

Research on Quality Assurance in African Higher Education: A Bibliometric Mapping from 1999 to 2019

Lúis M. João, Patrício Langa

Abstract—The article reviews the literature on quality assurance (QA) in African Higher Education Studies (HES) conducted through a bibliometric mapping of published papers between 1999 and 2019. Specifically, the article highlights the nuances of knowledge production in four scientific databases: Scopus, Web of Science (WoS), African Journal Online (AJOL), and Google Scholar. The analysis included 531 papers, of which 127 are from Scopus, 60 are from WoS, 85 are from AJOL, and 259 are from Google Scholar. In essence, 284 authors wrote these papers from 231 institutions and 69 different countries (i.e., Africa = 54 and outside Africa = 15). Results indicate the existing knowledge. This analysis allows the readers to understand the growth and development of the field during the two-decade period, identify key contributors, and observe potential trends or gaps in the research. The paper employs bibliometric mapping as its primary analytical lens. By utilizing this method, the study quantitatively assesses the publications related to QA in African HES, helping to identify patterns, collaboration networks, and disparities in research output. The bibliometric approach allows for a systematic and objective analysis of large datasets, offering a comprehensive view of the knowledge production in the field. Furthermore, the study highlights the lack of shared resources available to enhance quality in higher education institutions (HEIs) in Africa. This finding underscores the importance of promoting collaborative research efforts, knowledge exchange, and capacity building within the region to improve the overall quality of higher education. The paper argues that despite the growing quantity of QA research in African higher education, there are challenges related to citation impact and access to high-impact publication avenues for African researchers. It emphasizes the need to promote collaborative research and resource-sharing to enhance the quality of HEIs in Africa. The analytical lenses of bibliometric mapping and the examination of publication players' scenarios contribute to a comprehensive understanding of the field and its implications for African higher education.

Keywords—Africa, bibliometric research, higher education studies, quality assurance, scientific database, systematic review.

INTRODUCTION

QA literature is increasing exponentially in knowledge production, as an emerging subfield of research within a broader field of HES in Africa. While there has been a growing stock of knowledge and research-based evidence on QA through research, monitoring, and evaluation of African higher education, QA research remains not widely accessible to policymakers and the larger public [3], [33], [46], [54], [58].

The scattered nature, organisation, and management of QA

knowledge, as in themes and approaches, has led to uninformed policy action to improve QA practice, especially in the African HE context [2], [27], [34], [42], [44], [54]. Therefore, this study seeks to produce a synthesised portrayal themes and approaches based on scientific publications on African QA.

The origin approach of the QA system in African HE was written in books 10 years ago, underlining the need of the agenda understanding into African context [15], [24], [33], [46], [54]-[56], [58]. In addition, it indicates the global trends of QA system in Africa. In the case of Africa, there are several studies describing how QA system was implemented at the institutional level. That is why the trend of internationalization of higher education in Africa is most limited. The present study looks back at the last 20 years, looking at what was introduced about QA.

The present study is the first attempt in which a bibliometric mapping approach is used to analyse the QA in African HES. Scholars as [4], [21], [47], [51], conducted research in different field of studies. These authors used bibliometric techniques to study other field of research. However, they did not produce bibliometric maps on QA in African HES.

The article reflects on scholars' research done on QA of HE in Africa. Specifically, the study analyses the knowledge production trends in QA research that influences the rise of literature on QA in HES in Africa.

The main objective of this article was to use bibliometric mapping and analyze the key features to the scientific production on QA in African HES, such as: number of publications per year, number of publications per country, number of publications per year per database, citation level of publications per database, and institutions & countries with most publications.

This study focuses on QA in HES research in Africa. The review employed science mapping [12], [48], an emerging method of systematic research review that uses quantitative analysis of bibliographic data to highlight the structure and dynamics of a knowledge base [60]. The study addressed the following research questions: What kind of research has been conducted on QA in African HES published from 1999 to 2019, and its implication on policy and practices in the African HE, what is the volume, growth trajectory, geographic distribution, the intellectual structure, and key topics describing the QA Knowledge production in Africa?

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II. CONCEPTUAL FRAMEWORK

The origin approach of the QA system is given to [15], [24], and strongly highlighted by [56] and [56]. In African HE, this origin approach of the QA system was written in books (articles) 10 years ago, underlining the need of the agenda understanding into African context [33], [46], [54], [58]. In the broadest sense, to ensure that standards of quality are met, QA is a comprehensive monitoring and evaluation process for various aspects of a project, service, or facility [7], [16], [24], [28].

According to scholars such as [8], [55] and [37], the notion of quality and its discourse about QA in higher education, was established to stay, globally to continental/regional and up to national levels.

The discourse of QA in Higher Education (HE) in Africa is based on challenges identified along the process, and actions required to forcefully move towards the construction of African higher education and research space (AHERS). Therefore, the research space plays an important to knowledge production in HE [45], [46].

The “volume”, “time”, “geospace”, and “composition” are the four dimensions considered in this study to review and analyze the QA Knowledge production in African HE [23].

Volume dimension concerns with the size as parameter to measure the QA knowledge production in HES. Therefore, size matters, when advancing theory and practice requires a critical mass of conceptual and empirical research, according to [32].

Time, as a critical dimension, plays a key role in analysing the size of the knowledge base, citation impact, and geographic distribution of studies. Adopting a longitudinal approach enables us to explore and understand the dynamics of how knowledge accumulates and evolves over time. Furthermore, a longitudinal approach reveals the 'research front' [60] or the most recent topics of interest in the literature.

The geographical location of studies, or spatial distribution, serves as a third dimension in this review and analysis. Research on quality assurance (QA) in African higher education from 1990 to 2010 has been notably sparse, as highlighted by [25], [34], and [61]. Between 2007 and 2013, Africa's contribution to the global research output averaged only 1%. Furthermore, as noted by [13] and [38], African universities consistently rank at the lower end of major global university ranking league tables.

The fourth dimension of the knowledge base is composition. Studies' conceptualization, such as types of papers, topics, lines of inquiry, theoretical models, research methods, and intellectual structure can be done using composition dimension. This four-dimensional framework was used to organize this review of the African knowledge base in the QA in African HE research. This synthesis of African scholarship updates and extends findings from prior reviews on the first three dimensions of size, time and space (e.g., [10], [23], [35]). In addition, empirical analysis of the intellectual structure and identification of the research front in the QA in African HE research presented in this review, represent a significant advancement in the field.

III. METHOD

Science mapping has been used in other disciplines (e.g., [60]) but the practice has not been adopted as widely in published articles about QA in African HES. Thus, this article provides a discussion of methodological challenges approach.

Through a research methodology that uses systematic literature review and bibliometric analysis, we have gathered information over a 20-year period (1999-2019) from WoS, Scopus, AJOL, Google scholar, as way to map the emerging field of research on QA in Africa.

Increasingly, data syntheses based on social network analysis are being used to illuminate structural and relational features of the knowledge sciences across different disciplines (see [18] and [60]). In recent reviews of QA research, advanced bibliometric analyses are only now appearing (e.g., [53], [59]). Our methodology has also been briefly discussed and similarly related in [4], [21], [23], [47], and [51].

Bibliometric Research

In the study, bibliometric tool was used to analyze knowledge production trends in QA research in the African context, and to highlight its impact in the HE sector. Furthermore, the bibliometric analysis and Social Network Analysis (SNA) disclose the nodes on QA research in African HES.

The application of statistical analysis to the bibliographic production [13], [23] is characteristic of the bibliometrics, while literature reviews are concerned with collecting publications on a specific topic from scientific databases.

Recently, bibliometric analysis has been extensively utilized to review various fields of research. However, its application to Higher Education Studies (HES) remains comparatively underexplored [2], [10], [20], [22], [52]. In basic bibliometric analysis, descriptive statistics are used to present biographical trends within an area of knowledge. Nevertheless, scholars such as [11] and [41], have used bibliometric content analysis to identify the topics and methodology used by scholars publishing in QA related journals in Africa. Like descriptive statistics, citation analysis has been used to analyze patterns in the bibliography of knowledge production by scholars from all continents [12], [23], [26], [59].

Identification Sources in the Bibliometric Research

The sources for studies in the knowledge sciences applied for the present study are WoS, Scopus, African Journals Online (AJOL), and Google Scholar. These four databases were chosen based on the following scope of coverage.

According to Elsevier, Scopus is the world's largest abstract and citation database for peer-reviewed literature and quality Web sources [6]. The Scopus coverage includes the life sciences, health sciences, physical sciences, and social sciences subject areas. The database contains citations and abstracts from more than 4,000 journals, conference proceedings, trade publications, and series books. In addition, it also includes articles in press, patent records, and Web sites [6]. Using the Scopus database, researchers can search both forward and backward in time for Scientific, Technical, and Medical (STM)

journal articles. The database can be used for collection development as well as for research [9].

In the other hand, research performance can be evaluated and analyzed using WoS, an online platform that provides bibliographic and information analysis databases with a focus on the social sciences. Moreover, it offers a set of analytical tools enabling the execution of specific and precise searches [31].

The International Network for Availability of Scientific Publications (INASP) launched the AJOL in 1998 as the largest African database. The database provides access to scientific information published and ongoing in Africa, expands the knowledge of African scientists, and supports the publication of African scientific journals [5]. The overall aim of AJOL is to raise the visibility of African journals and to include all journals published in Africa in the database making the table of contents of these journals available to researchers. The AJOL aim is being pursued vigorously, with 63 titles from 17 countries already available [43]. AJOL offers free access to the contents of African academic publications [49].

Google Scholar provides access to scholarly literature through a searchable database. Researchers and journal articles on nearly any topic of interest can be found on this site. Google Scholar, currently in beta version since its introduction, functions as a resource that allows users to search specifically for interdisciplinary scholarly information across a wide range of publishers, universities, professional societies and institutions, for free across the Web [19]. Scholarly information can be found using Google Scholar, a free citation resource available online [19]. Despite Google Scholar's ability to retrieve even obscure information, its use is limited by citation information that's not kept up to date, as well as inadequately structured [17].

Among these four indexes, Google Scholar offers the most comprehensive coverage of relevant sources. However, not all sources in Google Scholar are peer-reviewed [40]. In addition, Google Scholar provides limited bibliographic data for software packages to analyze [60].

The Scopus database offers a more comprehensive coverage of relevant, peer-reviewed journals than WoS, and provides a more complete bibliographic data than Google Scholar [60]. A bibliometric analysis and VOS viewer visualization of QA in African HES research was conducted using Scopus database as the recommended index.

Methodological Procedures and Challenges to Conduct Bibliometric Research

The article employed a bibliometric mapping approach to examine the dataset. Bibliometrics is the scientific discipline dedicated to the quantitative analysis of written communication, encompassing books, articles, and various other forms of written expression. Bibliometrics places substantial emphasis on bibliometric mapping within its domain. The primary goal of bibliometric mapping is to create visual representations illustrating the relationships among specific units of interest. The entities of interest may include documents,

authors, or keywords, and the connections between these entities can be established using methods like citations, co-citations, co-authorships, or co-occurrences of keywords. Our analysis concentrates on examining the connections between key terms in QA within African HES research. This exploration is grounded in bibliographic coupling through full counting analysis. The visual representation resulting from our efforts is referred to as a term map.

The scholarly literature on bibliometric maps of this kind traces its origins back to the 1990s [13], [25], [29], [34] [38]. Within the literature, these maps are frequently termed co-word maps. The following sentences offer a detailed exploration of the bibliometric mapping approach employed in this study.

The study undertook a systematic literature review focusing on QA research in Africa. The bibliometric analysis and citation mapping process for QA in African HES followed six distinct steps, as illustrated in Fig. 1.

The steps outlined in Fig. 1 were implemented using a research design that combined bibliometric analysis with citation data and visualization techniques, as referenced in [4], [21], [47], and [51], like in the studies above, in five phases as shown in Fig. 2, such as:

- 1) Literature identification (web databases selection and search).
- 2) Definition of inclusion criteria and screening for inclusion.
- 3) Evaluation of quality and eligibility of literature.
- 4) Examining the nature of journals in which articles were published.
- 5) Key results evaluation and SNA linked with observed reality and explanatory relationships, also analysis and preparation of the final report.

The execution of these phases, mentioned in Fig. 2, is described in detail in the following section.

Phase 1 - Literature Identification (Web Databases Selection and Search)

In this phase, the term "Quality Assurance" was set up focusing on the databases search in English language. The option for English derives from its relevance as an international knowledge communication tool and was considered due to the nationality and geographical context of the authors.

The selection of web databases and the search process were conducted using a combination of keywords, such as: (quality assurance; ensuring quality; quality improvement; quality as excellence) + country in Africa + year of publication disclosed the quantity and trends journal of papers (articles, books, book chapters, and conference proceedings). This step consisted of searching extensively all relevant peer reviewed articles, books, and proceedings in reputable journals, published from 1999 to 2019 in the main scientific databases.

Searches were conducted in four selected scientific databases: WoS, Scopus, Google Scholar and AJOL.

The WoS indexes journals from different fields of knowledge and it is widely used in bibliometric studies [23]. Scopus indexes over 18,500 journals and it also covers various areas of knowledge. Google Scholar, the academic bibliographic database provided free-of-charge by the search engine giant

Google [1]. AJOL is the world's largest online collection of African-published, peer-reviewed scholarly journals. AJOL Vision is for African learning to be translated into African development [36]. Its website lists a total of 167 items (journals) related to research from various African countries with a mix of online and print journals. These databases were chosen based on their multidisciplinary nature and are suitable

for in-depth evaluation of complex issues [14]. The literature identification disclosed: (a) the total number of title screening; (b) number of each database title screening, (c) number of additional records identified through other sources; (d) describe name of databases/search engine and manual search process.

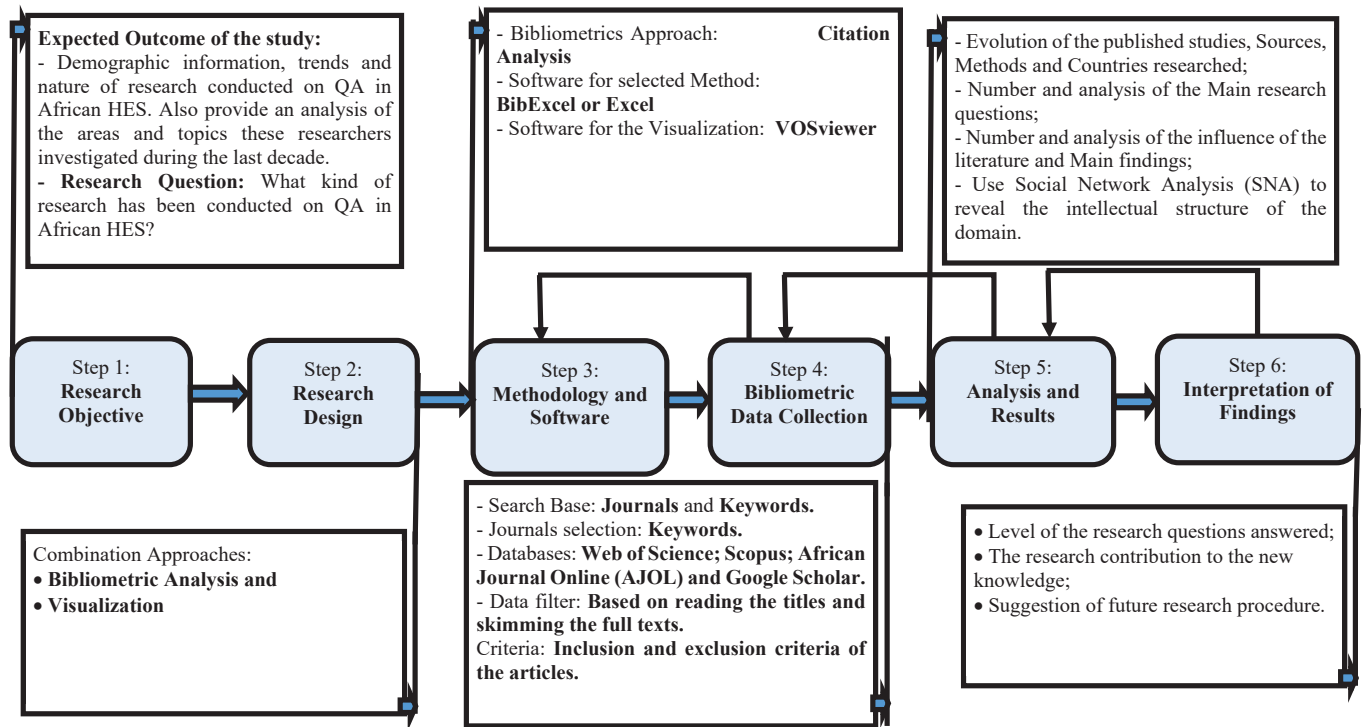


Fig. 1 Diagram describing the bibliometrics analysis and citation mapping process on Quality Assurance in African Higher Education, Adapted from [50] and [57]

Phase 2 - Definition of Inclusion Criteria and Screening for Inclusion

The collected information, including peer-reviewed articles, books, book chapters, and conference proceedings, was organized into a dedicated publications database (file) for systematic analysis. This step consisted of reading the titles and abstracts, including skimming the full texts whenever necessary, to filter the relevant articles that meet the objectives and criteria of the study.

A relevant number of articles from different journals were identified and analyzed. The relevance was determined in the process of extracting articles in different journals. This step identified articles through a combination of topics, keywords, country, and year of publication. Moreover, the information disclosed the bibliographical sources and influence of the QA literature focusing on Africa, such as: (a) the number of records after duplicate removed; (b) method/tools to remove duplicates; (c) total number of records title/abstract screened; and (d) number of records excluded.

Phase 3 - Evaluation of Quality and Eligibility of Literature

The present phase consisted of reading the full texts of a selected number of articles and classifying them according to

the kind of research questions addressed, the unit of analysis observed, the methodology used, and countries researched. The pre-processing of data and refining the article database was part of this stage. Furthermore, this phase disclosed: (a) the number of full-text articles assessed for eligibility; (b) the total number of full-text articles excluded; (c) reasons of full-text articles excluded, and (d) the number of full-text articles for each reason.

Phase 4 - Examining the Nature of Journals in Which Articles Were Published

The phase presented the bibliographical sources and influence of the QA research in African HES (articles, books, book chapters, and conference proceedings) through the production of the quantitative synthesis number and displayed the citations analysis of the articles related to QA in African HES. As an analysis and synthesis of the collected data, produced and reviewed a summary table, calculated relational statistics and bibliometrics measures; quality check of unrelated results; and results visualization using spreadsheets, tables, geographic maps, and other method.

This phase revealed: (a) the number of studies included in quantitative synthesis and (b) number of studies for each

specific/subgroup analysis.

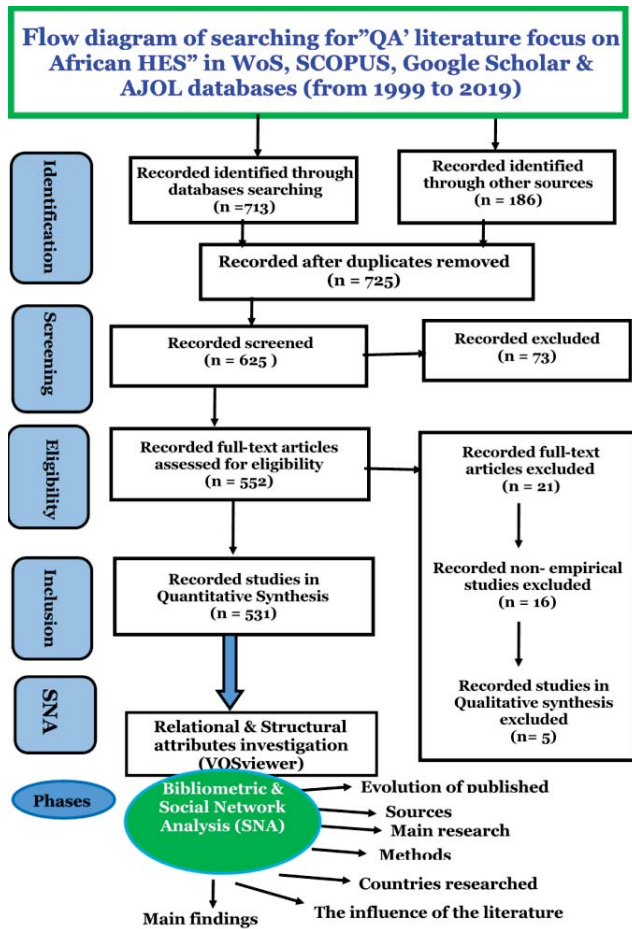


Fig. 2 Phases of the QA literature search; Adapted from [30] and [39]

Phase 5 - Key Results Evaluation and SNA

SNA measured and visualized the social structure of scientific groups, their intentionality to collaborate and their social ties (the displayed of nodes and ties on QA in African HES). Moreover, this step examined the social structure of the scientific community producing the most influential research. Additionally, the study conducted an investigation into the relational and structural attributes of QA knowledge production networks using VOSviewer software.

The information resulting from the publication extraction process was keyed into an Excel or text file, and then the file was uploaded to VOSviewer software. The VOSviewer visualized the density of keywords or clusters, the evolution of published studies, the sources, the most researched country, the main research questions, methods, the influence of the literature, and main findings related to QA in African HES. The study included an evaluation of key results and social network analysis (SNA), linking these findings to observed realities and explanatory relationships, followed by a comprehensive analysis and the preparation of the final report.

In the interpretation, we realised that bibliometric mapping has limitations imposed by the data and limitations imposed by the map.

The availability of data will always be limited, as limitations imposed by the data, and the data that are available will always contain a certain amount of noise. In our research, data noise might stem from the arbitrary choices researchers make in selecting terminology for titles and abstracts. This includes the use of synonyms and homonyms, which our methods may not accurately identify. Consequently, the interpretation of our findings could be somewhat unclear.

Similarly, just like the constraints inherent in mapping, a map offers a condensed depiction of reality, and simplification typically results in the reduction of information. In this instance, information loss occurs because terms placed in distinct repositories are not accessible in the form of complete articles.

In order to enhance the overall quality and robustness of the study on QA in African HE, several key improvements in the research methodology are recommended. Firstly, the sampling strategy should be refined to ensure a more representative selection of research articles, incorporating a systematic approach that includes a broader range of sources. Methodological transparency is crucial; providing a detailed step-by-step explanation of the bibliometric mapping process will assist readers in understanding how data were collected, processed, and analyzed.

To gain deeper insights into the context and nuances of QA in African HE, it is advisable to supplement quantitative analyses with qualitative methods. This may involve incorporating interviews, case studies, or content analysis of qualitative data. Validating findings and enhancing reliability is essential; measures such as inter-rater reliability checks for bibliometric mapping and triangulation of data through multiple methods can strengthen the study's overall robustness.

Consideration should be given to adopting a longitudinal approach to track changes and developments in QA research over time, providing a dynamic perspective that can reveal trends or shifts in the field. Stakeholder engagement is also recommended, involving educators, policymakers, or QA professionals to gather their perspectives. This engagement adds a valuable layer of context to the study and ensures its relevance to those actively involved in the subject.

Cross-validation of findings is another important step; comparing results from bibliometric mapping with other established indicators or databases can strengthen the credibility of the study and confirm the robustness of the identified patterns. Lastly, the inclusion of a thorough discussion on the limitations of the study is crucial. Acknowledging potential shortcomings and addressing how they may impact the results adds transparency and helps readers interpret the findings more accurately. Collectively, these suggestions aim to provide a more comprehensive and rigorous foundation for the study, contributing to an enhanced understanding of QA in African HE.

IV. DATA ANALYSIS AND DISCUSSION

This section presents the results organized according to the study's research questions. The analyses focus on the four dimensions of the QA in HES knowledge production in Africa: size, time, geographic distribution, composition.

The analysis has included 531 papers of which 127 are from Scopus; 30 from WoS; 85 from AJOL and 259 from Google Scholar. Therefore, 284 authors wrote these papers, from 231 institutions, from 69 different countries, 54 of which were in Africa, and 15 were from outside Africa.

Number of Publications per Year as a Size and Time Dimensions of the Knowledge Production

In Africa, there is a relatively small corpus of documents on

QA in HES, especially when it comes to a large geographic area and long period. Therefore, the knowledge base on QA in HES in Africa is still in its earliest stages.

Even though the African QA in HE literature is relatively small, its growth trajectory is notable (see Fig. 3). The African's average literature in QA in HES share in global researchers was 1%. Based on these data, the African literature in QA in HES is small and emerging but growing rapidly.

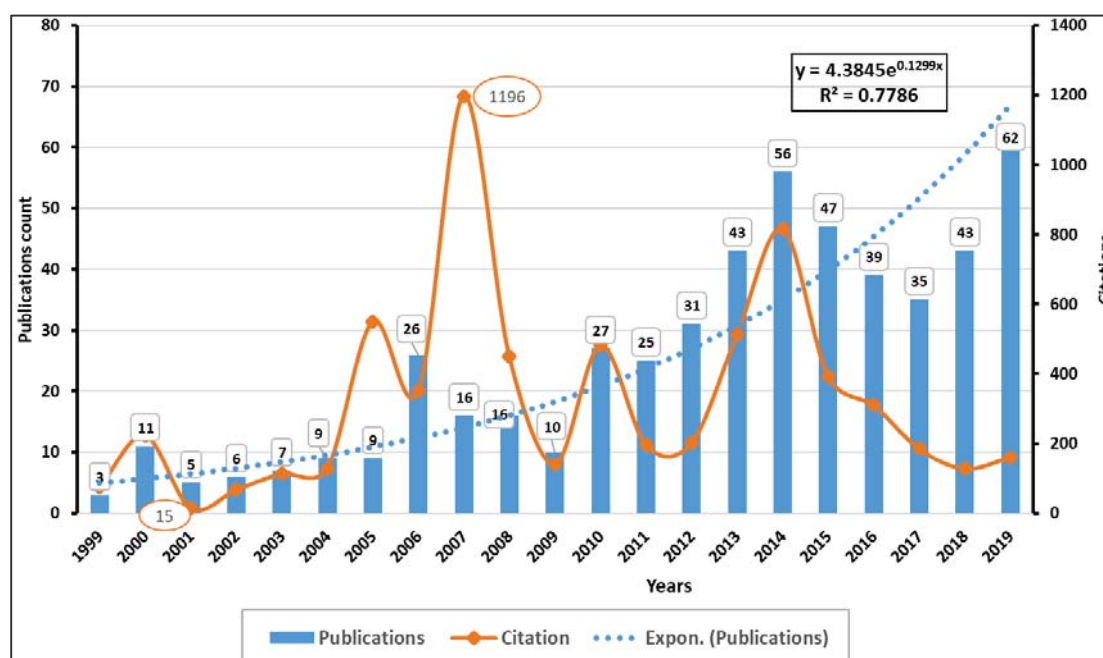


Fig. 3 Bar Chart of Publication numbers, citation level and exponential publications tendency over time

In the geographical distribution of publications, South Africa accounted for 28% among 33% of southern Africa region and African literature (see Fig. 4). In addition to Nigeria, Ghana, Uganda, Zimbabwe, Egypt, Tanzania, Kenya, Botswana, and Ethiopia contributed at least 11 documents. Many African societies with a highly outlying distribution have not yet contributed to the African QA in HES knowledge base. Furthermore, it confirms numerous African societies whose policies and practices in QA in HE is largely hidden from international perspectives [23]. QA in HES knowledge production on the continent of Africa remains in its emergent stage of development, based on this unequal geographical distribution. The size, growth, and geographic distribution of African HES coincide with findings reported in another review that used a different time frame, database, and method [23].

Number of Publications per Country and Region as a Geographic Distribution Dimension

Fig. 5 shows the data about share of publication contribution per African region and outside Africa. In addition, the citation level of the world contribution on QA in HES. Figs. 4, 5 (a) and 5 (b) indicate that among the African countries' distribution of

531 (with 851 citations) publications on QA in African HES covered by the study from outside Africa with 60 (11.23%) publications, account to 536 (63%) citations, which informs that low number of publications from outside Africa has a high level of citations.

Out of total 531 documents on QA in HES, the type of documents are articles accounting the most prominently found publication, followed by reviews, conference proceedings papers and editorial materials.

Number and Citation Level of Publications per Year per Database as a Composition Dimension

Table I and Fig. 4 clearly show that during the period 1999-2019, there were a total of 531 publications published at the global level in four databases. There is a greater number of contributions of 259 (48.78%) items in Google Scholar, followed by 127 (23.91%) papers in Scopus and 85 (16.00%) papers in AJOL. The lowest publication number in these four databases is 30 (5.64%) papers in WoS. In addition, the study reveals that all these 531 publications have a strong citation tendency by scientists who belong to QA in HES.



Fig. 4 Number of publications per country; author's own work

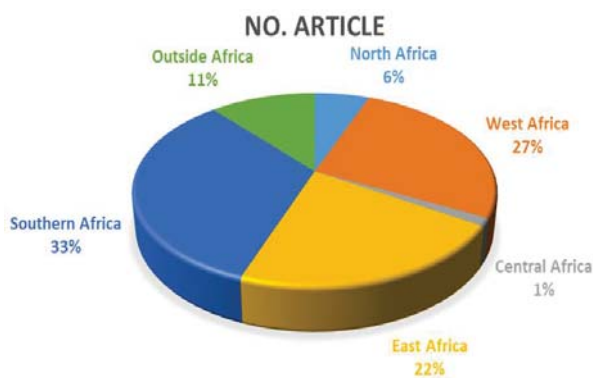


Fig. 5 (a) Publication's contribution (%)

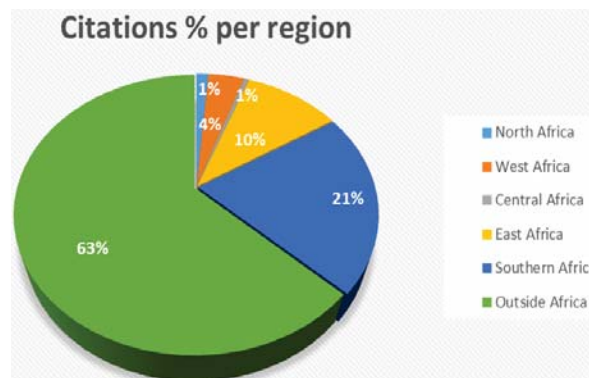


Fig. 5 (b) Citation level (%) per region

TABLE I
TOTAL CITATION LEVEL OF PUBLICATIONS PER DATABASE

ID	Database	No. Article	Citation	No. Article - Africa	No. Article – Outside Africa
1	Scopus (S)	127 (24%)	2702 (38%)	113 (21%)	14 (11%)
2	WoS (WoS)	60 (11%)	318 (5%)	49 (9%)	11 (18%)
3	AJOL (AJOL)	85 (16%)	873 (12%)	82 (15%)	3 (4%)
4	Google Scholar	259 (49%)	3223 (45%)	229 (43%)	30 (12%)
TOTAL		531	7116	473	58

Institutions and Countries with the Most Publications

Fig. 4 shows the size and time dimensions of the knowledge production on QA in HES at global level, from 1999 to 2019, in four databases. The results reveals that the high number of publications in Google Scholar was 40 (7.5%) in 2015,

followed by 26 (4.9%) in 2006 and 2019. In other hand, the highest number of publications in Scopus was 29 (5.46%) in 2019, followed by 24 (4.52%) in 2014. In AJOL, the number of publications was 11 (2.0%) in 2012, followed by 10 (1.9%) in 2014. Last and not least, in WoS, the number of publications was 10 (1.9%) in 2018, followed by 9 (1.7%) in 2019.

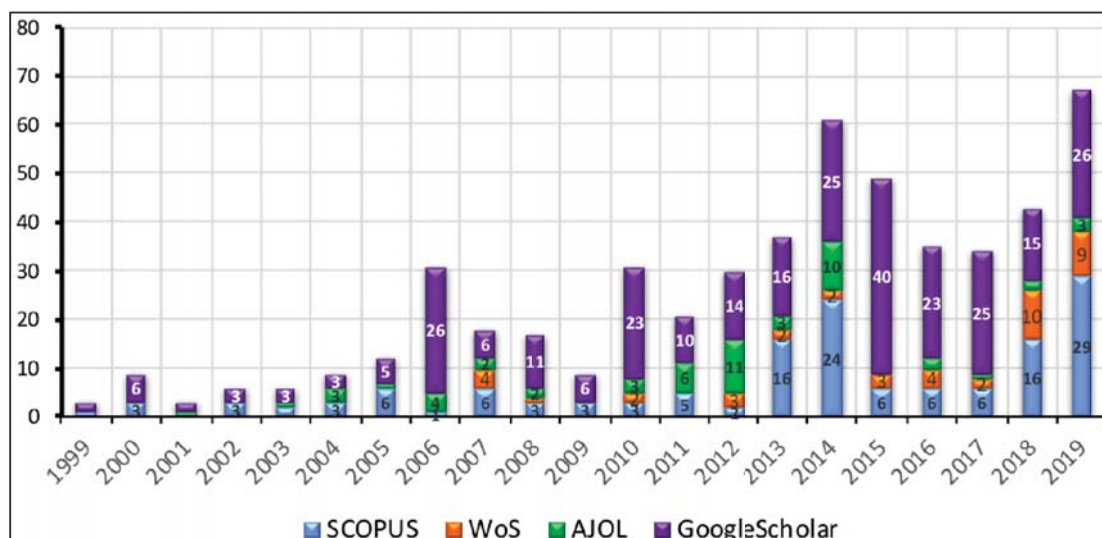


Fig. 6 Number of publications per year per database

Open Science Index, Humanities and Social Sciences Vol:19, No:1, 2025 publications.waset.org/10013946.pdf

The top 10, institutions and countries with most publications are presented in Fig. 7. Among 231 institutions (with 1276 correspondent citation level) analysed in the study, the Department of Management, University of Mauritius (Mauritius), is the most prominently institution found with 88 (6.9%) citations. In addition, Department of Psychology, Dickinson College, Carlisle (USA) and the Department of Psychology at the University of Ibadan (Nigeria) follows the previously mentioned institution, contributing 86 citations (6.74%). Next, the Department of Management Studies at the Indian Institute of Technology (India) accounts for 75 citations (5.9%). This is followed by the Tshwane University of Technology (South Africa), the University of Worcester (UK), and Suez Canal University (Egypt), each contributing 48 citations (3.76%). Finally, the Accreditation Body of Engineer and Technology (USA) accounts 37 (2.9%) citations; Alexander Von Humboldt Foundation, University of Tübingen (Germany) and Hawassa University (Ethiopia), both with 27 (2.1%) citations.

The study reveals that the major source of publications on QA in HES in Africa literature was Google Scholar, followed by Scopus, then AJOL and finally WoS. The data available are these databases shows significant practices in the research on QA in HES in Africa.

This review of research on QA in HES in Africa was undertaken in order to produce earlier reviews, in terms of the size and composition of the database of sources, as well as the method of review. Therefore, the review employed science mapping as a means of illuminating the intellectual structure of the African knowledge base in QA in HES in Africa. This section of the paper highlighted the limitations of the review, offered an interpretation of the findings, and discussed implications for future development of QA in HES in Africa.

V. CONCLUSIONS

Bibliometric analyses have been used to study the development of QA in HES in Africa. The overall increase in

publication and citation in this field reveals that existing knowledge production on QA in HE in Africa. Therefore, the growth of this knowledge about QA impacts HEI policy and practice. The average number of publications produced per year was 25.05%. The highest number of publications produced in 2014 and 2019 was 56 and 62 respectively. In addition, there is a lot of research and publication that has been done since 1999 to 2019. Therefore, the review looked at different approaches and themes to QA in African HES.

Based on systematic literature review, QA research in Africa approaches to Individual-based, Department-based or Professional community-based at community level control, regional level control, National level control, Continental harmonization, and international approaches. As for the themes, we gathered themes as Definition of QA; Purpose or function of QA systems in different countries and regions; Methodology for quality assessment; Strategies to ensure quality; quality audits; Accreditation, national rankings and global rankings; and challenges, opportunities, globalization of QA.

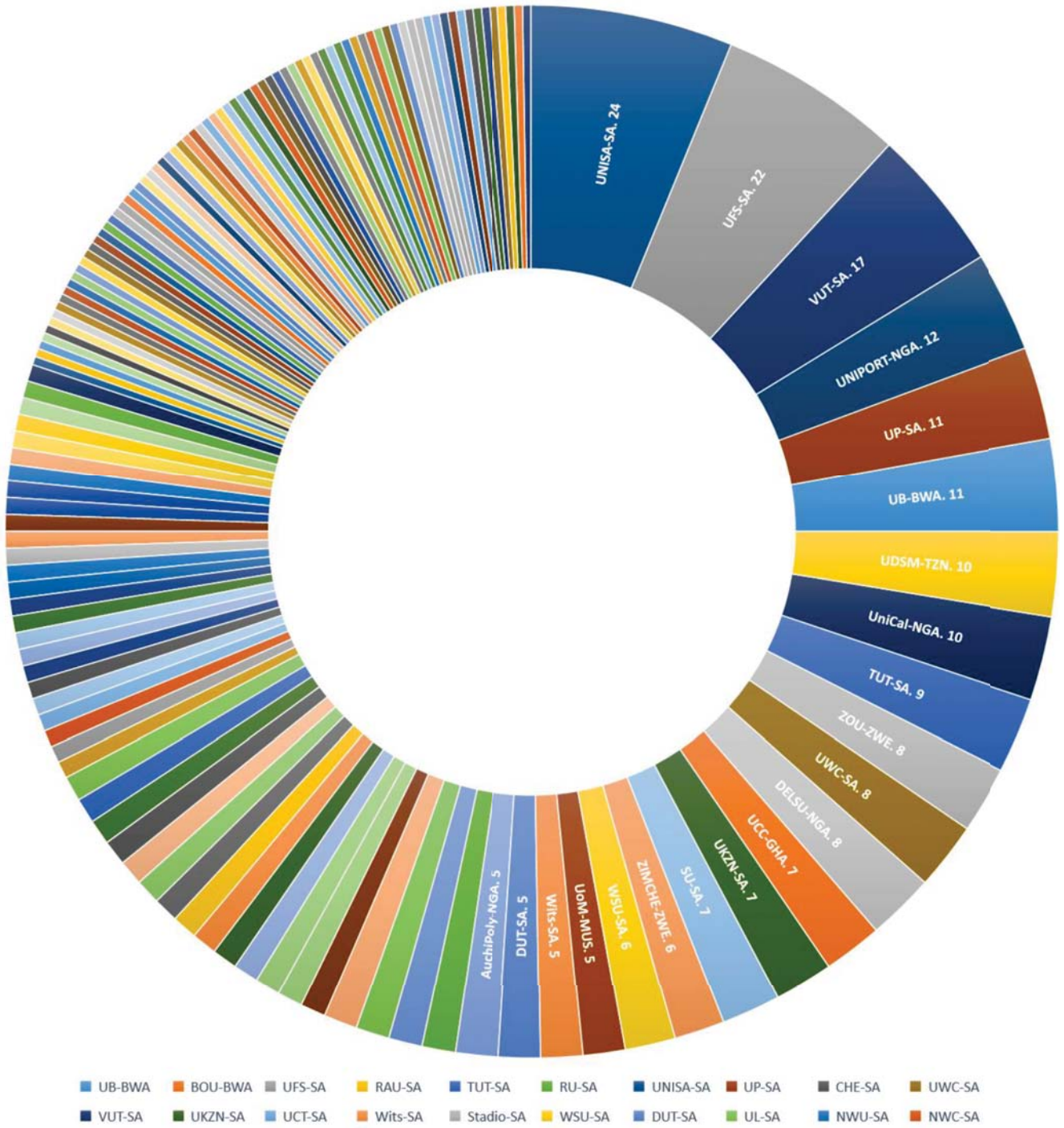
Based on the data available (Table I and Figs. 5 and 6), looking into the selected research period, the results show that papers published, from four sources, were 3 in 1999 to 531 in 2019 signalling 99.4 % of literature increase. Therefore, we can conclude that a lot of research and publication has been done since 1999 to 2019, when it comes to research on QA in African HES.

One of the main focuses of QA research in African HE over time is literature dynamic data. This can serve as a basis for bibliometric analysis of quality activities in HE institutions. Thus, according to data used in this study, this research and publication represents a significant knowledge production on QA in African HE. However, the existing knowledge production is affected by research conditions. Research conditions were influenced by the most representative players in this emerging subfield of study. Some of the players are outsider researchers with few publications but high citation impacts. In contrast, some African researchers have high

publication numbers but low citation impacts. The lack of compared opportunities for Africans to publish in highly impacted journals, lack of deeper reasoning lack of African

publications reader's analysis, and the uninformed views about the skills of researchers are the reasons behind the publication players' scenario.

Institutions Publications - Africa



(a)

to this emerging subfield of study.

Other researchers who employed similar methods and approaches did not generate data at the stakeholder level, highlighting a gap that this study aims to address [22]. Furthermore, the study revealed, through mapping the existing knowledge in the emerging field, that there was a lack of shared resources available to enhance quality in HEIs in Africa.

Besides presenting the nuances of the knowledge production in these four scientific databases on QA in African HES, this article also intends to contribute to QA in African HES establishments through production of literature trends and bibliography into the selected period in this sub-field of research. Nevertheless, the research evaluation through bibliometric mapping of knowledge production contributes to an overview picture of QA in the African HES subfield.

Using bibliometric analysis, our research delineates the evolutionary trajectory of the principal methods applied in analyzing literature on QA. It consolidates the present state of affairs in this domain, enhancing the comprehension derived from existing studies. In conclusion, we outlined the study trends that will be useful for future research.

Recommendations for decision and policymakers, researchers, and pioneers of advanced HE alignments to incorporate the open space for balanced and increase the impact of the publications for Africans. The achieved results are related to the data used for the present study. Hence, the mapping method applied for the study is useful for different sizes of data.

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