A Bibliometric Analysis: Navigating Publication Trends in Academic Dishonesty in Higher Education

Analisis Bibliometrik: Menelusuri Trend Penerbitan dalam Ketidakjujuran Akademik di Pengajian Tinggi

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ABSTRACT

The spread of artificial intelligence poses threats to academic activities. Higher education institutions are aware of academic dishonesty among students and lecturers but cannot offer promising solutions to this problem. This study examines the publication trends, leading authors and nations, international collaboration and research topics on academic dishonesty in higher education published between the year 2001 and 2023. It identifies the main countries contributing research on academic dishonesty. The study utilizes bibliometric analysis of 239 articles from the Scopus database using TITLE-ABS-KEY approach. Microsoft Excel is used in analyzing the frequency of published materials using tables and charts. Additionally, the VOSviewer software is used to create bibliometric networks and Harzing's Publish or Perish software is used to assess the citation metrics of the articles. The analysis shows that the number of publications on academic dishonesty is increasing, especially between the year 2020 and 2022. The articles were cited 4129 times, which corresponds to an average of 17.28 citations per article. The results show that the most common keywords discussed are academic dishonesty, higher education, cheating, students, and e-learning, which can be grouped into 5 clusters. The United States, Malaysia, South Africa, the United Kingdom, and Australia are among the countries that contribute to publications in this area. This study delves into publication trends on academic dishonesty, offering valuable insights into the current research landscape in higher education. By identifying key areas of focus and prominent research contributors, this analysis informs future research efforts aimed at mitigating this pervasive challenge.

Keywords: Academic dishonesty; Higher education; Bibliometric analysis; VOSviewer; Harzing's Publish or Perish

ABSTRACT

Penyebarluasan teknologi kecerdasan buatan telah menimbulkan ancaman kepada aktiviti akademik. Institusi pengajian tinggi menyedari ketidakjujuran akademik yang berlaku dalam kalangan pelajar dan pensyarah tetapi belum menemui jalan penyelesaian yang optimal untuk menangani masalah tersebut. Kajian ini meneliti trend penerbitan, penulis terkemuka dan negara penulis, kerjasama antarabangsa dan topik penyelidikan mengenai ketidakjujuran akademik di institusi pengajian tinggi yang diterbitkan antara tahun 2001 dan 2023. Kajian ini juga mengenal pasti negara utama yang menyumbang kepada penyelidikan mengenai ketidakjujuran akademik. Kajian ini menggunakan analisis bibliometrik merangkumi 239 artikel yang diperolehi daripada pangkalan data Scopus menggunakan pendekatan TITLE-ABS-KEY. Perisian Microsoft Excel digunakan untuk menganalisa kekerapan penerbitan menggunakan jadual dan carta. Selain itu, perisian VOSviewer digunakan untuk membina rangkaian bibliometrik dan perisian Harzing's Publish or Perish digunakan untuk menaksir metrik sitasi artikel. Analisis menunjukkan bahawa bilangan penerbitan mengenai ketidakjujuran akademik semakin meningkat, terutamanya antara tahun 2020 dan 2022. Artikel-artikel tersebut telah dipetik sebanyak 4129 kali, dengan purata 17.28 sitasi bagi setiap artikel. Hasil kajian menunjukkan bahawa kata kunci yang paling kerap digunapakai ialah ketidakjujuran akademik, pengajian tinggi, penipuan, pelajar, dan e-pembelajaran, yang boleh dikumpulkan kepada 5 gugusan. Amerika Syarikat, Malaysia, Afrika Selatan, United Kingdom, dan Australia adalah antara negara yang menyumbang kepada penerbitan dalam bidang ini. Kajian ini menyelidiki trend penerbitan berkenaan ketidakjujuran akademik, memberikan pandangan penting tentang landskap penyelidikan semasa di institusi pengajian tinggi. Dengan mengenal pasti bidang tumpuan utama dan penyumbang penyelidikan yang terkemuka, analisis ini memaklumkan usaha penyelidikan masa depan yang bertujuan untuk mengurangkan cabaran yang berleluasa ini.

Kata kunci: Ketidakjujuran akademik; Pengajian tinggi; Analisis bibliometric; VOSviewer; Harzing's Publish or Perish

INTRODUCTION

In the rapidly changing world of education, characterised by digitalisation and innovations, the enduring problem of academic dishonesty remains a significant concern for institutions of higher learning. Despite the strides in technology, the advent of artificial intelligence has transformed academic dishonesty into a lucrative enterprise for some individuals in specific countries (Hamid et al., 2017). Recognising the severity of this issue, higher education institutions globally are actively working to address the endemic nature of academic dishonesty (Ali et al., 2021). This shows that there is a growing understanding and awareness of the importance of studies and solutions to these current problems.

Academic dishonesty takes various forms, encompassing cheating on assessments (exams, assignments, quizzes), plagiarism, fake excuses, fabrication of work, and forgery of academic documents (Che Ku Kassim et al., 2015; Che Ku Kassim & Mohd Sallem, 2023; Ismail & Yussof, 2016; Winrow et al., 2015). Alarming rates of academic dishonesty are reported globally, with high percentages among students across different disciplines and regions. Notably, 82.1% of nursing students (Abusafia et al., 2018) and 65.3% of accounting undergraduates at Malaysian universities (Ismail & Yussof, 2016) admitted to engaging in academic dishonesty. Similarly, 60% of students in two regions of Pakistan (Malik et al., 2023) and 55.97% of students at four public universities in China (Liu & Alias, 2022) were found to cheat during exams. While current studies focus on specific types of academic dishonesty, a comprehensive understanding of its multifaceted nature is still lacking.

A longitudinal analysis reveals an upward trend in publications on academic dishonesty in both the ISI Web of Knowledge and Scopus databases over decades (Mahmud & Ali, 2023; Marques et al., 2019). Plagiarism emerges as a major keyword in Scopus publications, as indicated in the study by Marques et al. (2019). The intricate issue of academic dishonesty remains a formidable challenge in higher education, necessitating coordinated research efforts. This underscores the importance of not only examining the prevalence of academic dishonesty but also delving into the related themes and keywords that shape scholarly discussions in this field.

Against this background, this study aims to scrutinise publication trends related to academic dishonesty in higher education. It also seeks to identify common keywords associated with academic dishonesty and determine the primary countries driving research in this area. Utilising bibliometric analysis, a methodology examining bibliographic information across documents (Ahmi, 2021), this study addresses the gap in the literature on the bibliometric analysis of academic dishonesty. Hence, this study aims to contribute to the ongoing discourse by uncovering publication trends, identifying prevalent keywords, and shedding light on the geographical concentration of research on academic dishonesty. The limited existing bibliometric studies underscore the urgent need to further explore and understand this critical issue, laying the groundwork for informed strategies to curb academic dishonesty in higher education.

It is critical to have a solid awareness of the research landscape around this complicated topic as educational institutions work to create and maintain an ethical learning environment. In the context of higher education, the purpose of this bibliometric analysis is to examine the academic discourse around dishonesty in the classroom. It is noteworthy that only a limited number of studies have applied bibliometric analysis to academic dishonesty, emphasizing the need for more research attention in this domain. This scarcity stresses the need for more research to comprehend and address academic dishonesty with the aim of understanding and tackling this issue effectively. This study aims to improve the understanding of the current state of information

on academic dishonesty in higher education using bibliometric analyses. This improved understanding will provide important insights for researchers, practitioners, and administrators seeking to promote and maintain academic integrity in higher education.

Understanding current research trends and identifying knowledge gaps in the field are critical to developing effective strategies to combat academic dishonesty and maintain academic integrity. Bibliometric analysis is a valuable tool to achieve this goal. By analysing publication patterns, citation metrics and the co-occurrence of keywords, bibliometrics provides a comprehensive overview of the research landscape on a given topic.

LITERATURE REVIEW

Higher education providers have been prioritizing the provision of teaching and learning activities for large cohorts of students via online learning. However, concerns remain regarding the dependability and sufficiency of student assessments during this endeavour. To effectively evaluate students' knowledge retention, ability to apply knowledge, and knowledge validation, assessments ought to be meticulously crafted (Butler-Henderson & Crawford, 2020). Nevertheless, the efficacy of online education remains a subject of contention, given that students continue to struggle to concentrate and study for a variety of reasons, which contributes to a low level of knowledge retention (Mohd Shahrul Nizam et al., 2021). The implementation of novel pedagogical approaches has left students feeling inundated, yet they encounter challenges in effectively juggling various types of academic demands, ongoing university modifications, and other conflicts (Asmadi et al., 2021).

Academic dishonesty is defined as any form of intentionally unethical behaviour that compromises the integrity of scholarly work (Marques et al., 2019). Academic dishonesty, encompassing behaviours such as cheating, plagiarism, and fabrication, has been a persistent concern in educational institutions worldwide (Marques et al., 2019). This widespread academic dishonesty poses a significant challenge in evaluating students' knowledge through examinations, undermining the intended purpose of such assessments. (Orok et al., 2023). Academic integrity stands as a fundamental pillar of education, embodying principles such as honesty, trustworthiness, and ethical behaviour within the academic sphere. Nevertheless, in our swiftly evolving technological environment, advancements in technology and the Internet pose both challenges and opportunities to academic integrity. (Rodriques et al., 2024).

Research consistently demonstrates the widespread prevalence of academic dishonesty across educational levels and disciplines. Orok et al. (2023) found that about 61% of healthcare students at a Nigerian university practice cheating by taking the idea or work from a fellow student to submit as their own. Meanwhile, a study among academics in Malaysia indicates that 52.5% of the participants stated they had personally experienced at least one instance of academic dishonesty among them. (Tiong et al., 2018). Although nearly 80% of undergraduate students are aware of the implications of plagiarism in academic writing, they still acknowledge engaging in it (Mohtar et al., 2018). On the other hand, mixed views were received from students from India on the scope of academic dishonesty, while the teachers were in opined that cheating and malpractice are unavoidable and not sufficiently resolved by online assessment settings (Madugula et al., 2023).

Various factors contribute to this phenomenon, including societal pressure to excel (Orok et al., 2023), the competitive academic environment (Herdian & Wahidah, 2021), ease of access to online resources facilitating plagiarism (Bilen & Matros, 2021), and a lack of emphasis on ethical academic conduct (Mukasa et al., 2023). Rodriques et al., (2024) through the study on

artificial intelligence and academic integrity stated there is an evident inclination among students to knowingly engage in misconduct, influenced by factors such as cultural values, perception, peer pressure, self-efficacy, and the pursuit of set goals and achievements. Ellahi et al. (2013) indicate that there are direct effects of ethical considerations on justifying dishonest behaviour are also evident. Upon examining demographic variables, it was noted that students from undergraduate to doctoral levels reported the prevalence of these academic misconduct practices in the higher learning institutions of Pakistan.

Academic dishonesty not only compromises the integrity of education but also has far-reaching consequences. For students, the ramifications range from damaged academic reputations to severe penalties, such as suspension or expulsion. Furthermore, the erosion of trust among peers and educators undermines the educational community's integrity (Tiong et al., 2018). The statistical analysis reveals that despite the stringent academic integrity policy of higher learning institutions, instances of cheating continue to occur. The significant participation in the survey indicates a widespread prevalence of misconduct, raising concerns about the issue. Most respondents are of the opinion that other students are involved in cheating and plagiarism. This perception might encourage students to resort to unethical methods, perceiving such behaviour as acceptable and morally less objectionable (Gallant & Pani, 2023). The study also discovered that students who excel academically are less inclined to engage in academic dishonesty. Likewise, there is a lower likelihood of observing academic dishonesty among female students compared to male students.

BIBLIOMETRIC ANALYSIS

Bibliometric analysis is a method that quantifies the characteristics of a collection of documents, which includes the bibliographic information that provides information about one or more aspects of the documents or also known as metadata (Aidi, 2021). Bibliometric analysis differs from meta-analyses and systematic literature review in that it focuses on the quantitative assessment of bibliographic material to identify research trends and measure the influence of publications, authors, institutions and countries in a particular field of research. While meta-analyses and systematic reviews summarise results to answer specific research questions, bibliometrics primarily aims to provide insights into research directions, gaps and potential future research directions. The benefits of bibliometric analysis include its ability to map relationships between concepts, identify research trends, assess the novelty of research findings and provide valuable insights for future research endeavors (Lazarides et al., 2023). Hence, bibliometric analysis is a powerful tool for understanding research landscapes and predicting future directions more effectively.

To date, only three bibliometric studies have addressed this issue (see Table 1). This demonstrates the continued necessity for further investigation in this field. For many years, many papers on academic dishonesty have been included in both the ISI Web of Knowledge and the Scopus databases (Mahmud & Ali, 2023; Marques et al., 2019). This is proven by a significant number of documents examined in both researches. Furthermore, the study by Marques et al. (2019) demonstrates that plagiarism is the most used keyword in the publications in the Scopus database.

TABLE 1. Summary of Previous Studies

Author	Domain/Search Strategy	Data Source & Scope	Total documents examined	Subject area
Marques et al. (2019)	"academic dishonesty", "academic cheat*", or "academic misconduct"	Thomson Reuters' ISI Web of Knowledge (1972 to 2017)	503	Academic dishonesty and plagiarism
Mahmud & Ali (2023)	"academic misconduct", "academic integrity", "academic misconduct", "academic dishonesty", "plagiarism", "academic fraud", "academic integrity"	Scopus (two decades—2000-2010 and 2011-2020)	782	All subject area
Azemi et al., (2024)	"academic integrity", "students' academic misconduct", "cheating", "academic dishonesty", "higher education", "education", "university students", "learning", "academic fraud", "academic fraud", "academic misconduct", "universities", "academic honesty", "faculty", "misconduct"	Scopus (1986 to 2025)	594	All subject area

RESEARCH METHOD

The flow chart of the Bibliometric Analysis utilised in the study is illustrated in Figure 1. The study employs the TITLE-ABS-KEY strategy to conduct a comprehensive examination of the domain of academic dishonesty and higher education, with a particular emphasis on the publication title, abstract, and keywords as the search field. The search results will encompass any document that contains the keywords academic dishonesty and higher education in its title, abstract, or keywords. The study employs Scopus publication data which spans 22 years, from 2001 to November 15, 2023. The year 2001 marked the initial publication on academic dishonesty and higher education. Consequently, the study made maximum use of all publications in the database that were within the time frame. An initial bibliometric study was carried out on a set of 239 documents that were obtained from the Scopus database. The search string strategy focuses on the term academic dishonesty and higher education. The data were further screened, and no exclusions were made from the 239 documents identified.
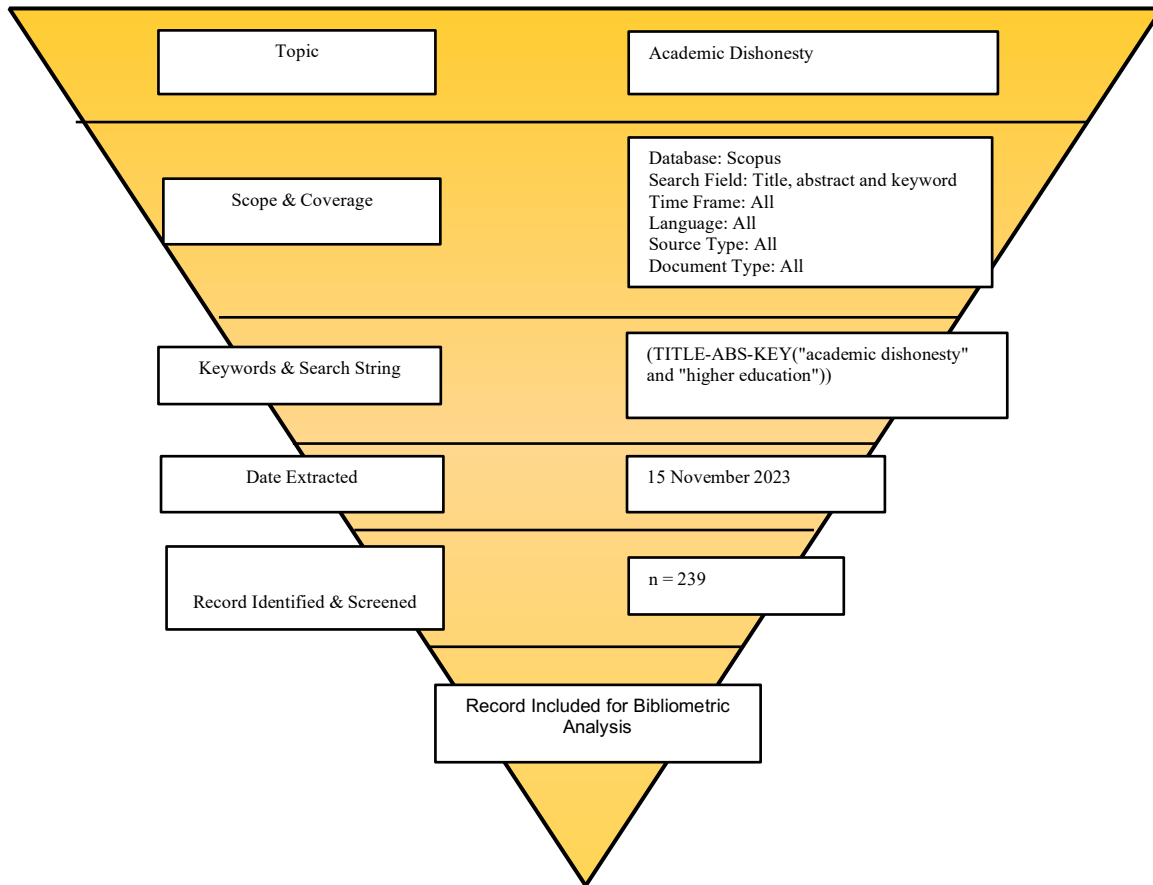
FIGURE 1. Flow Chart for Bibliometric Analysis

The data retrieved from the Scopus database was exported into standardised formats, including RIS, CSV and Microsoft Excel, for subsequent analysis. The data obtained were then summarised based on the type of document, the language of the source and the publication pattern. A citation analysis was then performed to determine the number of citations including total citations, average citations per publication and average citations per cited publication. The aim was to identify publications with a high number of citations and authors who had a notable impact on the field. Harzing's Publish or Perish software was used to evaluate the performance of the documents examined. Harzing's Publish or Perish is a software programme used to retrieve and analyse citation metrics (Harzing, 2023). It allows researchers to evaluate the performance of the publications based on various bibliometric and citation metrics such as the number of publications, the number of citations, number of citations per paper, number of citations per year, the h-index and the g-index.

In addition, the VOSviewer software, which generates bibliometric networks, was subsequently utilised to generate charts and diagrams corresponding to the frequency of published materials that were analysed using Microsoft Excel. An analysis of frequently occurring keywords was conducted to identify clusters of themes and developing areas of study in the field of academic dishonesty in higher education. Based on bibliometric data, this study can provide important insights into the subject matter of the research area, identify possible research questions, and track the development of research topics over time.

FINDINGS AND DISCUSSION

DOCUMENTS PROFILES

Document profiles in bibliometric analysis refer to the specific attributes of each publication within a particular dataset. This goes beyond the scope of titles and abstracts. This paper also provides a research area by analysing different aspects of document profiles. This analysis provides insights into research topics, key authors, and institutions, as well as research trends and collaborations that shape the overall development of the field. The division of 239 documents retrieved from the Scopus database pertaining to academic dishonesty on a global scale is presented in Tables 2, 3, and 4. The prevalent type of document is articles (71.97%), with book chapters (9.21%) and conference papers (14.23%) following suit. Review (2.09%), book (1.26%), conference review (0.84%), and editorial (0.42%) comprise the remaining document categories. This mirrors the publication patterns observed in other academic fields (Savage & Olejniczak, 2022; Azemi et al., 2024).

TABLE 2. Document Type

Document Type	Total Publications (TP)	Percentage (%)
Article	172	71.97%
Conference Paper	34	14.23%
Book Chapter	22	9.21%
Review	5	2.09%
Book	3	1.26%
Conference Review	2	0.84%
Editorial	1	0.42%
Total	**239**	**100.00**

Journal articles constitute most of the documents (73.64%), with conference proceedings (13.39%) and books (8.37%) following suit. A journal in the Scopus database is a peer-reviewed publication that is allocated an ISSN. However, it does not include one-off proceedings, newsletters, secondary sources, or patent publications. Conference proceedings, on the other hand, consist solely of full-text papers (Ahmi, 2021; Elsevier, 2023). Most of the documents are composed in English (93.8%), with Russian accounting for 2.48% (Table 4). Nevertheless, three documents are composed in a dual language.

TABLE 3. Source Type

Document Type	Total Publications (TP)	Percentage (%)
Journal	176	73.64%
Conference Proceeding	32	13.39%
Book	20	8.37%
Book Series	11	4.60%
Total	**239**	**100.00**

TABLE 4. Languages

Document Type	Total Publications (TP)	Percentage (%)
English	227	93.80%
Russian	6	2.48%
Spanish	4	1.65%
French	1	0.41%
German	1	0.41%
Moldavian	1	0.41%
Moldovan	1	0.41%
Romanian	1	0.41%
Total	**242***	**100.00**

*Three documents written in dual language

In addition, this study also provides a comprehensive overview of the topics included in the data set. This analysis not only highlights the general themes of the study but also reveals the unique themes and patterns that define the intellectual landscape of the field. Based on the analysis presented in Table 5, Scopus categorises the publications into 23 primary topic groups. Examining the distribution of publications across these categories reveals the predominant areas of study within this dataset. The results show an accumulation of publications in the broad field of social sciences (74.90%). The social sciences encompass a wide range of disciplines concerned with human behaviour and society and are therefore the most relevant field for the study of academic dishonesty in higher education. It is followed by computer science, arts and humanities, and engineering, while the other fields account for less than 10%. With the increasing use of technology in education, more research is being conducted in these areas, particularly on the impact of online learning environments on academic integrity. The dominance of articles originating from the field of social sciences highlights the interdisciplinary landscape of arguments relating to academic dishonesty (Azemi et al., 2024)

TABLE 5. Subject Area

Subject Area	Total Publications (TP)*	Percentage (%)
Social Sciences	179	74.90%
Computer Science	43	17.99%
Arts and Humanities	33	13.81%
Engineering	29	12.13%
Business, Management and Accounting	22	9.21%
Psychology	22	9.21%
Economics, Econometrics and Finance	14	5.86%
Medicine	11	4.60%
Agricultural and Biological Sciences	7	2.93%
Nursing	7	2.93%
Physics and Astronomy	6	2.51%
Biochemistry, Genetics and Molecular Biology	5	2.09%
Decision Sciences	5	2.09%
Energy	5	2.09%
Environmental Science	5	2.09%
Health Professions	4	1.67%
Mathematics	4	1.67%
Chemical Engineering	3	1.26%
Pharmacology, Toxicology and Pharmaceutics	3	1.26%
Earth and Planetary Sciences	2	0.84%
Chemistry	1	0.42%
Materials Science	1	0.42%
Neuroscience	1	0.42%

*Few documents belong to more than one subject area

PUBLICATION TRENDS

To identify the most prolific countries, the bibliographic analysis integrates an assessment of the quantity of publications ascribed to each country. The results for the ten countries with the greatest number of contributions are displayed in Table 6 The countries that have contributed most significantly to the academic field under study are the United States (74 publications), Malaysia (12 publications), South Africa (12 publications), the United Kingdom (12 publications), and Australia (10 publications). This result is in line with the findings of Mahmud and Ali (2023), Ali et al. (2021) and Azemi et al., (2024), who discovered that the most productive countries for academic dishonesty research are those in the United States. Surprisingly, only Malaysia ranks among the most productive countries in the study field among all the countries of East Asia. Since this topic is extensively debated in developed countries, there is therefore an incentive for East Asian nations to further explore it.

TABLE 6. Top 10 Publication Countries

Country	TP	%
United States	74	30.96%
Malaysia	12	5.02%
South Africa	12	5.02%
United Kingdom	12	5.02%
Australia	10	4.18%
Russian Federation	10	4.18%
Spain	10	4.18%
China	9	3.77%
Romania	8	3.35%
Canada	5	2.09%

Analysis indicates that over the past 20 years, there has been an upsurge in publications regarding academic dishonesty in higher education as shown in Figure 2. Conducting this type of analysis is crucial for observing changes in publication patterns over different periods, for visualising the evolution of research objectives and for pointing to future areas of research growth. This pattern is consistent with earlier research on academic dishonesty (Mahmud & Ali, 2023; Marques et al., 2019; Azemi et al., 2024). Indeed, there has been an enormous increase in the quantity of publications over the past triennial period (2020 to 2022). It might be contended that, given the COVID-19 pandemic, most academic activities were done virtually, a relatively new medium. To maintain programme continuity, the educational system mostly concentrated on the platforms at its disposal, even as it experimented with strategies to potentially lower academic dishonesty.

The year 2020 recorded the highest annual citation count with 395 citations, followed by 2022 with 366 citations. Despite 2022 having the maximum quantity of publications during the specified period, only 136 citations were received. On the other hand, since the data collected is until 15 November 2023, there are still more documents to be published for the remaining months of the year. Thus, the number does not represent the whole year's number of publications and citations.
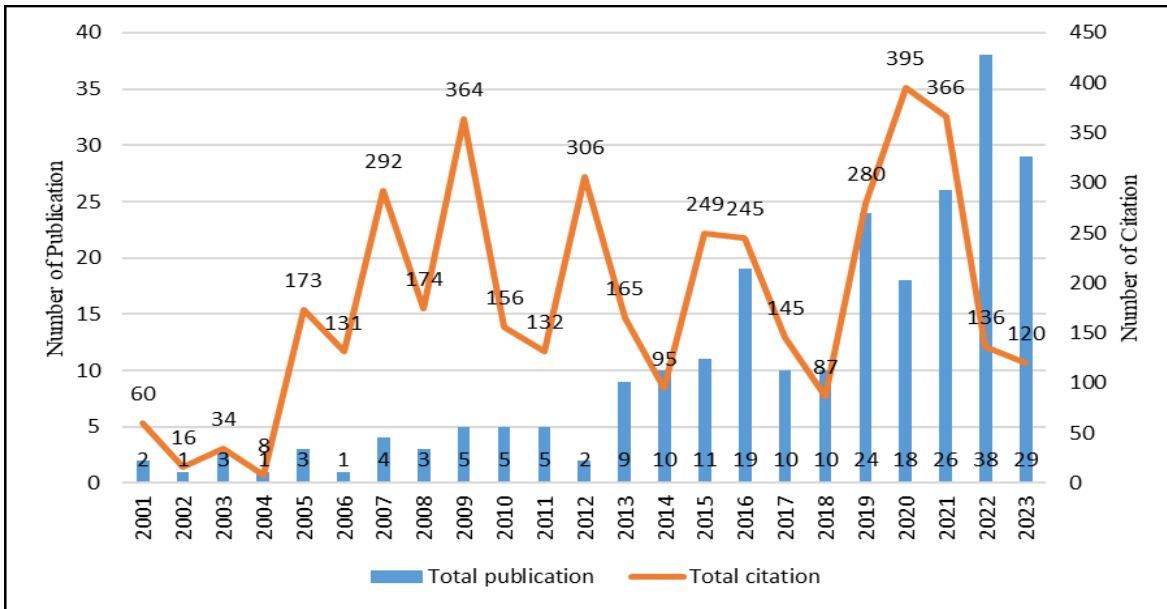
FIGURE 2. Number of Publications and Citations over Years

An in-depth examination of annual publications is presented in Table 7. One publication on academic dishonesty is produced annually. In 2008, 2011, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, and 2023, the quantity of published works exceeded the quantity of cited works. This indicates the publication's level of credibility, as it demonstrates that not all publications are being cited during the year. During the sample period, the h-index varied from 1 to 11. Eleven publications of academic dishonesty have received a minimum of eleven citations, as reported by the maximum h-index in 2019. Additionally, the g-index represents the total number of citations accumulated. As of 2021, the maximum g-index signifies a minimum of 19 publications that have garnered a cumulative total of 361 citations.

TABLE 7. Citations per Year

Year	TP	NCP	TC	C/P	C/CP	h	g	Year	TP	NCP	TC	C/P	C/CP	h	g
2001	2	2	60	30.00	30.00	2	2	2012	2	2	306	153.00	153.00	2	2
2002	1	1	16	16.00	16.00	1	1	2013	9	8	165	18.33	20.63	7	8
2003	3	3	34	11.33	11.33	3	3	2014	10	8	95	9.50	11.88	4	8
2004	1	1	8	8.00	8.00	1	1	2015	11	9	249	22.64	27.67	7	9
2005	3	3	173	57.67	57.67	3	3	2016	19	16	245	12.89	15.31	8	15
2006	1	1	131	131.00	131.00	1	1	2017	10	8	145	14.50	18.13	7	8
2007	4	4	292	73.00	73.00	4	4	2018	10	9	87	8.70	9.67	5	9
2008	3	2	174	58.00	87.00	2	2	2019	24	20	280	11.67	14.00	11	16
2009	5	5	364	72.80	72.80	4	5	2020	18	16	395	21.94	24.69	9	16
2010	5	5	156	31.20	31.20	5	5	2021	26	20	366	14.08	18.30	6	19
2011	5	4	132	26.40	33.00	4	4	2022	38	15	136	3.58	9.07	6	10
								2023	29	8	120	4.14	15.00	3	8

Notes: TP=total number of publications; NCP=number of cited publications; TC=total citations; C/P=average citations per publication; C/CP=average citations per cited publication; h=h-index; and g=g-index.

CITATION ANALYSIS

This section shows a citation metric that is a fundamental aspect of bibliometric analysis. The impact and influence of a particular publication are determined by the frequency with which it is referenced by other scholarly works. Overall, this paper discusses the metrics commonly used in academia: the number of citations, which refers to the total number of references to work; the h-index, which considers both productivity and impact; and the citation rate, which refers to the number of citations per year. Table 8 shows the citation metrics generated from Harzing's Publish or Perish software. There are 4129 citations in the 239 papers that were identified, representing an average of 17.28 citations per paper. On average, there are two authors per publication. Both *h*-index and *g*-index show a good citation impact. The *h*-index is 34 indicates that 34 documents in academic dishonesty had been cited at least 34 times, while the g-indexed signals that at least 58 publications cumulatively have received at least 3364 citations.

TABLE 8. Citations Metrics

Metrics	Data
Papers	239
Number of Citations	4129
Citations per Paper	17.28
Authors per Paper	2.77
h-index	34
g-index	58

Further analysis was conducted on the documents. Table 9 summarises the information on the highly cited documents. The citation count serves as an indicator of the paper's quality and impact within the field of study (Vrat, 2020). In this way, it can be determined which individuals and articles have continuously contributed to the corpus of information on academic dishonesty. "The Use and Abuse of Cell Phones and Text Messaging in the Classroom: A Survey of College Students" is the most cited document, with 221 citations, followed by "Situational and personal causes of student cheating" which is cited 162 times. Both papers entitled "Challenges of remote assessment in higher education in the context of COVID-19: a case study of Middle East College" and "Transitioning to E-Learning during the COVID-19 pandemic: How have Higher Education Institutions responded to the challenge?" have been cited 152 times since their year of publication. Undoubtedly, the number of citations for a work has increased over time since its initial publication. In line with previous bibliometric studies, it has been shown that the degree of influence and importance of a particular work within a subject area correlates directly with the frequency of its citations (Ferreira et al., 2014).

From different perspectives, out of 10 highly cited documents, the document entitled "Transitioning to E-Learning during the COVID-19 pandemic: How have Higher Education Institutions responded to the challenge?" has the highest number of cites (76 cites) per year followed by "Challenges of remote assessment in higher education in the context of COVID-19: a case study of Middle East College" with 50.67 cites per year. Even though the document was published in 2020, scholars in the field of academic dishonesty continue to consult it. Surprisingly, a document entitled "Chatting and cheating: Ensuring academic integrity in the era of ChatGPT" has been cited 106 times although it was just published in the year 2023. This demonstrates that academic dishonesty and the current era of ChatGPT are emerging and current issues.

TABLE 9. Highly Cited Documents

No.	Authors	Year	Title	Cites	Cites per Year	Source
1	D.R. Tindell, R.W. Bohlander	2012	The Use and Abuse of Cell Phones and Text Messaging in the Classroom: A Survey of College Students	221	20.09	College Teaching
2	D.A. Rettinger, Y. Kramer	2009	Situational and personal causes of student cheating	162	11.57	Research in Higher Education
3	F.M. Guangul, A.H. Suhail, M.I. Khalit, B.A. Khidhir	2020	Challenges of remote assessment in higher education in the context of COVID-19: a case study of Middle East College	152	50.67	Educational Assessment, Evaluation and Accountability
4	D. Turnbull, R. Chugh, J. Luck	2021	Transitioning to E-Learning during the COVID-19 pandemic: How have Higher Education Institutions responded to the challenge?	152	76	Education and Information Technologies
5	M. Brimble, P. Stevenson-Clarke	2005	Perceptions of the prevalence and seriousness of academic dishonesty in Australian universities	144	8	Australian Educational Researcher
6	H.A. Klein, N.M. Levenburg, M. McKendall, W. Mothersell	2007	Cheating during the college years: How do business school students compare?	138	8.63	Journal of Business Ethics
7	C.-H.S. Lin, L.-Y.M. Wen	2007	Academic dishonesty in higher education-a nationwide study in Taiwan	135	8.44	Higher Education
8	H.J. Passow, M.J. Mayhew, C.J. Finelli, T.S. Harding, D.D. Carpenter	2006	Factors influencing engineering students' decisions to cheat by type of assessment	131	7.71	Research in Higher Education
9	T.L. Giluk, B.E. Postlethwaite	2015	Big Five personality and academic dishonesty: A meta-analytic review	127	15.88	Personality and Individual Differences
10	D.R.E. Cotton, P.A. Cotton, J.R. Shipway	2023	Chatting and cheating: Ensuring academic integrity in the era of ChatGPT	106	106	Innovations in Education and Teaching International

Table 10 shows the five most important authors who have published their work on the topic of academic dishonesty. The publications of the different authors have been displayed to determine which scholars have made the greatest contributions to this topic. This analysis facilitates the identification of notable scholars who have contributed significantly to the formation of the existing understanding of the topic. Analysing the institutional affiliation of authors can provide information about the specific areas of expertise of certain institutions or countries. This can be particularly useful when it comes to identifying prominent research institutions and potential partners in a particular sector. The result indicates that most of the documents are contributed by authors from the United States. Harding, T.S. and Carpenter, D.D. each has six publications with 177 citations in the discipline. In the interim, University of Michigan's C.J. Finelli contributed five articles totalling 161 citations. Two authors affiliated with Sabaragamuwa University in Sri Lanka each have contributed five and four publications, which have received a total of eight citations.

TABLE 10. Top 5 Authors

Author Name	Total number publications	Cites	Affiliation	Country
Carpenter, D.D.	6	177	Lawrence Technological University	United States
Harding, T.S.	6	177	California Polytechnic State University	United States
Finelli, C.J.	5	161	University of Michigan	United States
Vasanthapriyan, S.	5	8	Sabaragamuwa University of Sri Lanka	Sri Lanka
Chathumini, K.G.L.	4	8	Sabaragamuwa University of Sri Lanka	Sri Lanka

The majority of the highly cited articles appeared in journals. Upon further examination of the top five journal publications, as shown in Table 11, it was determined that the Journal of Academic Ethics boasts the most publications (11 in total) and the highest number of citations (224). Voprosy Obrazovaniya Educational Studies Moscow, which has a total of 31 citations and six publications, comes in second. While the journals Education and Information Technologies and Computers and Education have a relatively smaller number of publications implicated in academic dishonesty, their citation counts are quite substantial at 268 and 157 citations, respectively.

TABLE 11. Top 5 Journal Publication

Source Title	TP	Publisher	Cite Score	SJR 2022	SNIP 2022	NCP	TC	C/P	C/CP
Journal of Academic Ethics	11	Springer Nature	4.2	0.579	1.265	10	224	20.36	22.40
Voprosy Obrazovaniya Educational Studies Moscow	6	National Research University Higher School of Economics	2.5	0.378	0.884	6	31	5.17	5.17
Computers and Education	5	Elsevier	23.8	3.682	5.026	5	268	53.60	53.60
International Journal for Educational Integrity	5	Springer Nature	4.5	0.905	1.823	5	61	12.20	12.20
Education and Information Technologies	4	Springer Nature	8.2	1.249	2.26	3	157	39.25	52.33

Notes: TP= total number of publications; Cite Score= average citations received per document published in the serial; SJR= SCImago Journal Rank measures weighted citations received by the serial; SNIP= Source Normalized Impact per Paper measures actual citations received relative to citations expected for the serial's subject field. NCP=number of cited publications; TC=total citations; C/P=average citations per publication; C/CP=average citations per cited publication

AUTHOR'S KEYWORDS

An additional noteworthy finding obtained from the bibliometric analysis concerns the keywords utilized by the authors. The authors' keywords provide important insights into specific themes within a larger topic. This analysis can show the development of themes and trends within a particular topic by analysing frequently occurring terms and keyword clusters. Table 12 presents the top ten keywords utilized by authors in the domain of academic dishonesty. It is evident from this academic discipline that issues of academic integrity are pervasive. The authors ranked academic dishonesty (62.76%), higher education (50.21%), and cheating (25.52%) as their three

most frequently used keywords. In addition, student e-learning and plagiarism account for 23.85% respectively, of the primary keywords associated with the subject matter under consideration. Academic integrity is an additional noteworthy keyword associated with the author, comprising 23.43% of the overall keyword usage. This finding aligns with previous investigations (Mahmud & Ali, 2023), which have identified plagiarism as a commonly encountered concept in scholarly works.

TABLE 12. Main Keywords in Academic Dishonesty Area

Author Keywords	Total Publications (TP)	Percentage (%)
Academic Dishonesty	150	62.76%
Higher Education	120	50.21%
Cheating	61	25.52%
Students	57	23.85%
E-learning	57	23.85%
Plagiarism	57	23.85%
Academic Integrity	56	23.43%
Gender	37	15.48%
Human	35	14.64%
Ethics	35	14.64%

The relative importance of each keyword is conveyed by VOSviewer via the size of the generated labels and nodes (Ahmi, 2021). Figure 3 illustrates the network visualization of the principal terms that are linked to academic dishonesty. This network visualization illustrates the co-occurrence of potential research topics of academic dishonesty in higher education and the keywords used by the authors. The dimensions and meaning of the nodes within the network can serve as indicators of the meaning and interrelationships of specific terms. This can help to identify the most commonly used and important keywords within the field of study. It shows that academic integrity and higher education are the next greatest nodes in the network, after academic dishonesty. The high weightage of the keyword utilized in the dataset is indicated by these nodes. This is consistent with the research keywords academic dishonesty and higher education, which appear frequently in Table 11. Conversely, the nodes of ethics and e-learning are comparatively more compact when compared to the preceding three nodes.

The degree of item connectivity is denoted by the distance between each node (Ahmi, 2021). Larger nodes indicate more frequently used keywords, and the size of a node can also indicate how frequently a term is used. In addition, colour coding can be used to distinguish between different research topics or topic clusters. Academic integrity, higher education, and academic dishonesty are intricately intertwined. Indeed, academic integrity and higher education are in close proximity, suggesting the existence of a robust correlation between the two. Furthermore, online assessment should be given due consideration as it is intricately connected to instances of academic dishonesty. This aligns with the viewpoint expressed by Madugula et al. (2023), which posits that online assessment does not offer a viable resolution to the challenges posed by academic malpractices.
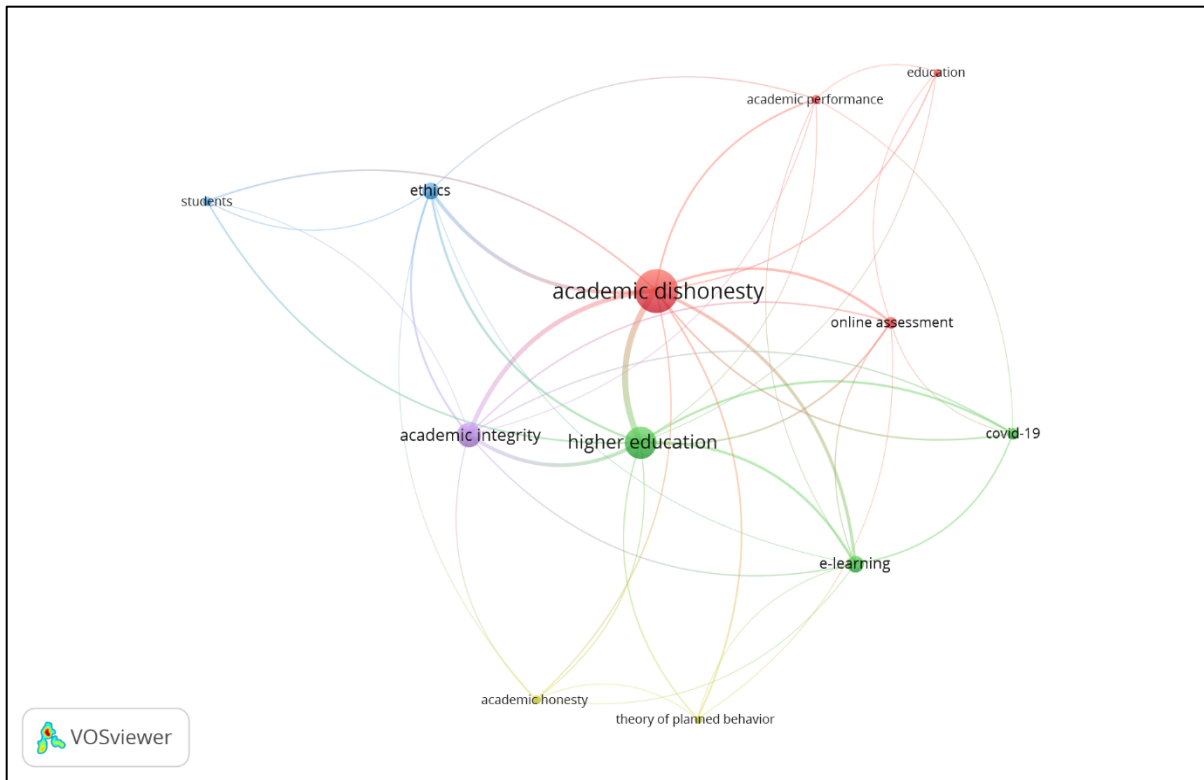
FIGURE 3. Network visualisation map of the co-occurrence analysis of author's keywords

In this study, an analysis of frequently occurring keywords was conducted using VOSviewer to identify topic clusters and emerging areas of study in the field of academic dishonesty in higher education. VOSviewer uses a clustering algorithm to group keywords based on their co-occurrence in the analysed publications. Keywords that frequently occur together in keywords are likely to represent related topics within the subject area. By analysing the resulting clusters and the keywords they contain, it provides valuable insights into the most important research topics and potentially uncover emerging areas of study related to academic dishonesty.

Upon closer examination, the authors' keywords can be categorized into five primary clusters as shown in Table 13. By grouping these terms into clusters, the map can visually represent the primary subject areas of study on a particular topic. Academic dishonesty, academic performance, education, and online assessments comprise the first cluster of discussions. As a group of keywords, the second cluster consists solely of the terms e-learning, higher education, and Covid-19. The third and fourth clusters, meanwhile, are limited to two keywords. The third cluster comprises ethics and students, whereas the fourth cluster comprises the theory of planned behaviour and academic dishonesty. This result is consistent with the earlier bibliometric study by Marques et al. (2019), which reports that the theory of planned behaviour is one of the models proposed to explain academic dishonesty. However, academic dishonesty is a single keyword in the fifth cluster item. These clusters are consistent with study by Ahmad and Fauzi (2024) which clearly shows three distinct clusters, each representing different themes within the co-occurrence network. Specifically, keywords associated with the methodology of studying academic misconduct, keywords related to ethics, and the keywords pertaining to academic integrity.

TABLE 13. Cluster of the co-occurrence analysis of author's keywords

Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Academic dishonesty	Covid-19	Ethics	Academic dishonesty	Academic dishonesty
Academic performance	e-learning	Students	Theory of planned behaviour	
Education	Higher education			
Online assessment				

CONCLUSION

This bibliometric analysis has provided useful insights into the burgeoning field of research on academic dishonesty in higher education. The number of scholarly articles on academic dishonesty has increased significantly, particularly since 2005, suggesting that the topic is gaining increasing recognition and concern in the academic community. The authors frequently use the terms academic integrity, higher education, academic dishonesty and plagiarism as central keywords in their academic discourse. The analysis has identified five main research clusters that are closely linked to cases of academic dishonesty. Most publications come from developed countries. This result shows that the problem of academic dishonesty in higher education is recognised worldwide.

The findings of this study revealed an increasing trend in academic dishonesty publications, particularly between the year 2020 and 2022, which is consistent with the growing concern within the academic community about the potential misuse of artificial intelligence (AI) and the evolving landscape of student misconduct. The most frequently occurring keywords included academic dishonesty, higher education, cheating, students and e-learning. This result is consistent with the established focus in this area and emphasises the ongoing efforts to address traditional cheating and the new challenges posed by technology. Thematic clusters identified by analysing the co-occurrence of keywords include topics such as academic integrity and ethical considerations. These clusters are consistent with the multi-pronged approach taken by the academic community to combat academic dishonesty and promote a culture of academic integrity. The analysis has revealed that the focus is on e-learning. A deeper dive could shed light on whether research is adequately keeping pace with the rapid advances in AI-powered learning technologies. The emphasis on established themes such as academic performance may suggest that a greater focus on preventative measures is needed to ensure that academic integrity is matched with student performance.

By comprehensively examining this complicated issue using various research methods and cultivating global collaboration, educators and policymakers can formulate effective tactics to improve academic integrity and create a more truthful and principled educational environment. The future of research on academic dishonesty depends not only on measuring the problem but also on developing and implementing evidence-based strategies to promote a culture of authentic learning and intellectual progress in higher education. Although the research covers a wide range of geographical areas, further international cooperation is needed to share the most effective methods to combat the global problem of academic dishonesty. This study serves as a springboard for further research on the multifaceted topic of academic dishonesty. By utilising a bibliometric approach, the result demonstrates that the topic area remains relevant and impactful and directly addresses the evolving challenges facing higher education institutions.

The analysis is based on a single database and a specific approach, so further research is needed to validate and extend these results. Although bibliometrics provides useful insights, the

use of qualitative research methods such as interviews and focus groups could provide a more comprehensive knowledge of academic dishonesty. Following this analysis, there are several potential areas for future research investigating the effectiveness of different strategies to prevent and discourage academic dishonesty. Furthermore, understanding the cultural and institutional elements that lead to academic dishonesty could also provide various prevention techniques. In addition, researchers could examine the lasting effects of academic dishonesty on students, faculty, and educational institutions. By exploring these areas in depth, researchers can make valuable contributions to promoting successful techniques to improve academic integrity and cultivate a climate of integrity and ethical behaviour in higher education.

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