



STAKEHOLDERS IN HIGHER EDUCATION ACCREDITATION: A BIBLIOMETRIC ANALYSIS

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Abstract

The existence of stakeholders in accreditation at every level of education plays a vital role. Their opinions determine the quality of an institution. This paper aims to show research trends related to the part of stakeholders in university accreditation. The method used is a bibliometric analysis of the Scopus database using VOSviewer software. The researcher selected eight hundred ten documents from journal articles and conference proceedings in English through the selection process. The results of the co-occurrence analysis show 4 clusters of related keyword groups. Four keywords that are very influential in the research theme are quality assurance with 142 occurrences, accreditation with 83 occurrences, stakeholders with 28 occurrences, and assessment with 24 occurrences. The relationship between concepts within one cluster and between clusters is shown through network visualization. By visualizing overlays, future work related to stakeholders in higher education accreditation can be mapped, including topics on organizational culture, governance, change management, partnership, and employability. This study concludes that bibliometric analysis through VOSviewer is proven to be able to show trends and future work for stakeholder research in higher education.

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INTRODUCTION

Stakeholders and educational institutions are two sides of an inseparable coin. They influence each other and depend on each other. The institution's progress relies on the contribution of stakeholders, and the institution's progress

will have an impact on increasing stakeholder satisfaction. Stakeholder participation can indicate accountability, transparency, and participation in an institution (López-Arceiz & Bellostas, 2020). At the university level, students, lecturers, alumni, government, shareholders, media, secondary/primary education institutions, competitors, companies, creditors, and other communities are considered the most influential stakeholders.

The participation of stakeholders is prominent when the university is applying for accreditation. Accreditation can drive organizational change towards stakeholder engagement (Cooper et al., 2014). At the university level, the existence of stakeholders has a vital role in the development of educational institutions, one of which is considering several strategic decisions, including providing input, both in the field of education and research (Moscinska, 2014). The existence of internal and external stakeholders plays an essential role in developing the internal quality system and improving it (Toprak & Sakar, 2021). Higher education institutions can use the methodology for monitoring stakeholders' satisfaction as a quality assurance mechanism for their study programs (Belash et al., 2015).

In an environment where public support for higher education is broadening, it is essential to support university autonomy with stakeholder interests in mind (Choi, 2019). University assessment systems must provide a holistic assessment that includes academic programs, institutionalization, and collaboration with stakeholders (Yarime et al., 2012). Therefore, research on the existence and benefit of stakeholders at the university level will continue to be of great interest to researchers. This research will answer three research questions: (1) What research topics are considered relevant and related to stakeholders at the higher education level? (2) What are the research trends related to stakeholders at the higher education level? And (3) How about future works related to stakeholder research at the higher education level?

METHOD

This research uses the bibliometric analysis method. Bibliometric analysis is a popular and rigorous method for exploring and analyzing large amounts of scientific data. Through bibliometric analysis, researchers can uncover the evolutionary nuances of a particular field while shedding light on emerging areas in that field (Donthu et al., 2021). The bibliometric analysis procedure in this study adopted the design (Hudha et al., 2020) and (Nasrudin et al., 2021) as shown in figure 1.

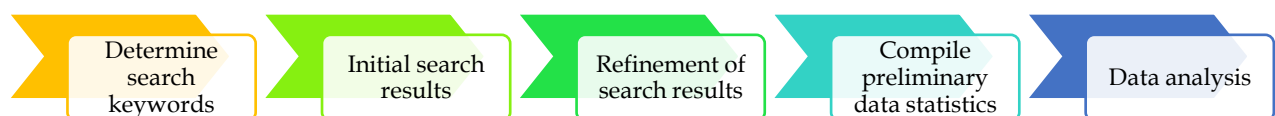


Figure 1. Five-step method bibliometric analysis

1. *Determine search keywords*

The data search was carried out in November 2021 from the Scopus database. The search query is stakeholders AND accreditation, certification, quality assurance and higher education or university* OR college selected from the title, abstract, and keywords. Scopus is a curated source of high-quality bibliometric data for academic research in quantitative science studies (Baas et al., 2020).

2. *Initial search results*

The first stage of the search resulted in 1,008 documents for the search year range 1992-2021. 1992 was the first year that Scopus indexed articles discussing the topic of stakeholders in higher education. The year 2021 is the year when the database is pulled.

3. *Refinement of search results*

The following selection process is the selection of the type of document. The documents analyzed in this study were only selected in journal articles and conference proceedings in English. The documents obtained amounted to 810 papers.

4. *Compile preliminary data statistics*

Several keywords considered to have the same meaning are combined in the thesaurus, as shown in table 1. The determination of the thesaurus is intended to reduce analysis bias.

Table 1. Thesaurus

No.	Label	Replace by
1	curricula	curriculum
2	curriculum development	curriculum
3	distance education	distance learning
4	higher education	university
5	higher education institutions	university
6	quality management system	quality management
7	stakeholder engagement	stakeholders
8	universities	university

5. *Data analysis*

The final part of the research process is analyzing the data. The software used in this research is VOSviewer. The VOSviewer functionality is useful for displaying large bibliometric maps in an easy-to-interpret manner (van Eck & Waltman, 2010). Selection of the type of analysis using co-occurrence or co-word.

RESULT

1. *Relationship between concepts*

One type of analysis presented by VOSviewer is co-occurrence analysis. The primary purpose of this analysis is to offer a map of the interrelationships and show state of the art in a particular research area. The unit of analysis in this research is the author's keywords. From 810 selected articles, 1991 keywords

were obtained. With the minimum number of keywords is 4, we got 71 keywords that meet the threshold. By determining the minimum number of members for each cluster is 14, four clusters are obtained, as shown in table 2.

Table 2. Keywords representing each cluster

No.	Cluster	Keywords (occurrence)
1	Cluster 1 (red colour) 24 items	Academic staff (4), accountability (4), bologna process (11), certification (8), change management (5), Delphi technique (5), e-learning (4), education (22), engineering (7), evaluation (8), external quality assurance (4), implementation (4), internal quality assurance (5), management (6), organizational culture (4), quality assessment (5), quality assurance (142), quality control (5), quality management (7), strategic planning (12), sustainability (8), training (10), university (109).
2	Cluster 2 (green colour) 17 items	Accreditation (83), Australia (7), engagement (5), guidelines (4), healthcare (4), internationalization (4), knowledge translation (4), measurement (5), patient safety (7), quality (34), quality improvement (11), quality indicators (4), standards (8), student experience (4), students (7), sustainable development (6), thailand (4).
3	Cluster 3 (blue colour) 16 items	Collaboration (8), curriculum (25), employability (4), faculty development (6), feedback (4), governance (5), medical education (5), partnerships (4), professional accreditation (4), public health (4), regulation (5), stakeholders (28), student learning outcome (5), teaching (4), transnational education (6), undergraduate (4).
4	Cluster 4 (yellow colour) 14 items	Abet (8), assessment (24), competencies (7), continuous improvement (4), credentialing (4), distance learning (7), engineering education (10), graduate attributes (7), learning outcomes (8), outcomes (4), pharmacy (4), pharmacy education (4), professional development (7), program evaluation (4).

To find out the relationship between concepts, how often a particular topic is studied and researched and how great the relationship is between subjects, the VOS viewer shows it through the network visualization feature as shown in figure 2.

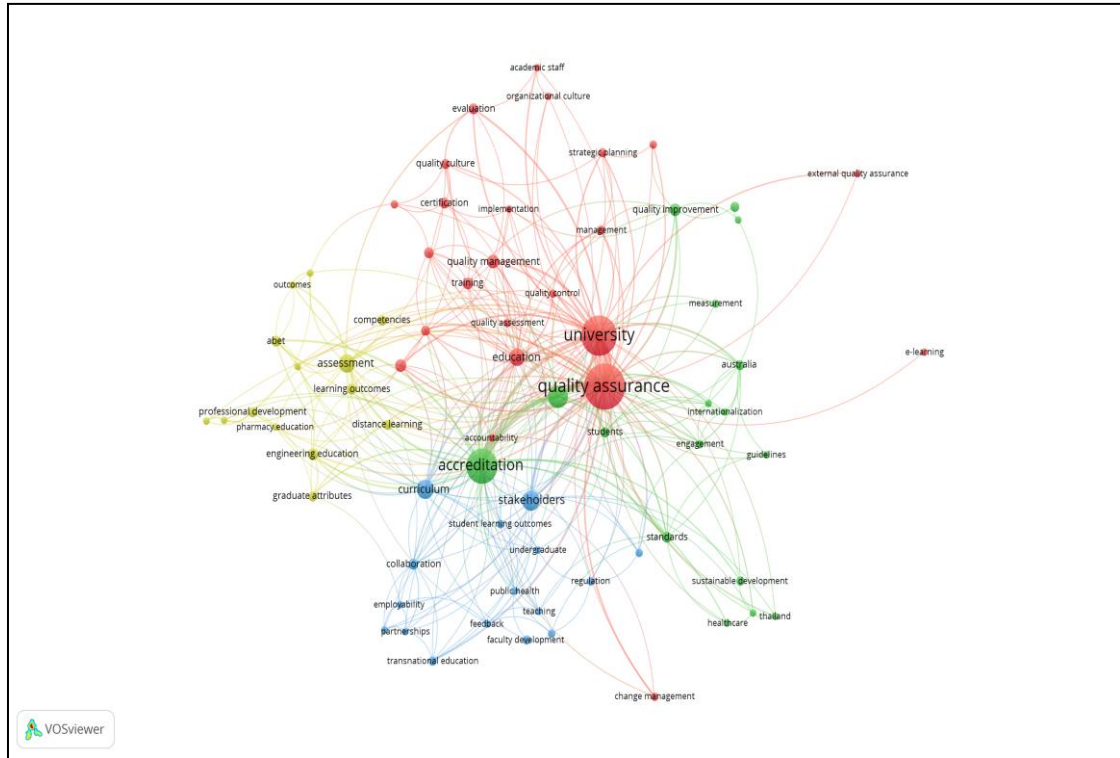


Figure 2. Network visualization

2. State of the art

State of the art in research related to stakeholders in higher education accreditation is shown in figure 3.

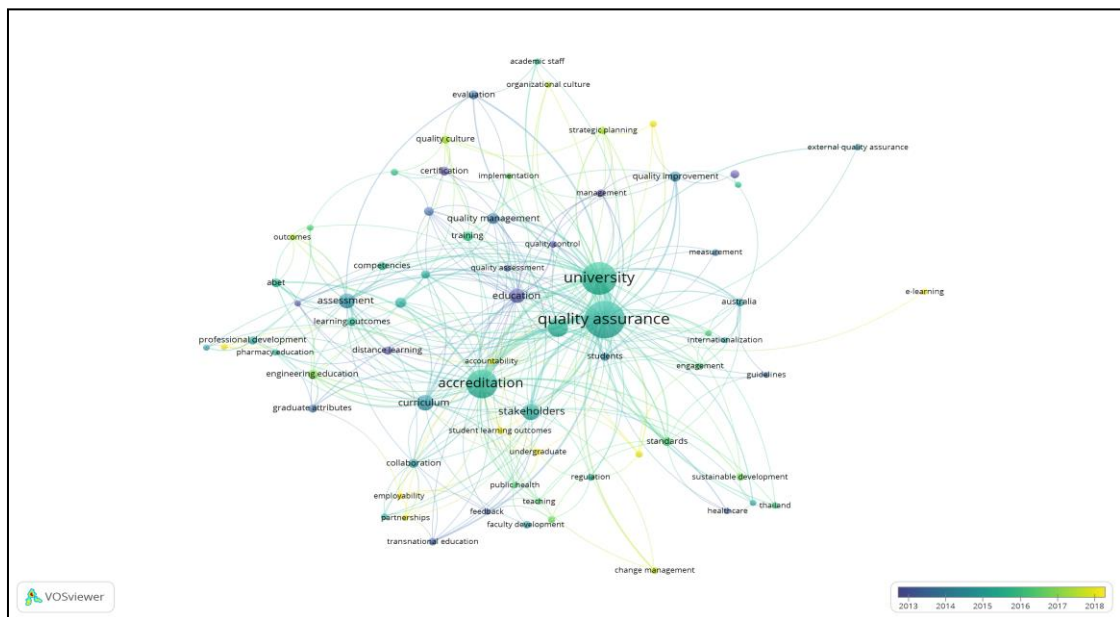


Figure 3. Overlay Visualization

3. Future work

Future work on stakeholders in higher education accreditation is shown in figure 4.

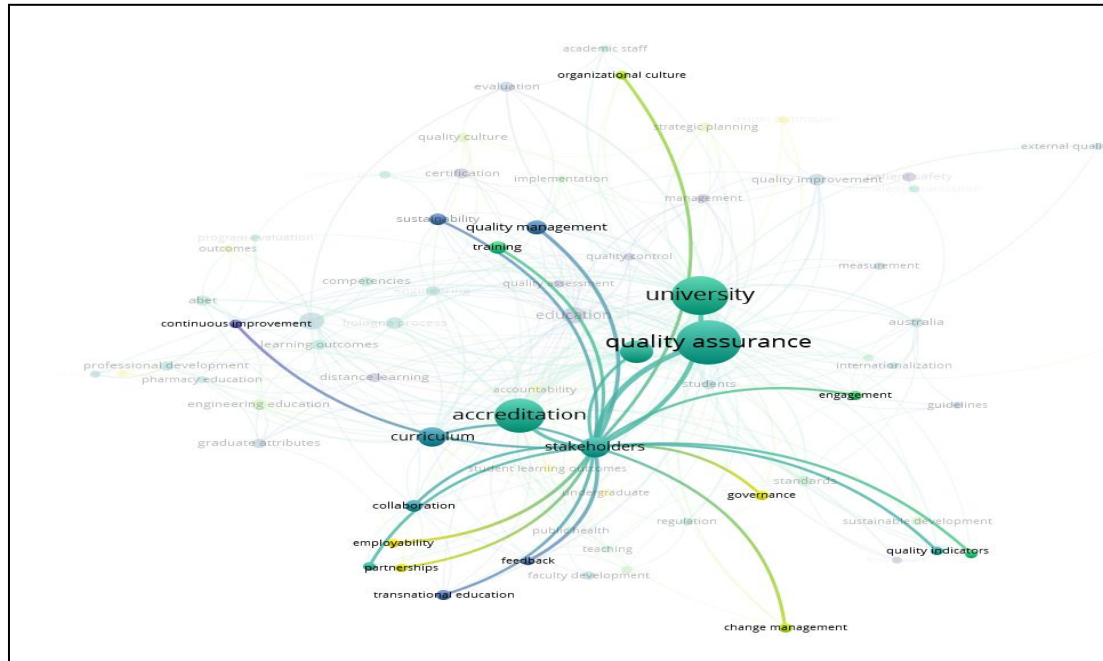


Figure 4. Future works

DISCUSSION

There are three main results from this study. First, the relationship between topics. In Figure 2, four clusters show four large groups, each represented by a dominant issue (indicated by the largest node). Cluster 1 (red color) shows the two most dominant keywords: quality assurance with 142 occurrences and university with 109 occurrences. These two keywords are the keywords that appear most often in articles and show topics that are often researched. These two keywords also offer a close relationship, as evidenced by the distance between nodes ([van Eck & Waltman, 2020](#)). In cluster 2 (green), the two dominant keywords are "accreditation" with 83 occurrences and "quality" with 34 occurrences. In the same way, in cluster 3 (blue), there are two dominant keywords: stakeholders with 28 occurrences and curriculum with 25 occurrences. Meanwhile, in cluster 4 (yellow), a keyword assessment is considered the most prevalent with 24 repetitions. Figure 2 shows clearly that the discussion of stakeholders in accreditation is related to the curriculum (demonstrated by the proximity between nodes). Some research related to stakeholders, accreditation, and curriculum can be seen in the study ([Romero, 2008](#); [Porter et al., 2020](#); [Oosthuizen et al., 2021](#)).

The second result of this study is to show research trends and state-of-the-art research on stakeholders in higher education accreditation, as shown in figure

3. Yellow keywords indicate the latest research topics, while blue ones indicate the opposite (old) (van Eck & Waltman, 2020). Student learning outcomes (avg.pub.year 2018.00), e-learning (avg.pub.year 2018.00), employability (avg.pub.year 2018.75) and Delphi technique (avg.pub.year 2019.20) are among the topics. The latest research. Management (avg.pub.year 2011.83), Education (avg.pub. year 2012.82), and quality improvement (avg.pub.year 2014.18) are examples of old research topics. Figure 3 shows which research areas should be continued and which areas are starting to be abandoned.

The third result of this research is future works related to stakeholder research at the higher education level, as shown in Figure 4. Several keywords related to stakeholders need to be investigated further, such as topics of organizational culture, change management, employability, governance, and partnership. The five issues above will continue to be discussed by future researchers. The rationale is that there is a significant challenge for any university to develop innovative offerings and adapt them to market realities and employer requirements. Focusing on relevant aspects of the market (e.g., entrepreneurs, etc.) can sometimes lead to discontent among different stakeholders who sometimes find it challenging to adapt, update and change courses, develop teaching materials for lectures and seminars, and reinforce the relationship with the business (Dabija et al., 2017).

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