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OPENNESS IN HIGHER EDUCATION FOR PROMOTING EQUITY, DIVERSITY, AND INCLUSION: A BIBLIOMETRIC AND POLICY DEVELOPMENT PERSPECTIVE

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ABSTRACT

Openness in higher education has gained increasing attention as an approach to improving accessibility, knowledge sharing, transparency, and collaboration. It encompasses practices such as open access, open educational resources (OER), open pedagogical practices, open communication, and collaborative learning, which have implications for equity, diversity, and inclusion (EDI). This study examines the scholarly development of research on openness in higher education in relation to equity, diversity, and inclusion through a bibliometric perspective. Using data retrieved from the Scopus database, the study analyses publications from 1988 to 2026 to identify major publication trends, relevant journals, authors and institutional affiliations, country-wise co-authorship patterns, keyword co-occurrence, thematic structures, thematic evolution, and research gaps. The bibliometric analysis was conducted using science-mapping techniques, including VOSviewer. The findings indicate a substantial growth in scholarly attention to openness and EDI, particularly in recent years. The keyword and thematic analyses demonstrate strong interconnections among higher education, diversity, inclusion, openness, and open educational resources, alongside emerging themes such as e-learning, sustainability, social justice, and artificial intelligence. The analysis also reveals extensive international collaboration and a multidisciplinary research landscape. Despite this growth, gaps remain in empirical research examining the implementation and outcomes of openness-oriented policies and practices, particularly in multilingual, low-resource, and underrepresented contexts. Challenges related to digital infrastructure, institutional support, accessibility, and awareness also remain relevant. The study concludes that future research should move beyond conceptual discussions toward empirical investigation of how openness-oriented policies and practices can contribute to equitable and inclusive higher education across diverse institutional and socio-cultural contexts.

KEY WORDS: *Diversity, equity, higher education, inclusion, openness, policy development.*

INTRODUCTION

Openness is an important aspect in education, especially in higher education, because higher education institutions play a crucial role in developing students' problem-solving abilities, creativity, and so on (Wang & Derakhshan, 2025). So, openly sharing information helps students to share, listen and accept each other's ideas, which also brings equity in the classroom. Openness in education implies open access, open educational resources (OER), and open pedagogical practices (Cronin , 2017) and being open to students' ideas and the readiness to share and engage (Schlagwein, Conboy, Feller, Leimeister, & Morgan, 2017) that has been widely advocated to democratize learning (Haynal, 2016). Additionally, openness in education is an important approach to improving accessibility, transparency, and collaboration within higher education institutions. It includes practices like open access to knowledge, open educational resources, open communication, and collaborative learning, which can contribute to promoting equity, diversity, and inclusion in higher education. At the same time, equity, diversity, and inclusion are also important in every aspect of society, and they have become central values in education policy worldwide to ensure the success of all students, irrespective of their background, class, creed, caste, colour, socio-economic condition, etc. At present, there is growing interest in how openness or open education can promote equity, diversity and inclusion by removing access barriers and fostering equitable education and inclusive learning. The other researchers have studied openness to cultural diversity in university campuses (Ganz Meishar, 2024), open educational research for equity and inclusion (Naidu & Karunanayaka, 2024), and open educational practices and challenges of OER (Ingavélez-Guerra ET.AL., 2022).

However, the extent and nature of research at this point of view remain under-explored. Therefore, this bibliometric study aims to systematically review the literature on openness in higher education for promoting equity, diversity and inclusion. This bibliometric analysis aims to map the literature on openness as a pillar of equity, diversity and inclusion in

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higher education from 2000 to 2026, in order to quantify major research trends, co-authorship, co-occurrence, and major research gaps. The researchers formulate the following research questions and objectives-

OBJECTIVES OF THE STUDY

The following objectives have been framed

RO1: To find out the major research trends on openness and equity, diversity and inclusion in higher education that have evolved over time (1988-2026).

RO2: To investigate the co-authorship (country-wise) existed in the literature on openness and equity, diversity and inclusion in higher education that evolved over time (1988-2026).

RO3: To study the co-occurrence that existed in the literature on openness and equity, diversity and inclusion in higher education evolved over time (1988-2026).

RO4: To find out the major research gaps on openness and equity, diversity and inclusion in higher education.

RO5: To assimilate various policy and practices has been developed in higher education to support openness for promoting equity, diversity and inclusion.

RESEARCH QUESTIONS

The following research questions have been framed

RQ1: How has existing literature on openness and equity, diversity and inclusion in higher education evolved over time (1988-2026)?

RQ2: How has co-authorship existed in the literature on openness and equity, diversity and inclusion in higher education evolved over time (1988-2026)? Which countries are most productive or influential in this domain?

RQ3: What is co-occurrence existed in the literature on openness and equity, diversity and inclusion in higher education evolved over time (1988-2026)?

RQ4: What are the gaps existed in the literature on openness and equity, diversity and inclusion in higher education evolved over time (1988-2026)?

RQ5: What insights have been drawn for policy and practice in higher education to support openness for promoting equity, diversity and inclusion?

METHODOLOGY

This study adopts a bibliometric analysis approach to explore the evolution of scholarly research on openness in higher education for achieving equity, diversity and inclusion. The researchers searched the literature using an advanced search in the Scopus database, covering publications from 1988 to 2026. The search string was used on 20/03/2026 to capture literature on “openness” and equity, diversity and inclusion in the context of higher education. The researchers used the following search strategy for searching the literature-

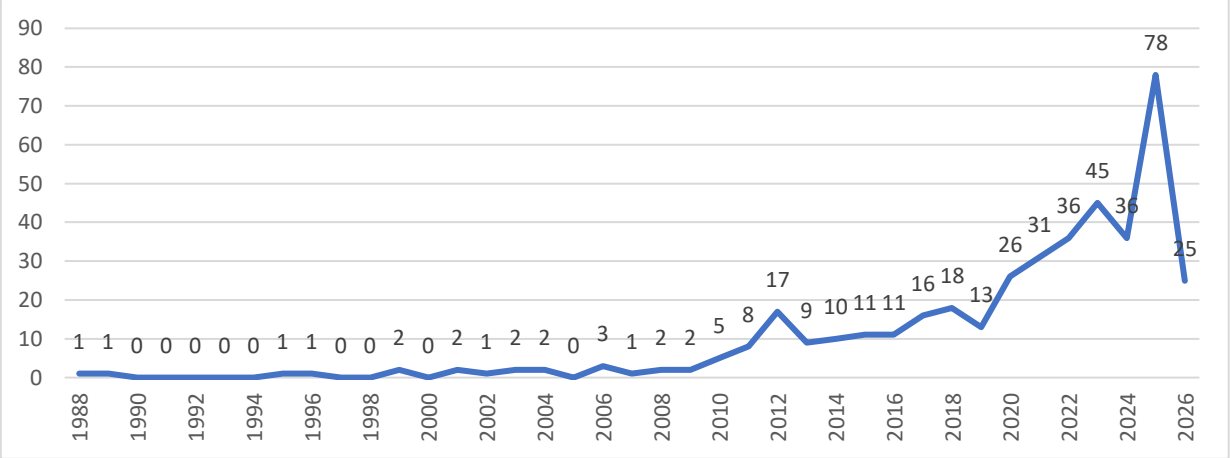
TITLE-ABS-KEY ((“openness" OR "OER" OR "open pedagogy”) AND
(“equity" OR "diversity" OR "inclusion”)) AND
(“higher education”) AND (LIMIT-TO
(SUBJAREA, "SOCI”)) AND (LIMIT-TO
(DOCTYPE, "ar”)) AND (LIMIT-TO
(LANGUAGE, "English”)) AND (LIMIT-TO
(SRCTYPE, "j”))

This Boolean string used field tags (TITLE-ABS-KEY) to search the literature based on title, abstract and keywords to ensure relevant terms. The researchers combined the similar words of “openness” such as “open educational resources” or “open pedagogy” with equity, diversity and inclusion and the context term “higher education”. The document type was restricted to journal articles, and only articles published in the English language were included to maintain consistency and quality. The researchers also applied the date range 1988 to 2026 and limited the subject area to social sciences, limited to journal articles only, language to English and source type limited to journals. After applying these criteria, a total of 7018 journal articles were retrieved. After that, the researchers used the inclusion and exclusion criteria based on the titles and abstracts of the retrieved studies and included a total of 416 journal articles, and the data were exported in a format suitable for bibliometric software tools such as VOSviewer. These tools were employed to conduct performance analysis (e.g., most productive authors, countries, journals) and science mapping (e.g., co-authorship networks, keyword co-occurrence and citation analysis). This bibliometric approach offers a comprehensive view of how the academic discourse on entrepreneurial ecosystems has evolved over time, identifying major contributors, collaboration patterns, research hotspots, and potential future directions.

RESULTS

This bibliometric study found that openness in higher education is increasingly studied through the lens of equity and inclusion. Openness in education enhances knowledge sharing, reduces barriers to access, and promotes collaborative learning among diverse groups of students and educators. However, challenges such as limited digital infrastructure, lack of institutional support, and insufficient awareness about open educational practices may hinder its effective implementation.

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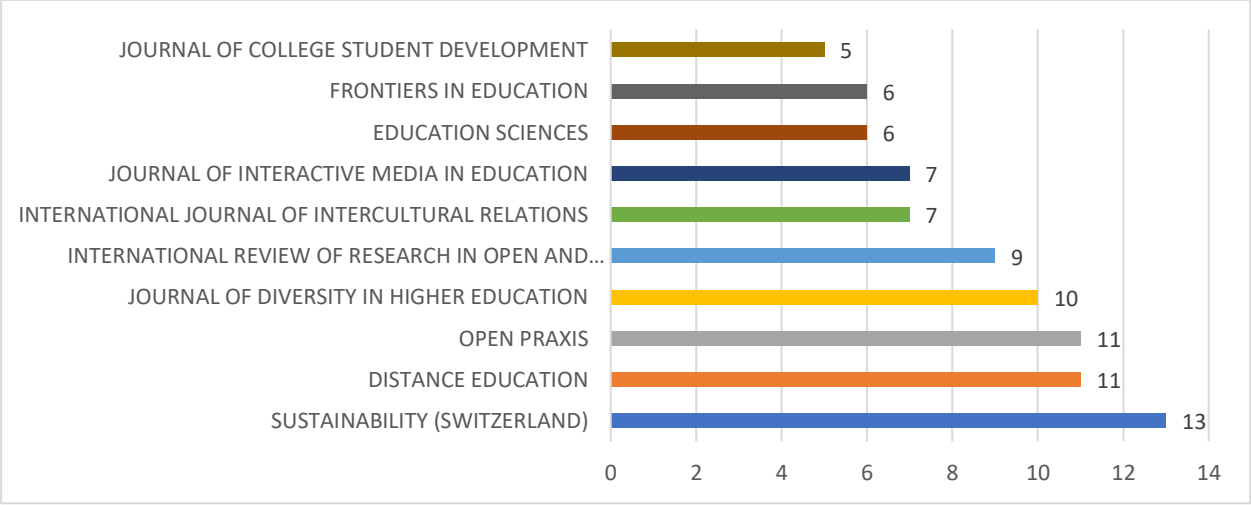
Source: *Authors' analysis of data retrieved from the Scopus database using R.*

Figure 1. Annual Scientific Production in the Research Area, 1988–2026

Figure 1 illustrates the annual scientific production in the research area from 1988 to 2026. During the initial period, particularly from 1988 to the early 2000s, publication output remained very low, with most years recording zero, one, or two publications. A gradual increase became noticeable after 2005, although the annual output remained relatively inconsistent.

From approximately 2010 onward, scientific production shows a clearer upward trajectory, with publications increasing from 5 articles in 2010 to 17 in 2012. After some fluctuations during 2013–2019, publication output increased substantially from 2020 onward, reaching 26 articles in 2020, 36 in 2022, 45 in 2023, and a peak of 78 articles in 2025. The figure subsequently records 25 articles in 2026.

However, because 2026 represents an incomplete publication year, the decline from 78 to 25 articles should not be interpreted as an actual decrease in research interest. Rather, the lower count may reflect the fact that publications for the full year 2026 may not yet be indexed in the dataset. Overall, the pattern demonstrates a substantial expansion of scientific production in the research area, particularly during the most recent years.



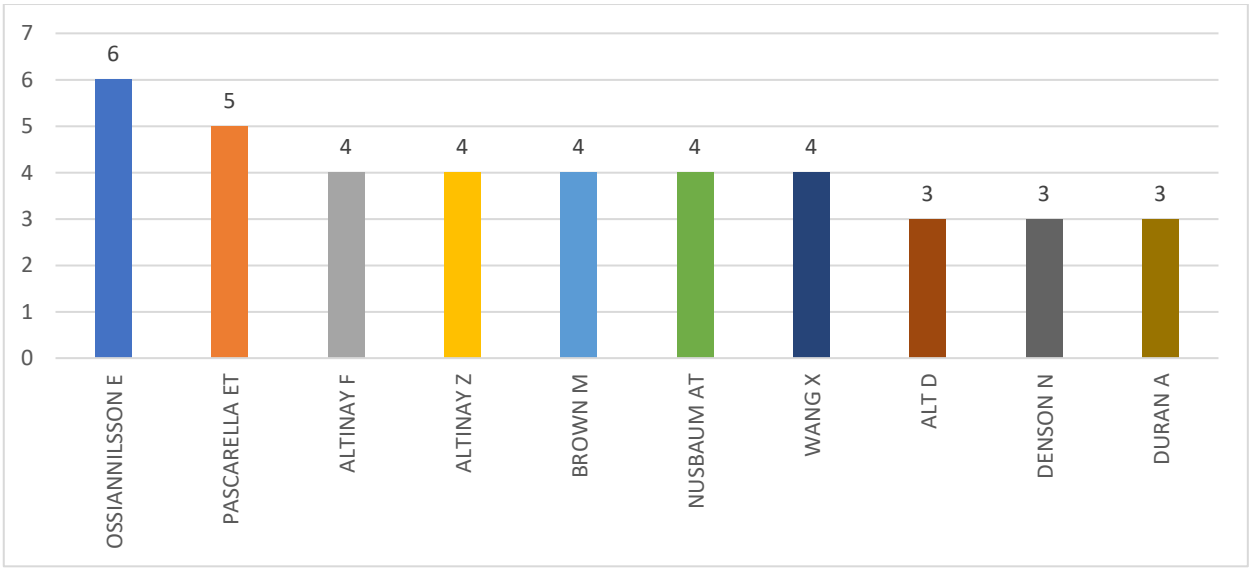
Source: *Compiled from Scopus Database*

Figure 2. Most Relevant Journals by Number of Publications

Figure 2 presents the most relevant journals based on the number of articles published in the research area. Sustainability (Switzerland) has the highest publication output, with 13 articles, followed by Distance Education and Open Praxis, with 11 articles each. The Journal of Diversity in Higher Education follows with 10 articles, while the International Review of Research in Open and Distributed Learning accounts for 9 articles.

Other journals, including the International Journal of Intercultural Relations and Journal of Interactive Media in Education, have published 7 articles each, whereas Education Sciences and Frontiers in Education have contributed 6 articles each. The Journal of College Student Development records 5 articles among the journals presented.

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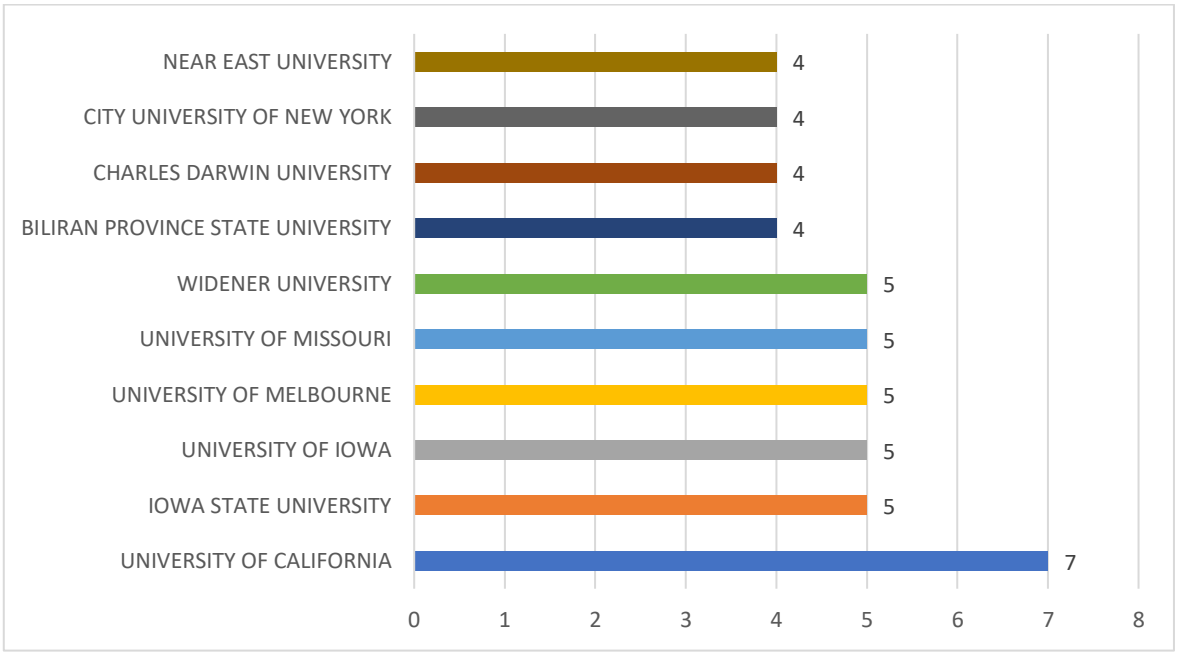
Source: *Compiled from Scopus Database*

Figure 3. Most Relevant Authors by Number of Publications

Figure 3 presents the most relevant authors based on the number of articles they have published in the research area. Ossian Nilsson has the highest number of publications, with 6 articles, followed by Pascarella with 5 articles. Altinay F, Altinay Z, Brown M, Nusbaum AT, and Wang X have each contributed 4 articles. Alt D, Denson N, and Duran A have published 3 articles each.

The distribution indicates that publication activity is spread across several authors rather than being concentrated in a single contributor. Although Ossian Nilsson and Pascarella have relatively higher publication counts, the presence of multiple authors with three to four publications suggests a broader group of recurring contributors to the research area. However, publication frequency alone should not be interpreted as a measure of an author's research influence or impact.

The figure shows that publication activity is distributed across several authors, with a small number of researchers having relatively higher publication outputs. This indicates their greater contribution in terms of publication volume within the research area.



Source: *Compiled from Scopus Database*

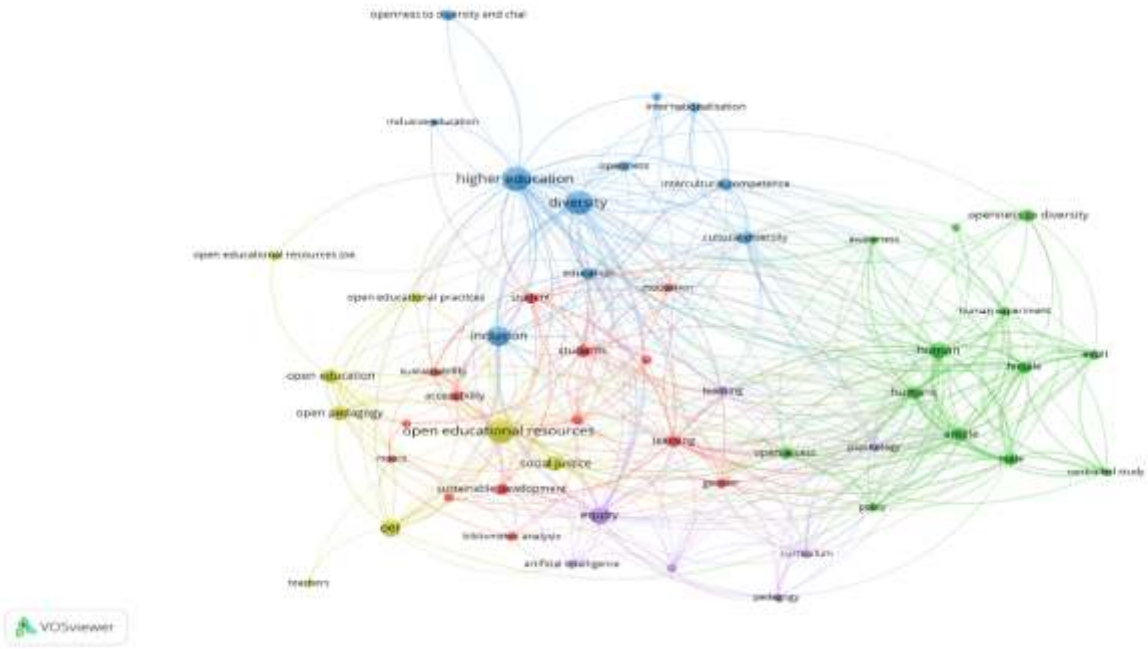
Figure 4. Most Relevant Affiliations by Number of Publications

Figure 4 shows the most relevant affiliations (universities) based on the number of research articles they have produced. Among all institutions, the University of California has the highest contribution with 7 articles, making it the leading

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institution in this field. Several universities such as Iowa State University, University of Iowa, University of Melbourne, University of Missouri, and Widener University each have 5 publications, showing strong and consistent research output. This indicates that these institutions play an important role in contributing to the development of this research area.

Other institutions like Biliran Province State University, Charles Darwin University, City University of New York, and Near East University each have 4 publications. Although their contribution is slightly lower, they are still active participants in the field. Overall, the figure shows that research is distributed across multiple universities, with a few leading institutions contributing more than others. The figure highlights that while many universities are involved in this research area, a few key institutions, especially the University of California, stand out as major contributors, indicating their strong research presence and influence in the field.



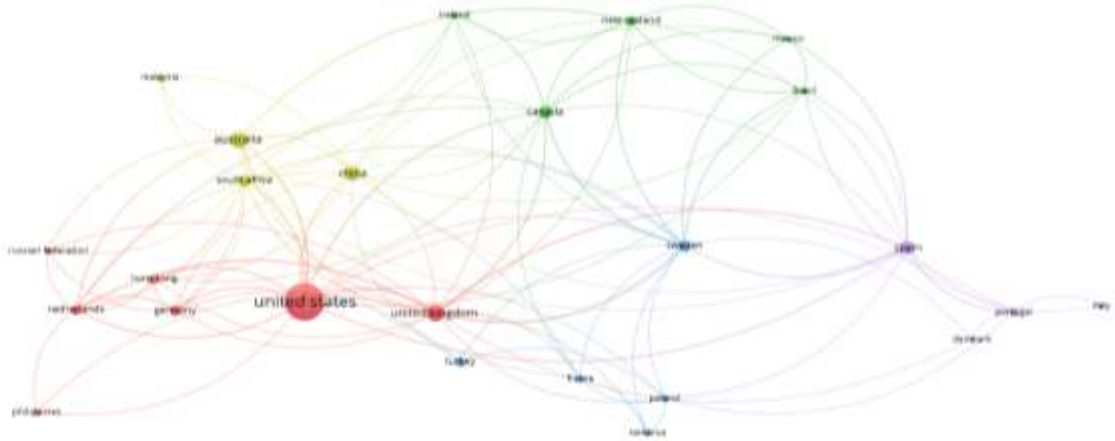
Source: *Compiled from Scopus Database*

Figure 5. Keyword Co-occurrence Network in the Research Area

Figure 5 represents the co-occurrence of keywords, showing how different research topics are connected to each other. Each word (keyword) is linked to others based on how often they appear together in research articles. Larger and more central keywords like higher education, diversity, inclusion, and open educational resources indicate the main focus areas of the research. The different colours represent clusters of related topics—for example, one cluster focuses on education and diversity, another on human-related studies, and another on open education practices. This means researchers often study these topics together, forming major themes in the field.

The connections (lines) between keywords show the strength of their relationship—the more connections a keyword has, the more important it is in the research network. For instance, higher education and diversity are highly connected, showing they are central themes. Other keywords like equity, accessibility, social justice, and open access indicate emerging or supporting topics that are also gaining attention. Overall, the figure helps in understanding how different research ideas are linked and which topics are most important. The diagram shows that the research field is built around a few central themes like higher education, diversity, and inclusion, with many related topics connected to them, highlighting a well-developed and interconnected research area.

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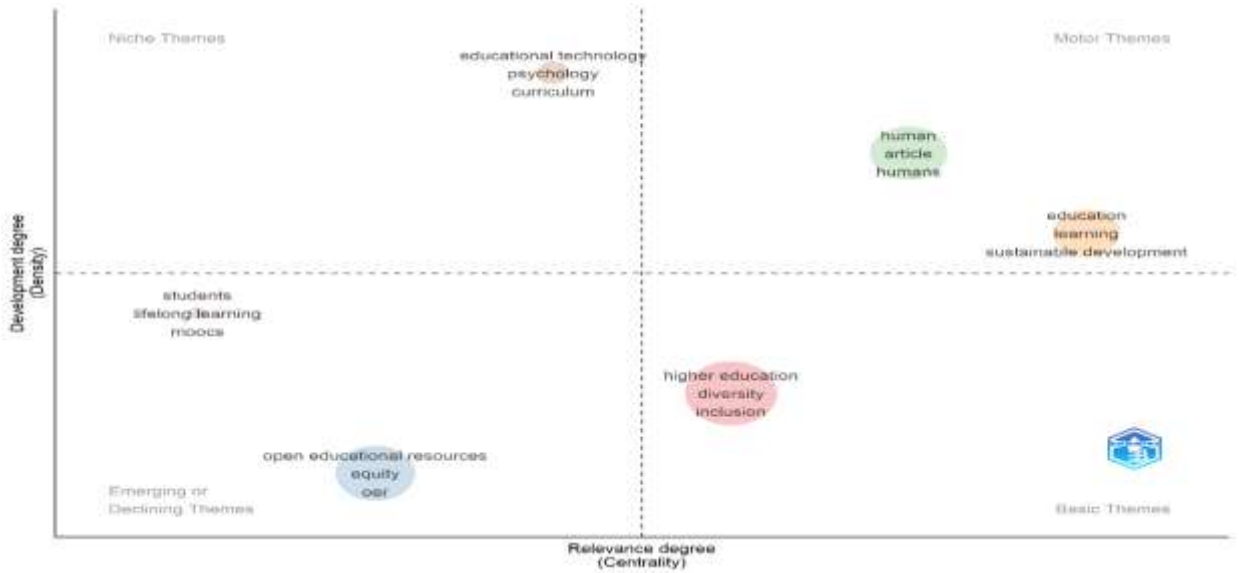
***Source**: Authors' analysis based on Scopus database data using VOSviewer.*

Figure 6. Country-Wise Co-Authorship Network

Figure 6 presents the country-wise co-authorship network generated using VOSviewer, illustrating patterns of international collaboration among researchers in the research field. In the network, each node represents a country, while the size of the node reflects its relative level of representation in the dataset. The connecting lines indicate co-authorship relationships between countries, with stronger or more numerous connections reflecting greater levels of collaboration. The different colours represent distinct collaboration clusters.

The United States appears as the largest and most prominent node in the network, indicating its substantial publication representation and extensive collaborative connections with other countries. It is strongly connected with countries such as the United Kingdom, Germany, the Netherlands, Australia, China, Canada, and South Africa, demonstrating broad international collaboration.

A second prominent group of countries includes Canada, Ireland, New Zealand, Mexico, and Brazil, which form a relatively interconnected cluster. Countries such as Sweden, Spain, France, Poland, Romania, Turkey, and Portugal are also connected to the wider network, indicating collaboration across European and other international research communities. The network further includes countries such as Malaysia, Hong Kong, the Philippines, Russia, Denmark, and Italy, reflecting the geographical diversity of contributors.



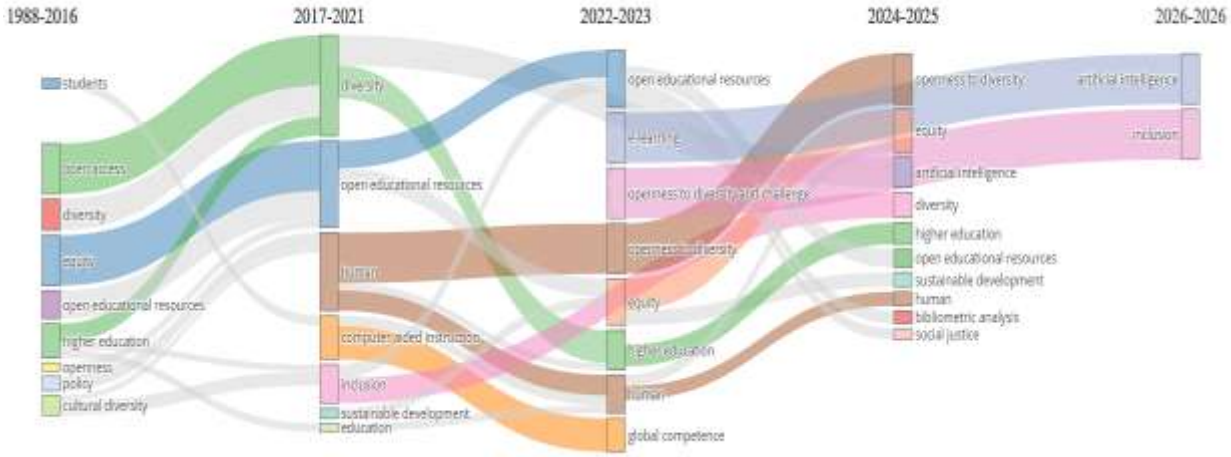
***Source:** Compiled from the Scopus Database*

Figure 7. Thematic Map of the Research Field

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Figure 7 shows the country-wise co-authorship network, which means how researchers from different countries collaborate with each other. Each country is represented as a node, and the lines between them show research collaborations. The United States appears as the largest and most central node, indicating that it has the highest number of collaborations with other countries. It is strongly connected with countries like the United Kingdom, Germany, China, and Australia, showing that it plays a leading role in international research partnerships.

Other clusters of countries can also be seen working closely together. For example, European countries like Spain, Italy, Portugal, and Denmark form one group, while countries like Canada, New Zealand, and Brazil form another collaborative cluster. These groupings show regional and international cooperation patterns in research. The presence of multiple connections between different clusters suggests that the research field is highly global, with strong collaboration across continents. The diagram highlights that research in this field is highly collaborative and international, with the United States acting as a central hub, connecting multiple countries and promoting global research partnerships.



Source: *Compiled from Scopus Database*

Figure 8. Thematic Evolution of the Research Field Across Different Periods

Figure 8 illustrates the thematic evolution of the research field across four chronological periods: 1988–2016, 2017–2021, 2022–2023, 2024–2025, and 2026. The Sankey-type diagram demonstrates how major research themes emerged, persisted, transformed, or became connected with new thematic areas over time. The width of the connecting flows indicates the continuity and relationship between themes across successive periods.

During the 1988–2016 period, the research landscape was primarily associated with themes such as students, open access, diversity, equity, open educational resources, higher education, openness, policy, and cultural diversity. These themes represent the early conceptual foundations of the research field, with particular emphasis on access, equity, diversity, and higher education.

Between 2017 and 2021, the thematic structure became more differentiated. Diversity and open educational resources remained prominent, while themes such as human, computer-aided instruction, inclusion, sustainable development, and education emerged. This transition suggests an increasing connection between issues of diversity and inclusion and technology-supported educational practices.

During 2022–2023, the thematic landscape expanded further to include open educational resources, e-learning, openness to diversity and challenges, openness to diversity, equity, higher education, human, and global competence. The emergence of *e-learning* and *global competence*, alongside continuing themes of openness, diversity, and equity, indicates a broadening of the research agenda toward digitally mediated and internationally oriented educational concerns.

The 2024–2025 period shows further thematic diversification, with openness to diversity, equity, artificial intelligence, diversity, higher education, open educational resources, and sustainable development becoming visible themes. In particular, the appearance of artificial intelligence represents a more recent technological dimension within the evolving research landscape, while diversity, equity, openness, and higher education continue to provide thematic continuity.

In the 2026 period, the identified themes include artificial intelligence, inclusion, diversity, equity, higher education, open educational resources, sustainable development, human, bibliometric analysis, and social justice. The continuation of diversity, equity, inclusion, higher education, and openness-related themes, together with the emergence of artificial

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intelligence, bibliometric analysis, and social justice, indicates further diversification of the research agenda.

DISCUSSION

The present bibliometric study examined the development of scholarly research on openness in higher education in relation to equity, diversity, and inclusion (EDI). The analysis focused on publication trends, relevant journals and authors, institutional affiliations, country-wise collaboration, keyword co-occurrence, thematic structure, and thematic evolution. The findings collectively indicate that openness has gradually moved from a relatively broad concern with access and educational resources toward a more multidimensional research agenda encompassing inclusion, equity, diversity, digital learning, sustainability, artificial intelligence, and social justice. This broader development is consistent with the conceptual understanding of openness as extending beyond access to knowledge and resources toward participation, collaboration, and inclusive educational practices.

1. Evolution of Scientific Production

The annual publication analysis demonstrates a gradual but substantial expansion of research on openness, equity, diversity, and inclusion in higher education. During the earlier years, publication output was limited, whereas a marked increase occurred in the later period, particularly after 2018 and 2020. The increasing publication activity suggests that the relationship between openness and EDI has become a more visible area of scholarly inquiry. This development can be understood in relation to the increasing recognition of open access, OER, open pedagogy, and collaborative learning as mechanisms for reducing barriers to participation in higher education. The study's conceptual framework similarly identifies openness as encompassing open access, OER, open pedagogical practices, open communication, and collaborative learning.

The growth in scientific production also corresponds with developments in the broader open-education movement. Cronin (2017), for example, examined open educational practices in higher education, while later research has increasingly considered accessibility, inclusion, and the impact of OER. The study's literature base includes work examining accessibility challenges in OER and MOOCs, demonstrating that openness has increasingly been examined alongside questions of equitable participation rather than solely as an issue of resource availability.

However, the publication trend should be interpreted primarily as evidence of increasing scholarly attention, rather than as direct evidence that openness-based practices have become effective or universally implemented. Publication growth indicates expansion of the research discourse but does not, by itself, establish the effectiveness of particular policies or practices.

2. Journals and Authors Contributing to the Field

The analysis of relevant journals shows that research on openness and EDI is distributed across several publication outlets. Sustainability (Switzerland) has the highest number of articles among the journals represented in the analysis, followed by Distance Education, Open Praxis, and the Journal of Diversity in Higher Education. This distribution is noteworthy because it demonstrates the interdisciplinary nature of the field. Research on openness intersects with educational technology, distance education, sustainability, diversity studies, and higher education research rather than being restricted to a single disciplinary outlet.

The presence of International Review of Research in Open and Distributed Learning is particularly consistent with the central role of open and distributed learning in the research landscape. The literature included in the study contains work on open educational practices and the UNESCO OER Recommendation, further demonstrating the connection between open education and broader institutional and policy discussions.

The author analysis similarly indicates that publication activity is distributed across multiple researchers. Although Ossiannilsson and Pascarella have relatively higher publication counts in the dataset, several other researchers contribute repeatedly to the field. Thus, the literature does not appear to be dependent upon a single author or research group. Instead, it reflects contributions from researchers working across open education, diversity, accessibility, technology, and higher education.

3. Institutional and International Research Landscape

The institutional affiliation analysis shows contributions from universities across different geographical contexts. The University of California has the highest publication count among the institutions represented, while Iowa State University, University of Iowa, University of Melbourne, University of Missouri, and Widener University also demonstrate substantial publication activity. The relatively small differences in publication count among the leading institutions suggest that research production is distributed among several academic centres.

The country-level co-authorship network further supports the international character of the research field. The United States occupies a prominent position in the collaboration network and is connected with researchers from several countries, while European, Asian, Australian, and other research communities are also represented. This international structure is important because issues of equity, diversity, inclusion, and openness are shaped by institutional, cultural, technological, and policy contexts. Consequently, cross-national collaboration can broaden the conceptual and empirical perspectives through which openness is examined.

At the same time, the geographical distribution identified in the present analysis raises an important research issue: the existence of international collaboration does not necessarily imply equal representation of all regions or educational contexts. The study itself identifies limited research from regional and low-resource settings as an important gap. More empirical research from developing regions, multilingual settings, and institutions with limited digital infrastructure would therefore help determine how openness operates under different structural conditions.

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4. Keyword Co-occurrence and Intellectual Structure

The keyword co-occurrence analysis provides further evidence of the interconnected nature of the research field. Higher education, diversity, inclusion, openness, and open educational resources emerge as closely connected concepts. This indicates that openness is increasingly being conceptualized within a broader EDI framework rather than solely as a mechanism for making educational materials freely available.

The connection between higher education, diversity, inclusion, internationalisation, intercultural competence, and cultural diversity is particularly significant. It suggests that the literature increasingly links openness with the capacity of higher education institutions to accommodate and engage diverse learner populations. Similarly, the co-occurrence of open education, OER, open educational practices, open pedagogy, accessibility, and open access indicate the continued importance of resource and pedagogical dimensions of openness.

The appearance of equity, social justice, sustainability, artificial intelligence, curriculum, pedagogy, learning, and teaching further demonstrates that the field has expanded beyond traditional OER-related discussions. Openness is increasingly situated within educational, social, technological, and institutional debates. This finding is compatible with scholarship arguing that openness involves practices of information and knowledge sharing and can extend beyond technology itself. Schlagwein et al. (2017), for example, conceptualized openness both with and without information technology, reinforcing the idea that openness should not be reduced to digital access alone.

5. Thematic Structure of the Research Field

The thematic map demonstrates that the research field contains themes with different levels of centrality and development. Higher education, diversity, and inclusion occupy an important position within the thematic structure, reflecting their close relationship with the overall research domain. At the same time, themes such as educational technology, psychology, and curriculum appear as more specialized areas, suggesting that they have developed within particular segments of the literature without necessarily occupying the same structural position as the broader EDI themes.

The presence of education, learning, and sustainable development, together with human-related research themes, indicates that some thematic areas have both substantial internal development and connections with the wider research field. Conversely, themes such as students, lifelong learning, MOOCs, OER, equity, and open educational resources occupy positions that suggest either developing, specialized, or less centrally integrated thematic areas within the particular dataset. These positions should be interpreted as characteristics of the bibliometric network rather than definitive judgments about the importance of the themes.

6. Thematic Evolution and Changing Research Priorities

The thematic evolution analysis provides perhaps the clearest evidence of conceptual transformation within the field. During the earlier period, themes such as open access, diversity, equity, students, and higher education formed an important foundation. During 2017–2021, the research agenda expanded toward OER, inclusion, human-related research, and computer-aided instruction. From 2022 onward, themes including e-learning, global competence, openness to diversity, and equity became more visible. In the most recent period, artificial intelligence, inclusion, sustainability, social justice, and bibliometric analysis appear alongside continuing themes such as diversity, higher education, and OER.

This progression suggests that the meaning of openness within higher education research has become increasingly multidimensional. Earlier scholarship was more strongly associated with questions of access and availability, whereas recent scholarship connects openness with participation, inclusion, diversity, technological transformation, and social justice. The literature included in the study supports this development: for example, research on OER has addressed accessibility challenges, while more recent work has examined open educational practices and their evaluation.

The emergence of artificial intelligence in the recent thematic structure is particularly noteworthy. It indicates that technological developments are beginning to intersect with the openness and EDI discourse. Nevertheless, the relatively recent appearance of this theme means that its role within openness-based higher education research requires further empirical investigation.

7. Implications for Policy and Practice

The findings have several implications for higher education policy and practice. First, openness should be understood as a multidimensional institutional practice, incorporating access to knowledge, OER, open pedagogy, communication, collaboration, and participation rather than simply providing free educational materials.

Second, open education policies should be accompanied by appropriate institutional conditions. The study identifies limited digital infrastructure, inadequate institutional support, and insufficient awareness of open educational practices as potential barriers to implementation. Therefore, the adoption of openness-oriented policies without addressing infrastructure, faculty capacity, digital accessibility, and institutional support may not automatically produce equitable outcomes.

Third, the increasing connection between openness and EDI suggests that institutions can consider open educational practices within broader diversity and inclusion strategies. This could involve improving accessibility of educational resources, supporting culturally diverse learning materials, encouraging participatory pedagogies, and strengthening opportunities for students from different backgrounds to contribute to knowledge creation.

8. Research Gaps and Future Directions

Despite the substantial growth of the literature, the findings reveal several important gaps. Existing scholarship appears to contain considerable conceptual and bibliometric discussion of openness, inclusion, equity, and OER, but there remains comparatively limited empirical evidence examining how specific institutional policies and faculty practices produce measurable equity and inclusion outcomes.

Further research is particularly warranted in regional and low-resource universities, multilingual contexts, and

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underrepresented educational settings. Teacher readiness, digital accessibility, institutional governance, and the sustainability of open educational practices also require greater empirical attention. These areas are important because the benefits of openness may depend substantially on local technological, cultural, linguistic, and institutional conditions.

The recent emergence of artificial intelligence also creates a new research agenda. Future studies could examine how AI-supported open educational resources, adaptive learning, and personalized learning environments affect equity and inclusion. Such research should also investigate issues of digital access, accessibility, algorithmic bias, transparency, and the capacity of institutions and educators to use emerging technologies responsibly.

CONCLUSION

The present bibliometric study examined the development of scholarly research on openness in higher education in relation to equity, diversity, and inclusion (EDI) using publication trends, journal and author productivity, institutional affiliations, country-wise co-authorship, keyword co-occurrence, thematic mapping, and thematic evolution. The findings demonstrate that the research field has expanded considerably over time, with publication activity increasing particularly in the more recent period. This growth indicates increasing scholarly attention to the relationship between openness and the broader goals of equitable and inclusive higher education.

The analysis further shows that the research is distributed across multiple journals, authors, and institutional affiliations. Although a relatively small number of journals and researchers account for higher publication outputs, the overall distribution reflects participation from a broad range of academic contributors. The country-wise co-authorship network also demonstrates substantial international collaboration, indicating that openness, equity, diversity, and inclusion have developed as a geographically and institutionally diverse area of research.

The keyword co-occurrence and thematic analyses reveal that higher education, diversity, inclusion, openness, and open educational resources constitute closely interconnected themes within the literature. Over time, the research agenda has expanded from foundational concerns such as open access, equity, and higher education toward more diversified themes including OER, inclusion, e-learning, global competence, sustainability, social justice, and artificial intelligence. This thematic evolution suggests that openness is increasingly being examined not merely in terms of access to educational resources but in relation to broader questions of participation, inclusion, technological transformation, and social justice.

Despite this expansion, important research gaps remain. The literature provides comparatively limited empirical evidence regarding the extent to which specific openness-oriented policies and practices produce measurable improvements in student learning outcomes, academic achievement, participation, and long-term educational outcomes. Further gaps are evident in research involving developing and low-resource contexts, multilingual settings, marginalized populations, teacher readiness, digital accessibility, institutional policy implementation, and the sustainability of open educational practices. The recent emergence of artificial intelligence also creates new research opportunities concerning AI-supported open education, adaptive learning, accessibility, and personalized educational resources.

The findings also indicate that the implementation of openness should not be understood as automatically producing equity, diversity, or inclusion. Effective implementation requires appropriate digital infrastructure, institutional support, faculty capacity, awareness, accessibility, and supportive policies. Therefore, higher education institutions need to consider openness as part of a broader institutional approach to creating accessible, participatory, and inclusive learning environments.

The study establishes that the scholarly discourse on openness in higher education has evolved from a predominantly access and resource-oriented perspective toward a broader EDI oriented framework. Future research should move beyond mapping publication trends and examine, through empirical and context-sensitive approaches, how openness-oriented policies and pedagogical practices operate in different institutional and socio-cultural settings and under what conditions they contribute to equitable and inclusive higher education. This direction can strengthen both the empirical foundation of the field and the development of evidence informed institutional policies and practices.

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