

**A BIBLIOMETRIC ANALYSIS FOR AUDIT RESEARCH: EVIDENCE FROM ALGERIAN SCIENTIFIC JOURNALS PLATFORMS (ASJP)** **Abbar Mohammed <sup>(a)1</sup> Tahri El-aid <sup>(b)</sup> Mahmoudi Houcine <sup>(c)</sup> Roucham Benziane <sup>(d)</sup>**<sup>(a)</sup> Associate Professor, Faculty of Economics and Management, Bechar University, Algeria; E-mail: [abbar.mohammed@univ-bechar.dz](mailto:abbar.mohammed@univ-bechar.dz)<sup>(b)</sup> PhD Student, Faculty of Economics and Management, Bechar University, Laboratory MIFMA & LESLOD, Algeria; E-mail: [elaid.tahri@univ-bechar.dz](mailto:elaid.tahri@univ-bechar.dz)<sup>(c)</sup> Professor, Algerian-African Economic Integration Lab, Eco-Faculty, African University, Adrar, Algeria; E-mail: [houcine.mahmoudi@univ-adrar.edu](mailto:houcine.mahmoudi@univ-adrar.edu)<sup>(d)</sup> Professor, Faculty of Economics and Management, Bechar University, Algeria; E-mail: [roucham.benziane@univ-bechar.dz](mailto:roucham.benziane@univ-bechar.dz)**ARTICLE INFO****Article History:**Received: 22<sup>nd</sup> September 2022Accepted: 29<sup>th</sup> October 2022Online Publication: 17<sup>th</sup> November 2022**Keywords:**

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**ABSTRACT**

Addressing the increase of auditing in the current era, this study examines hotspots in auditing, research trends, and practical core works shaping this topic in Algeria since studies have yet to be conducted on the issue according to our specific orientation. By adopting a bibliometric analysis approach and searching with the keyword "audit" and its synonyms by different languages in the available cell allocated to the title within the database, Data (manuscripts) were automatically collected by author names, years of publication, titles, journals, abstracts and keywords up to 31st December 2021. The study input relies on 390 papers published in The Algerian Scientific Journals Platform (ASJP) from 2008 to 2021. The findings have shown a rapid increase in the number of publications, with a peak of 84 articles in 2021. The language commonly used was Arabic in (72 %) of the papers, and researchers performed their empirical contributions in sixteen countries, but the prevailing majority was in Algeria. Furthermore, The scientific landscape of auditing within accounting research is found to be fragmented into general classes: firstly, external audit (30%), secondly, internal audit (23%), while the scientific collaboration among authors was feeble and applied at (8.05%). However, the research with a specialized audit theme must be systematically adopted and developed in Algeria.

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**INTRODUCTION**

From antiquity to the Middle Ages, the renderings and control of accountancy existed in simplified forms. Accounting was studied more as a social phenomenon than a technical subject (Napier, 2001). The majority of historical accounting studies published by the middle of the 1980s, according to Anthony Hopwood, "adopted a rather technical perspective delineating the residues of the accounting past rather than more actively probing into the underlying processes and forces at work" (Hopwood, 1987) in his critique of historical accounting research. Later, they led to sophisticated and complex systems using several technical disciplines such as arithmetic, mathematics, statistics, modeling, artificial neural networks, etc.

The primitive control of accounts has developed throughout history via the effect of economic, social, and political requirements to shape several forms, including management control, audit of accounts, accounting review, internal audit, and so on.

Gradually, audit knowledge and practices are no longer limited to the economic field but embrace a set of scientific disciplines, from law to high technology through the social sciences. Don't we talk about legal audits (Brown, 1964), social audits (Carroll & Beiler, 1975), energy audits, and information systems audits (Ellis et al., 1993).

The first theory that covered the role of the audit profession in 1940 was called the Policeman theory (Mahdi, 2011); It considers the auditor as a police officer by assigning him the responsibility to seek, discover and prevent fraud.

However, the new era depicted specifically in the resurgence of accounting information and the technological progress made in the business world undermines the act of auditing financial statements fully; Each function of the company, every type of operation, and ultimately each piece of information become a potential object of audit such as purchasing,

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production, social audit, personnel audit, marketing audit. Hence, the audit covers analytical or synthetic information, historical or forecast information, quantitative, qualitative, or technical information, etc. in this stage the audit practices call and adapt several theories such as the Agency theory (Cano Rodríguez & Sánchez Alegría, 2012; Craswell et al., 1995; DeAngelo, 1981), the Game theory (Fairchild, 2007), the Regulation Theory (Baron & Besanko, 1984; Carey & Simnett, 2006), and the Signaling Theory (Casterella et al., 2006).

On the other hand, the widespread of fraud cases (fraud costs about 10% of an organization's income) and financial corruption led many financial community parties to increase attention towards corporate governance and the ways to improve the external audit quality at the international and local level, in an attempt to restore the confidence of financial information. (Fraser & Pong, 2009), In addition, the numerous corporate scandals and the global financial crisis push most nations now regulate auditing independently instead of through self-regulation (Hay, 2015).

These facts strengthen and valorize the audit practice and its positive impact on the output belonging to businesses or the economy in all; therefore, the audit topic has attracted a grown interest from many searchers and scholars across the world and has become a valuable subject for investigating under special or general dimensions with adopting modern qualitative or quantitative methods including bibliometrics approaches.

Unlike the former existing studies about our topic, which are specialized in a particular area using Bibliometrics in different famous databases, we would like definitively to broach the theme of audit exhaustively without specification for getting sufficient and respectful data from free new databases ASJP, in the same time taken on account the modernity of audit profession and practices in the young Algerian business environment.

To explore the publications by type, nature, author, and time in order to identify trends and the scientific perspective on the topic and optimize the future research path in the field, we will address the following question:

What do the researchers' scientific studies in the Algerian Scientific Journal platform regarding the audit theme look like?

This study contributes to expanding the current knowledge of audits in the Algerian context by accomplishing the following goals:

- Updating Researchers, Ph.D. students' knowledge, and practitioners of current Knowledge phenomena;
- Help decision-makers forecast auditing trends based on the present study's findings.
- By releasing a new statistic, we add pieces of information on audit to the academic body.

## LITERATURE REVIEW

The literature review revealed that most of the studies from the past two decades related various variables with auditing to gauge trends, identify metrics, and provide a comprehensive auditing framework, Numerous studies may use quantitative analysis methods like bibliometrics, mapping, and social network approaches in addition to qualitative analysis methods like literature reviews (LR), systematic literature reviews (SLR), and content analyses. In this study, we focused on reviewing previous studies that used only bibliometric analysis.

In this orientation, according to our exploration with different powerful search engines, no bibliometric Research was singled out exclusively for the audit topic; instead, bibliometric studies in this field try to link the issue with other variables like governance, sustainability..., and other studies focusing on a particular aspect of auditing as Internal audit and External audit.

To illustrate concretely, (Lamboglia et al., 2021) have mapped the conceptual knowledge structure linking digital technologies and auditing while, because of the increasing role that audit plays in corporate governance (Bao et al., 2020) have conducted a bibliometric study examined the relationship based on 3993 papers in the WOS (2002-2019). Several manuscripts adopting bibliometrics analysis have been published in the subsections of audit using either the known databases or the top journals of audit and accounting, like internal audit (Behrend & Eulerich, 2019), utilizing the five top accounting journals during 1926-2016.

Then (Pizzi et al., 2021), through a bibliometric study, linked digital transformation to an internal audit. However, a few studies have provided a bibliometrics analysis within the ASJP database concerning other domains of study.

We chose the bibliometric analysis method since no study has been interested in measuring auditing using qualitative or quantitative in the Algerian scientific context; the term "bibliometric" first emerged in the Journal of Documentation (Fairthorne, 1969). The statistical field of bibliometrics, sometimes known as scientometrics at times, focuses on quantitative analysis, the main tool of information science. It performs statistical data analysis, including the volume of journal article citations. In contrast to previous academic investigations, it provides an accurate assessment and broader research potential even though bibliometric analyses are becoming more common because they are still relatively new.

There are no studies that look at auditing using the Bibliometrics tool in the Algerian context right now. Therefore, our research aims to bridge this gap and address these issues by statistically unraveling this subject through bibliometric analysis.

To cover this matter, we will follow the bibliometrics analysis process as follow:

## MATERIALS AND METHODS

The Algerian Scientific Journals Platform contains 197 498 papers in its 777 journals and deals with 29 fields. Furthermore, it allows researchers to present their papers in 7 Languages.

Despite the massive amount of papers, our search, by many possible terms and several languages, had permitted us to count only met 390 articles studying "Audit."

Looking through the ASJP database, we have found that the first article written in the auditing field was published in 2008, and this was the starting point of the present study. Our method searched the keyword "audit" ....and its synonyms in the field assigned to the title and in different languages. Data were collected by author names, years of publication, titles, journals, abstracts, and keywords up to 31st December 2021.

We completed the database of the 390 papers by adding specifications that could help researchers, such as year of publication, journal or magazine affiliation, languages, nature of authorship (single, dual, or triple authorship), author's affiliation, country, nature of the study (theoretical or case study).

The following chart shows the approach used in our bibliometric analysis.

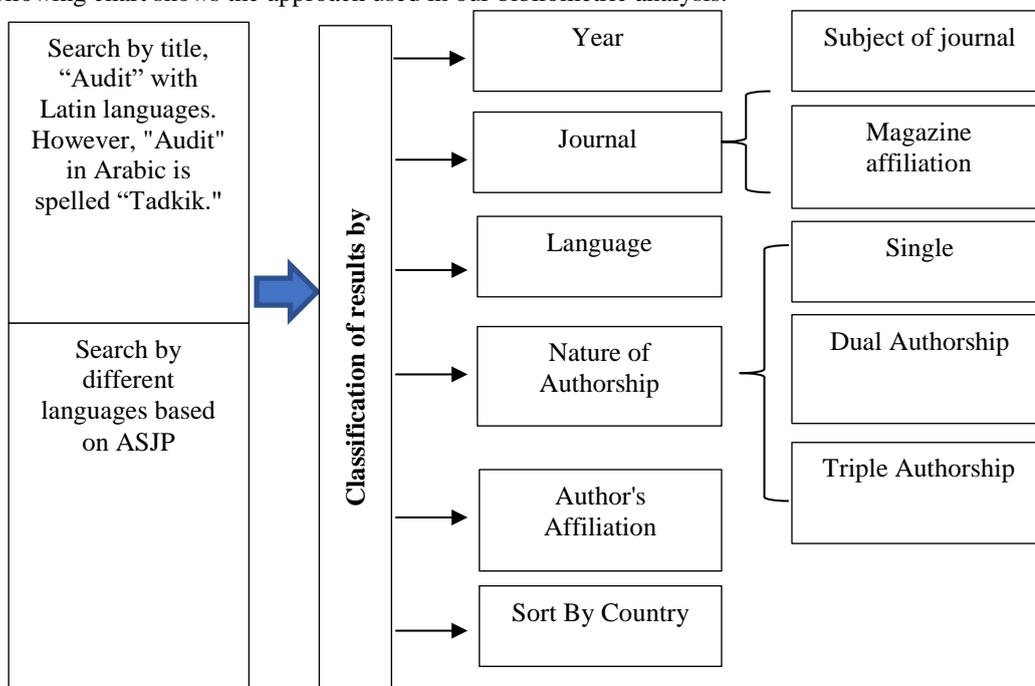


Figure 1. Methodology framework of Bibliometric process of Audit in ASJP

## RESULTS AND DISCUSSIONS

### Analysis by Year

The general trend of papers published in 2008-2021 is shown in Figure (2). The number of revision-related publications has increased continuously in the past decades. It should be noted that the number of papers has increased sharply since 2015, and this increase has greatly continued, reaching its peak in 2021 with 84 articles. The reason for this increase is due to an increasing interest among researchers in the field of auditing the availability of data.

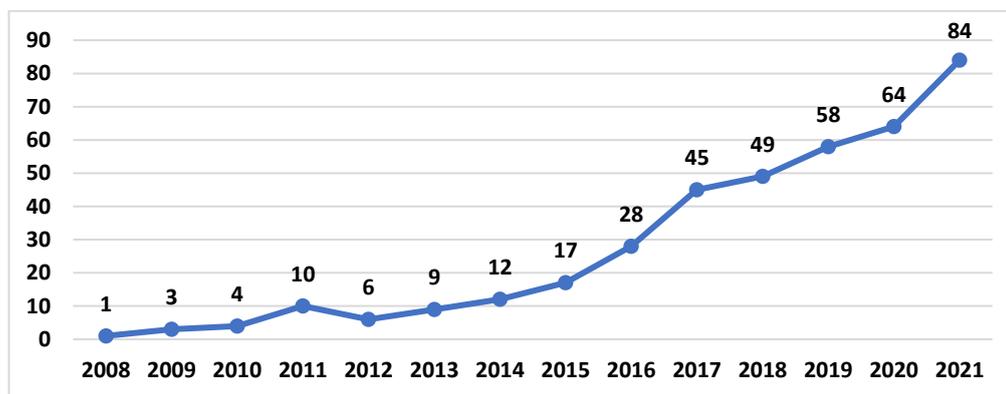


Figure 2. Yearly Evolution of publishing about Audit in ASJP during 2008-2021

Through the above Figure, we note that the scientific publication of topics related to auditing in the ASJP database began in 2008 with one article devoted to external review and the need to find a theory for it, so that scientific production witnessed an increase in terms of articles published in ASJP, reaching its peak in 2021 with 84 articles that dealt with different topics in auditing, both in terms of the studied problem and the type of audit in question. The following Figure shows the volume of the cumulative annual publication rate on the audit.

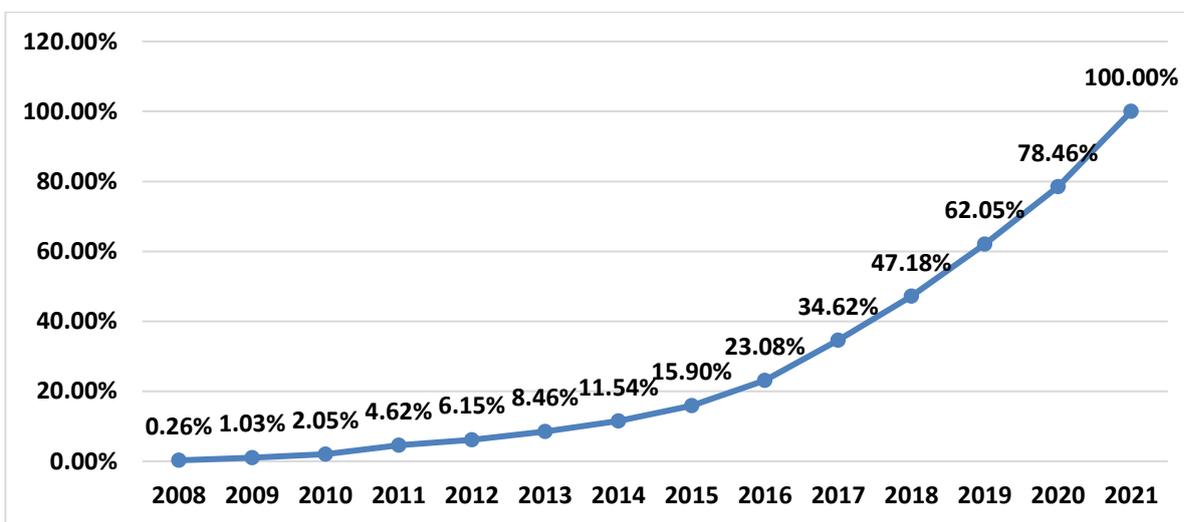


Figure 3. The cumulative annual rate of the publishing about Audit in ASJP during 2008-2021

According to the Figure above, annual publications have increased by 40,53% in the last Fourteen years.

**NB:**

$$CFAPI = (PLY/FYP)^{(1/Y-1)} - 1$$

- CFAPI= Calculation formula for annual publications increased
- PLY= Publications of the last year
- FYP= First year publications
- Y= number of years

$$CFAPI = (83/1)^{(1/13-1)} - 1 = 83^{0.077} - 1 = 40.53\%$$

**Analysis by Published Areas**

The scientific topics on which the largest number of publications have been written (see figure 4) are mainly external auditing with 117 papers equivalent to 30% of the total articles; this state refers to the availability of data retrieved from tasks of external auditors( as interviewees) which is imposed by law and followed by internal auditing with 91 articles or 23.33 %. In contrast, 10.26% of the articles were sample studies of the subject, combining internal auditing and corporate governance represented 41 articles.

The articles that combined internal auditing and risk management amounted to 22 scientific articles, at a rate of 5.64% of the total articles; this is due to the modernity of the internal audit profession in the Algerian business environment, which shed much ink on these issues.

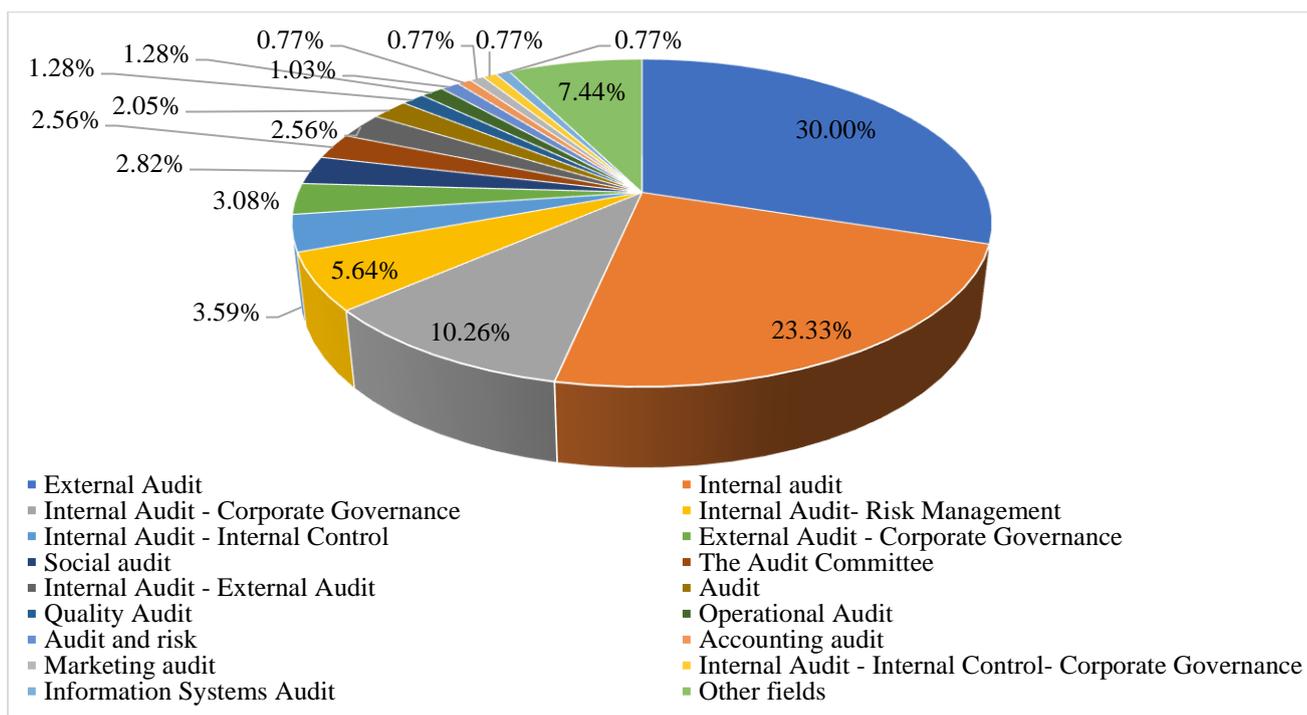


Figure 4. Classification of the publishing about Audit in ASJP during 2008-2021 By published areas

### Analysis by Language Used

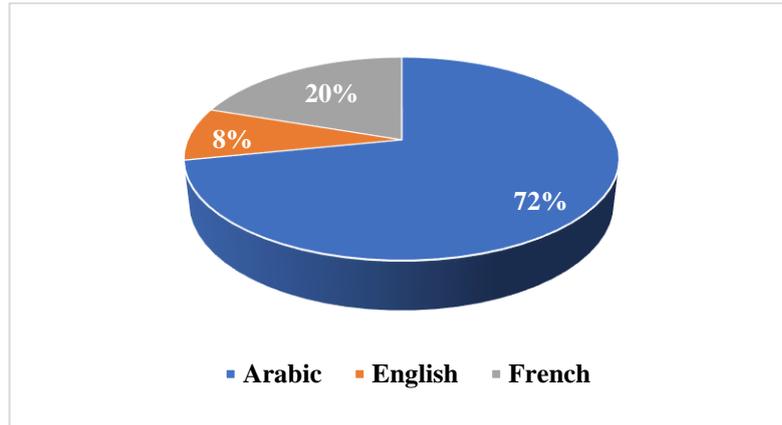


Figure 5. Classification of the publishing about Audit in ASJP during 2008-2021 By language used during

Through the graph, we note that 280 articles published in the audit field have been written in Arabic, which represents 72 % of the papers, followed by 77 articles written in French, which represents 20%. In comparison, 33 articles have been written in English, representing 8% of the total of the papers 390. The articles written in other languages do not give any privileges to the authors; furthermore, seldom or rarely are researchers that practice English extensively.

### Analysis by Approach Used (Theoretical / Empirical)

As every scientific study can be regaled with several approaches, i.e., theoretical or empirical, on the ASJP level, 70 % of researchers used the empirical approach. In comparison, 30% of them used a theoretical approach. Fig (6).

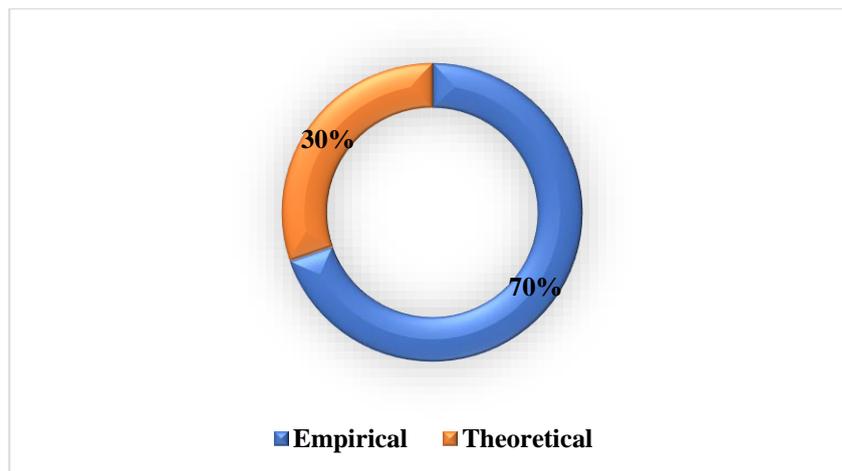


Figure 6. Classification of the publishing about Audit in ASJP during 2008-2021 By approach used

### Analysis of the Approach Used For the Case of Applied Empirical Studies

The analysis of the studies made in the field of an audit gives the following information:

- 271 papers used the questionnaire to collect information, representing 58.67% of the papers. The questionnaire was used for professionals and academics in the field of external or internal auditing according to the topic which is examined in the search problem,
- 60 articles adopted an analytical study to support the theoretical side, which represents 22.14% of the total experimental papers,
- 37 articles used a field institutional case study, which represents 13.65 %,
- 37 manuscripts based on audit analysis of relevant laws and regulations in the study country,
- 4 papers used the interview method to collect information that supports its theoretical side, which represents 1.48 % of the total experimental articles,
- One study used the biographical, analytical method.

We refer mainly to the high number of empirical manuscripts concerning the subject to the mastering tools of methodology by researchers and responding with practical cases give more chance to successful works.

The following Figure (7) shows the distribution of the method used in the experimental studies.

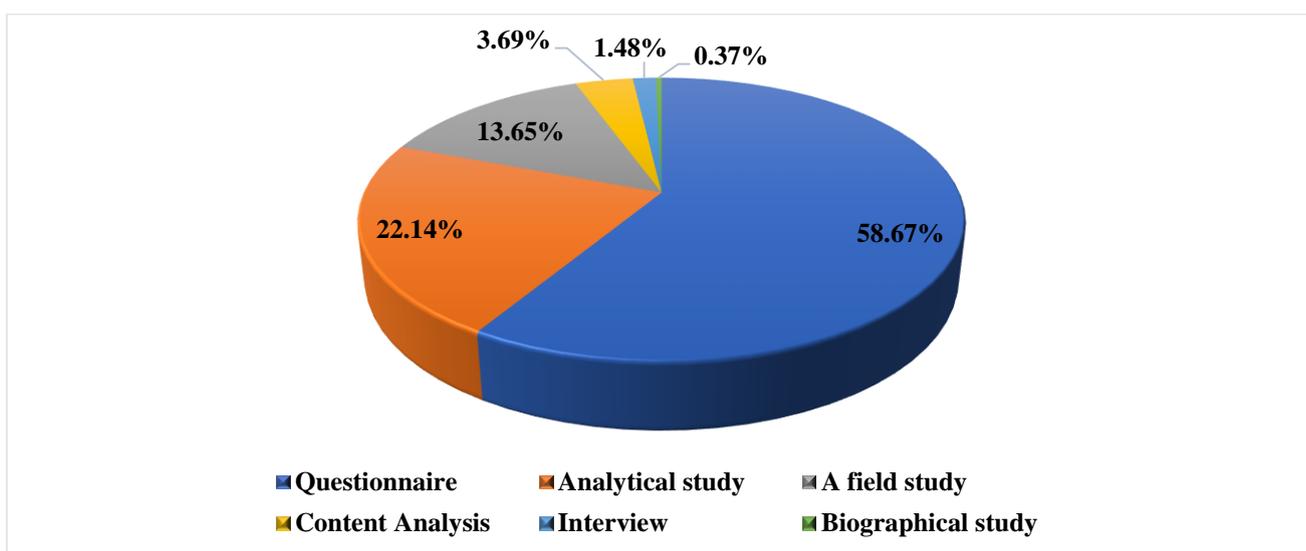


Figure 7. Analysis of the method used to collect information in empirical studies on Audit in ASJP during 2008-2021

#### Annual Progression of Empirical and Theoretical Studies

Although publishing in the field of auditing in ASJP is relatively recent, i.e., in 2008, interest in empirical studies has greatly increased from 2015, with 6 articles registered, including a case study, while the largest number of empirical articles in 2021 was 66 articles.

The period 2008-2021 also witnessed the publication of scientific articles of a theoretical nature in internal audit and governance, as well as internal audits based on risk. This makes the theoretical rooting and interpretation necessary for further research.

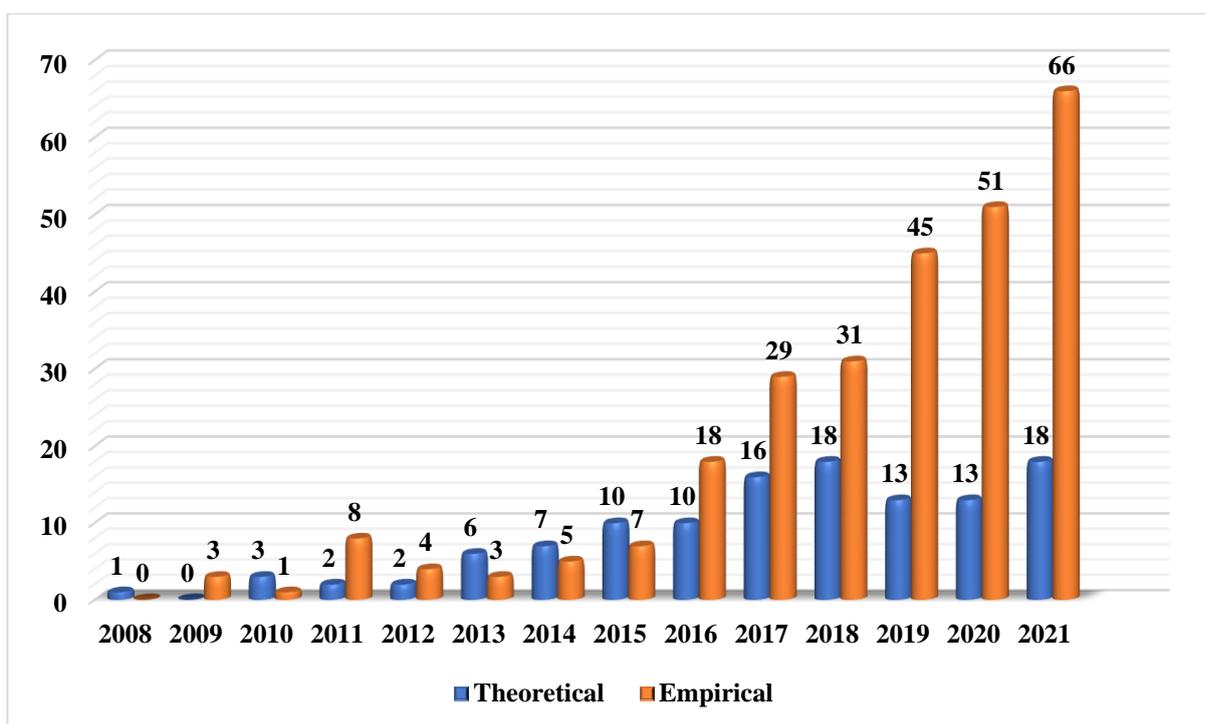


Figure 8. Yearly progression of empirical and Theoretical studies about Audit in ASJP during 2008-2021

#### Analyze by Country of Empirical Study

By analyzing the articles concerned with experimental cases, we note that the researchers made empirical contributions in fourteen countries with 271 articles. From the place of the event (ASJP), it is logical and expected that statistics show the majority of these empirical studies were completed in Algeria with 232 articles, equivalent to 86% of the total sample of papers in Algeria ASJP. In comparison, two articles studied the reality of external audits as a comparative study in some Maghreb countries.

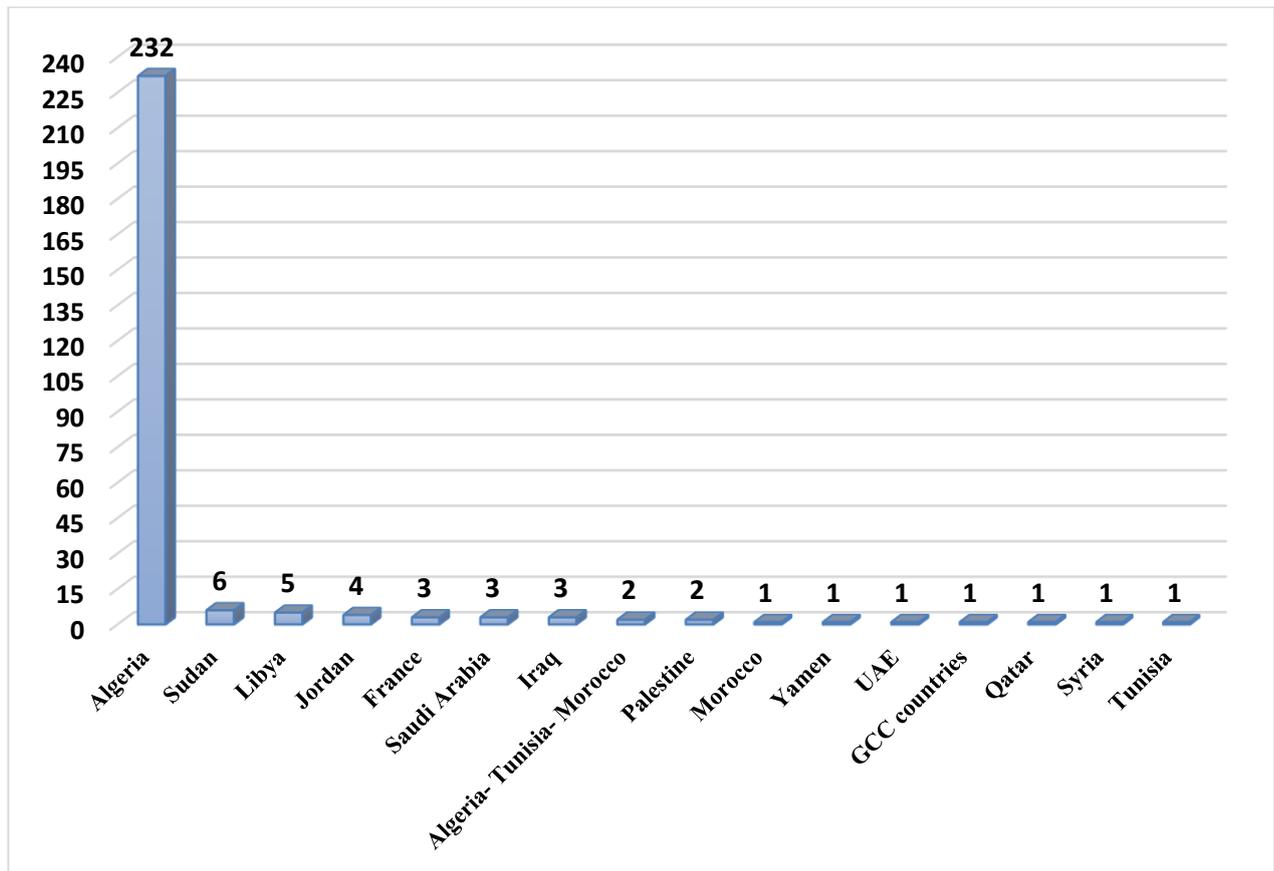


Figure 9. Geographical classification of publishing about Audit in ASJP during 2008-2021

#### Analysis by Nature of Authorship

Through this study, we noticed that 218 articles are double-authored, representing 56% of the total sample, followed by 120 articles with single authorship, equivalent to 31%. In comparison, 52 articles had triple authorship, representing 13%, as shown in the following Figure.

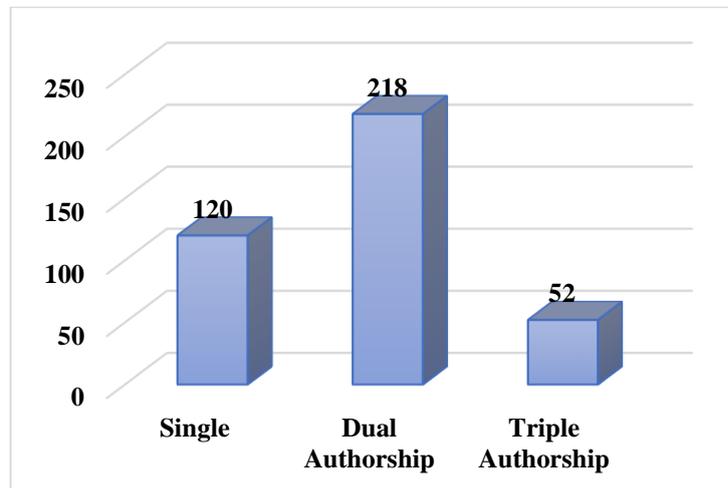


Figure 10. Nature of authorship classification of publishing about Audit in ASJP during 2008-2021

#### Analysis by Journal

From Figure (11) above, we notice that journals specializing in economics, accounting, finance, and auditing have published the largest number of articles related to auditing during the period 2008-2021. At the same time, the Journal of Economic Studies and Review of Economic Reforms and Integration into the World Economy and the Journal of Research in Finance and Accounting has published 11 articles each. The Journal of Economic and Financial Studies and Financial, Accounting, and Administrative Studies have issued 20 papers.

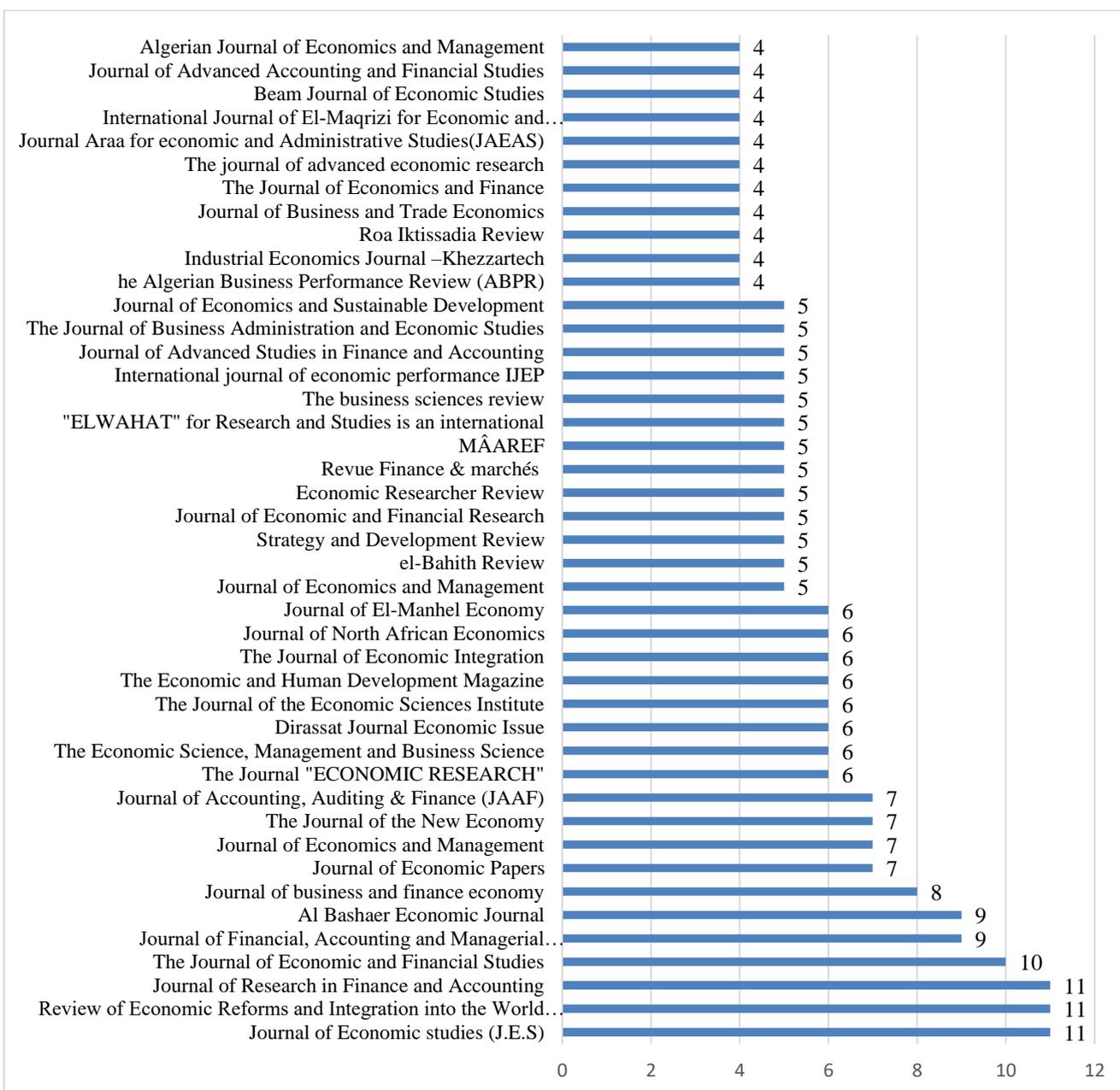


Figure 11. Publication Classification on ASJP Audits During the Period 2008 - 2021 According to the Highest Published Journals

**Analysis by Publishing University Institutions**

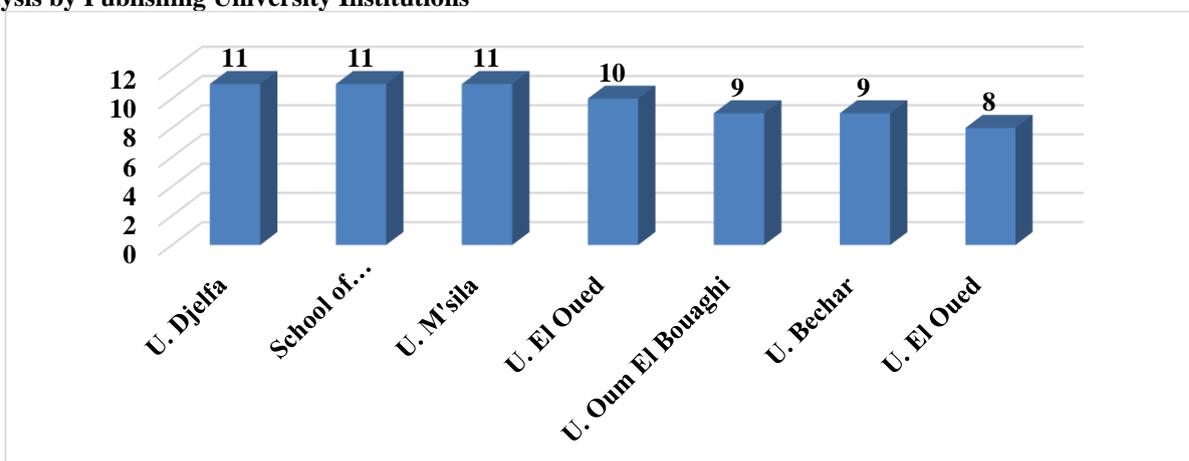


Figure 12. Classification of publishing about Audit in ASJP during 2008-2021 By affiliation of the most published magazines

According to the above Figure, the Journal of Economic Studies of the University of Djelfa has published the largest number of papers dealing with auditing i.e, 11 articles for the period 2008-2021. It was followed by the Higher School of Commerce in Kolea with 11 articles; the University of Milan published the same number in its Journal of Research in Financial and Accounting Sciences. On the other hand, the University of Oum El Bouaghi and the University of El Oued have published 10 articles in their issued magazines specialized in accounting and finance. Last but not least, 9 articles were published in the Al-Bashaer Economic Journal, edited by the University of Bechar.

### Analysis by Author Affiliation

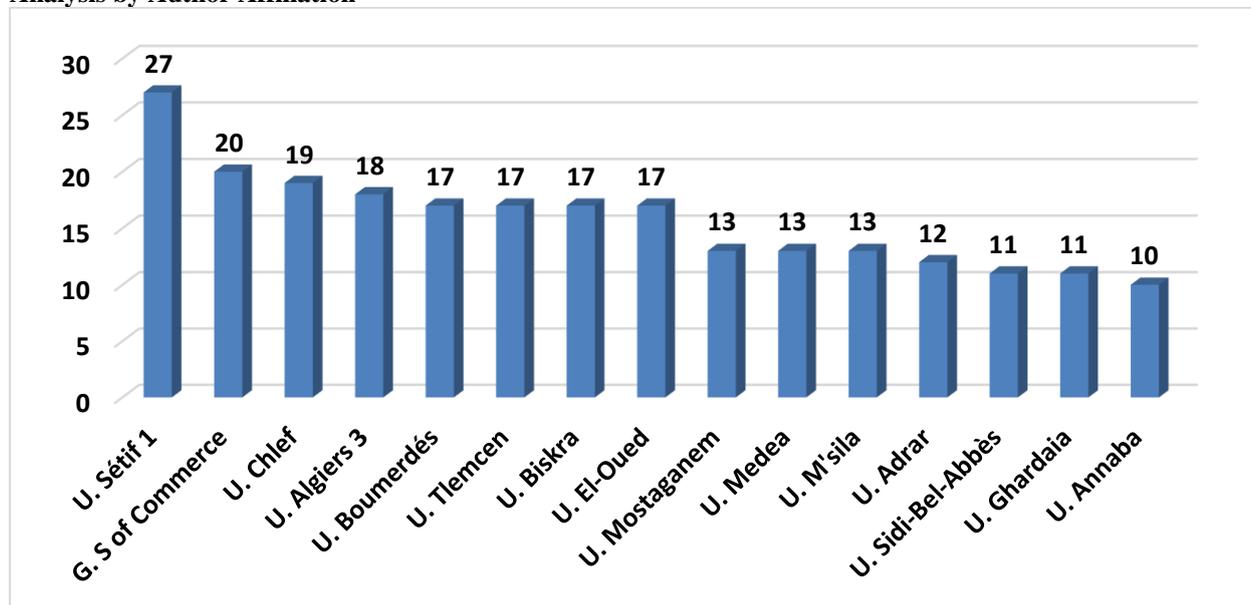


Figure 13. Classification of publishing about Audit in ASJP during 2008-2021 By affiliation of the most published magazines

According to the upper Figure, we notice that the most scientifically productive authors in the field of auditing belong to the University of Setif 1 with an average of 6.92% out of the total papers, i.e., 27 articles were published during the period 2008-2021, which reflect the interest related to the issue by researchers located in setif industrial zone followed by authors of the Higher School of Commerce with 20 articles, which represent 5.13% of the total articles issued.

However, authors affiliated with the University of Chlef have published 19 articles, equivalent to 4.87%. It is the same case as authors from the University of Boumerdes and the University of El Oued, who published 17 papers for each revue.

### Analysis by Authors

As far as authors, we count a total of 360 of them. Among these researchers, Souad Boutrik, affiliated with the Higher School of Commerce of Kolea, has contributed to 3 studies; 288 out of 360 authors, equivalent to 15.56% of publications, contributed two articles per author, while 352 authors contributed only one edition. This position does not reflect any disciplines and indicates that many authors must consistently research the field or that the topic is not among their primary research interests.

## CONCLUSIONS

In conclusion, the term audit is viewed generally according to its mode of intervention, the field of application, and its stages of Evolution; therefore, it is hard to ensure an exhaustive cover of audit topics. The field of audit has become plural because it depends on a certain number of factors, in particular, the matter to be audited, the position of the auditor, the dynamics of the profession, the periodicity, and the legal nature of the commitment.

Given the abundance of articles on auditing, it becomes rational and objective to analyze publications by type, author, nature, institute, and time to identify trends and optimize future research associated with the topic. In our paper, we choose the ASJP database to deal with bibliometric analysis related to articles that have studied the audit from the economic point of view. Our work consisted in reporting 390 publications carried out and edited during the period from 2008 to 2021. These papers were classified by year, area, language, approach method (theoretical or empirical study), authorship, journal, and author affiliation. Our first purpose was to facilitate research and avoid redundancy of the same subjects. The second and more important purpose was dual: to give statistics and information about papers performed in the ASJP database and help Ph.D. students and postdoc researchers easily find information sources, so gain time and effort.

The scientific publication of topics related to auditing in the ASJP database began in 2008, with one article devoted to external review.

The scientific production witnessed an increase in articles published in ASJP and reached its peak in 2021 with 84 articles

that dealt with different topics in auditing.

The language used was Arabic in 72 % of the papers, French at 20 %, and English in 8% of the total papers.

Researchers performed their empirical contributions in fourteen countries with 271 articles. Most of these empirical studies were completed in Algeria with 86% of the papers, while two articles studied the reality of external audit as a comparative study in some Maghreb countries. As far as authorship is concerned, 218 articles were double-authored, followed by 120 articles with a single author. We also note that most papers have been published in the *Journal of Economic Studies*.

Lastly, our findings permit us to classify the institution's authors by the number of publications: First, the University of Setif 1, second Higher School of Commerce, third university of Biskra, fourth university of Chlef, and the university of El Oued. Based on this study's results, it is concluded that research on audits is growing.

Therefore, research with the theme of specialized audit needs to be continuously developed, considering the shortage of research that discusses the issue amidst the increasingly complex business and corporate climate conditions. Therefore, given the need for more research addressing the issue in increasingly complicated business and corporate climatic conditions, research with specialized audits needs to be continuously developed.

### Recommendations for the Future

We suggest the following directions for researchers to consider:

- Using alternative methods of information measurement to assess "Audit."
- Exploring audit with qualitative analysis.
- Examining the field based on other databases

### Implications for Scientific Research and Society

This study provides important insights into recent trends in audit and has many implications for scientific research and society. This study will help academicians to explore new research opportunities (gaps, collaboration between authors, institutions, and countries). It could be a guide for Postdoc researchers and future Ph.D. students.

Our study has used performance analysis and mapping sciences for specific bibliometric variables (Author, Sources, Countries, etc.) with the most extensive descriptive.

**Author Contributions:** Conceptualization, A.M., T.E., M.H. and R.B.; Data Curation, T.E.; Methodology, A.M., T.E., M.H. and R.B.; Validation, A.M., T.E., M.H. and R.B.; Visualization, A.M., T.E., M.H. and R.B.; Formal Analysis A.M., T.E., M.H. and R.B.; Investigation, A.M., T.E. and M.H.; Resources, A.M., T.E. and M.H.; Writing – Original Draft, A.M., T.E., M.H. and R.B.; Writing – Review & Editing, M.H. and R.B.; Supervision, A.M.; Software, T.E. and R.B.; Project Administration, A.M. and R.B.; Funding Acquisition, A.M., T.E., M.H. and R.B. Authors have read and agreed to the published version of the manuscript.

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**Data Availability Statement:** The data presented in this study are available on request from the corresponding author. The data are not publicly available due to restrictions.

**Conflicts of Interest:** The authors declare no conflict of interest.

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