Transforming Management Accounting Information into Cost Performance. *Ege Academic Review*, 21(4), 373–389. <https://doi.org/10.21121/eab.1015665>

- Oláh, J., Kitukutha, N., Haddad, H., Pakurár, M., Máté, D., & Popp, J. (2018). Achieving sustainable e-commerce in environmental, social and economic dimensions by taking possible trade-offs. *Sustainability*, 11(1), 89. <https://doi-org.ezbusc.usc.gal/10.3390/su11010089>
- Oliveira, C. M., Oliveira, A., Ribeiro, A., Oliveira, J. & Northey, G. (2021). Artificial intelligence in marketing: a literature perspective. *Australas. Sign. J.*, 29, 252–263. <https://doi-org.ezbusc.usc.gal/10.3390/su14148754>
- Oliveira, J. J. & Waltman, L. (2012). *VOSviewer manual*; Univeristeit Leiden: Leiden, The Netherlands.
- Ogasawara, Y. (2003). E-commerce and Business Models (Business Design Capability Becomes Much More Critical). *JSME International Journal Series C Mechanical Systems, Machine Elements and Manufacturing*, 46(1), 9–17.
- Otley, D. (1999). Performance management: a framework for management control systems research. *Management accounting research*, 10(4), 363–382. <https://doi.org/10.1006/mare.1999.0115>
- Ruan, Y., & Durrezi, A. (2016). A survey of trust management systems for online social communities-trust modelling, trust inference and attacks. *Knowledge-Based Systems*, 106, 150–163. <https://doi.org/10.1016/j.knosys.2016.05.042>
- Shang, H., Li, W., Li, G., Zhao, S., Li, L., & Li, Y. (2022). Analysis and Application of Enterprise Performance Evaluation of Cross-Border e-commerce Enterprises Based on Deep Learning Model. *Mobile Information Systems*, 1–11.
- Shi, W. (2021). Research on the influence of accounting computerisation and networking on e-commerce. *EURASIP Journal on Wireless Communications and Networking*, 2021(1), 1–12. <https://doi.org/10.1186/s13638-021-02024-z>
- Simakov, V. (2020). History of the formation of e-commerce enterprises as subjects of innovative entrepreneurship. *Three Seas Economic Journal*, 1(1), 84–90. <https://doi.org/10.30525/2661-5150/2020-1-12>
- Smyrnova-Trybulska, E., Morze, N., Kuzminska, O., & Kommers, P. (2018). Mapping and visualisation: selected examples of international research networks. *Journal of Information, Communication and Ethics in Society*, 16(4), 381–400.
- Stroiko, T., Burkun, V., & Mulencko, A. (2020). Development Of Electronic Commerce In Ukraine And In The World. *Baltic Journal of Economic Studies*, 6(5), 216–220. <https://doi.org/10.30525/2256-0742/2020-6-5-216-220>
- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186–204. <https://doi.org/10.1287/mnsc.46.2.186.11926>
- Wai, K., Dastane, D. O., Johari, Z., & Ismail, N. B. (2019). Perceived risk factors affecting consumers' online shopping behaviour. *The Journal of Asian Finance, Economics and Business*, 6(4), 246–260. <https://dx.doi.org/10.2139/ssrn.3498766>
- Walczuch, R., & Lundgren, H. (2004). Psychological antecedents of institution-based consumer trust in e-retailing. *Information & Management*, 42(1), 159–177. <https://doi.org/10.1016/j.im.2003.12.009>
- Wang, O., & Somogyi, S. (2018). Consumer adoption of online food shopping in China. *British Food Journal*, 120(12), 2868–2884. <https://doi.org/10.1108/BFJ-03-2018-0139>
- Wang, O., Somogyi, S., & Charlebois, S. (2020). Food choice in the e-commerce era: a comparison between business-to-consumer (B2C), online-to-offline (O2O) and new retail. *British Food Journal*, 122(4), 1215–1237. <https://doi.org/10.1108/BFJ-09-2019-0682>

Xiong, F., Chapple, L., Song, X. Y., & Hui, K. N. (2019). New development of online retail in China and the associated (accounting) challenges. *IEEE Access*, p. 7, 39299–39304. <https://doi.org/10.1109/ACCESS.2019.2905694>

Yang, L., Fan, Z., & Zhou, J. (2022). Borderless Fusion Financial Management Innovation Based on Speech Recognition Technology. *Scientific Programming*, 1–12. <https://doi.org/10.1155/2022/3962255>

Zhao, W. X., Li, S., He, Y., Chang, E. Y., Wen, J. R., & Li, X. (2015). Connecting social media to e-commerce: Cold-start product recommendation using microblogging information. *IEEE Transactions on Knowledge and Data Engineering*, 28(5), 1147–1159. <https://doi.org/10.1109/TKDE.2015.2508816>

Zhou, K. (2023). Financial model construction of a cross-border e-commerce platform based on machine learning. *Neural Computing and Applications*, pp. 1–11. <https://doi.org/10.1007/s00521-023-08456-6>

Zhu, K., & Kraemer, K. L. (2002). E-commerce metrics for net-enhanced organisations: Assessing the value of e-commerce to firm performance in the manufacturing sector. *Information systems research*, 13(3), 275–295. <https://doi.org/10.1287/isre.13.3.275.82>

Zhu, K., & Kraemer, K. L. (2005). Post-adoption variations in usage and value of e-business by organisations: cross-country evidence from the retail industry. *Information systems research*, 16(1), 61–84. <https://doi.org/10.1287/isre.1050.0045>

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