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JOWUA: Bibliometrics Analysis of Research Publication Between 2019 and 2024

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Abstract

Journal of Wireless Mobile Networks, Ubiquitous Computing, and Dependable Applications articles published between 2019 and 2024 will be examined in this bibliometric study to give an extensive overview of research trends, citation patterns, and academic contribution. Key research themes, topic progression, and the journal's influence within its academic area are identified by applying a range of bibliometric methods and techniques, such as citation analysis, co-authorship mapping, and keyword frequency analysis. Computer networks and applications have made substantial contributions to multidisciplinary research, which is on the rise, according to the analysis. In particular, the study focuses reference to a relatively small but influential group of writers whose contributions have molded the intellectual climate of the publication, as well as to several up-and-coming authors and organizations. Computer networks stand out as key contributions to the area, as shown by citation analysis, which reveals that studies on computer applications have gained significant consideration. One sign of a more globally integrated academic community is the development of co-authorship networks, which show that researchers from all over the world are working together more and more. This data also shows that the journal has an influence outside of academia, as the number of citations from other fields has been growing over the past five years.

Keywords: Academic Impact, Bibliometric Analysis, Citation Analysis, Co-authorship, Research Trends, JOWUA, Keyword Analysis, Global Collaboration.

1 Introduction

The Latin term "biblio" and the Greek word "metrics" form the modern English word "bibliometrics," which refers to the mathematical study of bibliography. The field involves bringing mathematical and statistical concepts to books and other forms of written communication. In 1969, Alan Pritchard proposed the word (Pritchard, 1969). Bibliometrics was utilized to examine different facets of scientific communication. Through the use of mathematical and statistical calculations, bibliometrics provides a

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quantitative assessment of the publication patterns and authorship of all forms of communication, whether large and small. Finding patterns in publication frequency, author productivity, citation impact, coverage, etc, is the goal of bibliometric research. The objective of the online peer-reviewed journal JOWUA is to provide as a platform for scholarly and professional discussions on any and all issues associated with ubiquitous computing, wireless mobile networks, and the reliable applications of these technologies on a global scale. The scholarly journal JOWUA publishes peer-reviewed technical articles covering the latest developments in wireless mobile networks, ubiquitous computing, and the reliable applications of these fields. Papers addressing either theoretical or practical aspects of these topics are accepted. Being an open access journal, all of JOWUA's published articles are freely available on this website. Each year, guest editors from many fields contribute to JOWUA's four issues (March, June, September, and December). Bibliometric data for the years 2019–2024 from the Journal of Wireless Mobile Networks, Ubiquitous Computing, and Dependable Applications are presented in this study. The author's productivity, international collaboration, and paper distribution patterns were the primary metrics for citations and publications.

2 Literature Survey

The leading Wireless Mobile Networks journals have been the subject of several analyses that have compared the relative growth rates, patterns of collaboration, and authorship trends among the journals. The primary goal of conducting those literature reviews was to have a better understanding of the study's parameters and methods in order to better define its objectives. The following are a few of the reviews. A key method for managing and evaluating scientific research and building national research strategy is s, which is the science of measuring and analysing science. One of the primary goals of bibliometrics is to use literature reviews as a basis for collecting, manipulating, interpreting, and predicting a wide range of variables, including scientific progress and performance (Pritchard, 1969). Evaluating academic publications is one component of researching research productivity (Van Raan, 1997). Scholarly publications play an essential role in disseminating research findings from all across the globe, especially when it comes to current themes such as computer (Kevin et al., 2009) and networking (Guleid et al., 2021). Research productivity (Bambo & Pouris, 2020), topical coverage (Onyancha, 2017), citation-based influence (Pouris, 2005), and consumers behaviors (Saad, 2020) can all be uncovered through their study. Despite the difficulties developing nations in Asia and Africa face in maintaining their journals, these evaluations disproportionately target journals in such regions in an effort to find short-term solutions to improve their research quality and reach (Nwagwu & Makhubela, 2017). Given that there is a strong correlation between a country's research production and the number of national research journals, this is very important (Basu, 2010).

3 Data Analysis and Findings

Total Documents

Table 1: JOWUA Total Publications and Citations Metrics

YEAR	TD	TC	CPP
2019	20	127	1.821
2020	26	111	2.071
2021	25	181	3.065
2022	35	324	5.314
2023	57	177	1.517
Total	163	920	

Citations appeared in Table 1 every year during the research period. A grand total of 920 citations have been tracked in 163 publications. The year 2022 had the most citations included, with 324 total, or 5.314 per manuscript. The year 2023 followed in second, with 177 citations, or 1.517 per paper. With an average of 2.071 citations per article, 2020 had the lowest number of citations observed. On average, a work will have almost 3.7 (or 3.065) citations. This proves that the writers generated from a variety of sources for their writings.

SDGs (UN)

The United Nations' Sustainable Development Goals (SDGs) are an important global effort to improve the future and accelerate economic advancement. Nevertheless, there has been an uneven distribution of research efforts, and there has been inadequate progress towards these objectives. The current study set out to answer this question by assessing the SDGs by looking at how research-friendly they are as individuals.

Table 2: Sustainable Development Goals defined by United Nations from 2019 to 2022

Documents	Year	Value
SDG	2019	1
SDG	2020	1
SDG	2021	2
SDG	2022	4

Table 2 shows the change in the total number of UN-defined Sustainable Development Goals papers from 2019 to 2022.

Annual Growth of Publication

Journals' annual growth of publishing indicates how much their publication volume has increased from a particular period to another.

Table 3: Annual Growth of Publication

Year	Total No. of papers	Annual Growth
2019	21	0
2020	26	+6
2021	25	-1
2022	35	+10
2023	59	+24
2024	77	+18

Table-3 show the number of papers published from 2019 to 2024, and Figure 1 shows the variation in publishing. This information can be used to obtain a summary of publication. The number of articles published was 243. The research shows that growth is good from 2019 to 2020, 2022 to 2023, and 2023 to 2024, but negative from 2020 to 2021. With a growth rate of 24 documents increased in 2023, 2024 had the second-highest, with 18 documents increased. The yearly growth result shows that, with the exception of a few years, the greatest annual growth was positive. It shows that the publication is growing each year and that researchers are interested in publishing in the journal additionally.

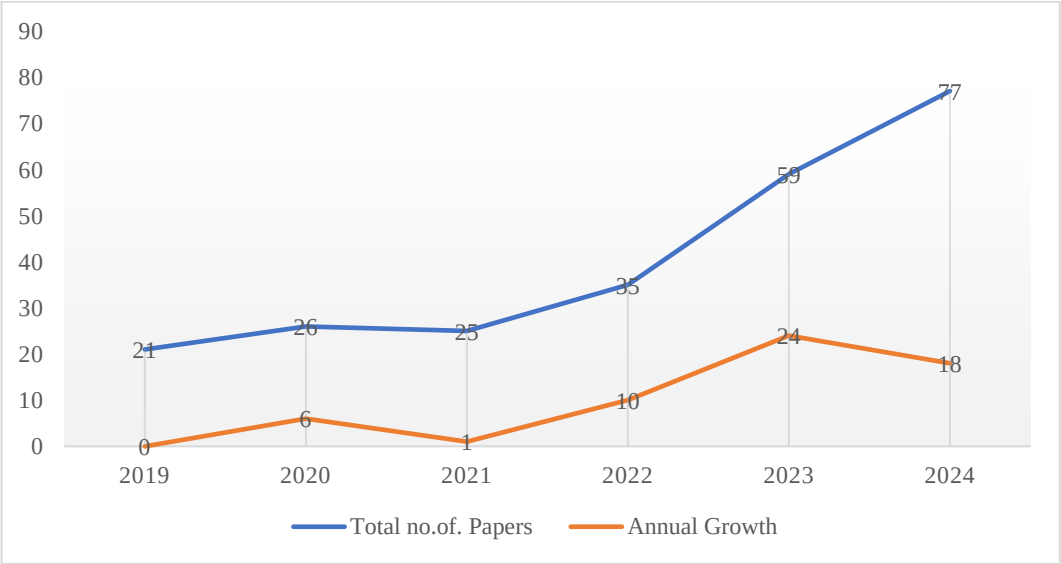

Figure 1: Annual Growth of Publication

4 Appearance of Citations

Total and Self Cites

The change over the last five years in the total number of citations received by published articles in a journal, including self-citations. Journal as seen in Figure 2, self-citation occurs when an article from a single journal is cited in other publications published by the same journal.

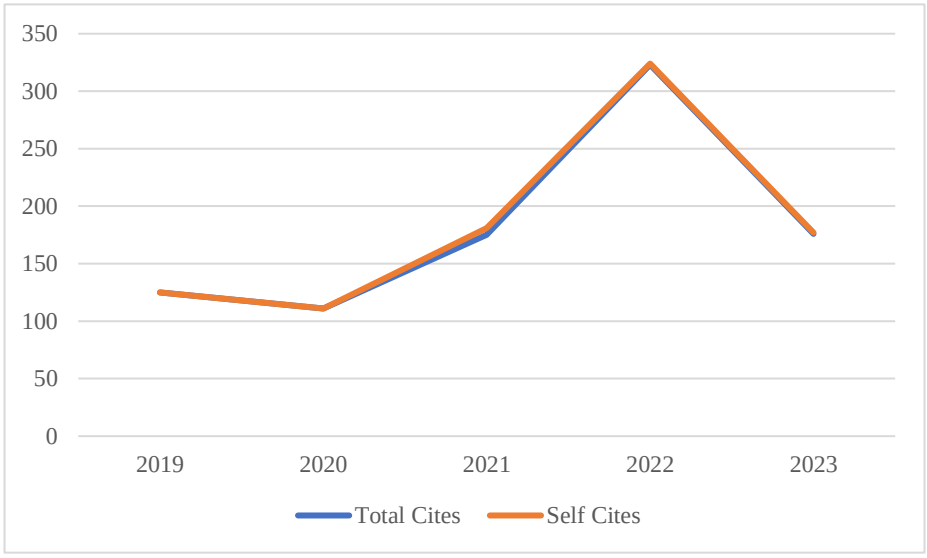

Figure 2: Total and Self Cites from 2019-2023

Cited and Uncited Documents

The total number of documents published from 2019 to 2024 is 163. Out of those 163 documents the ratio of cited to uncited items in a journal, separated into five-year periods, for the years 2019–2023, is displayed in Figure 3.

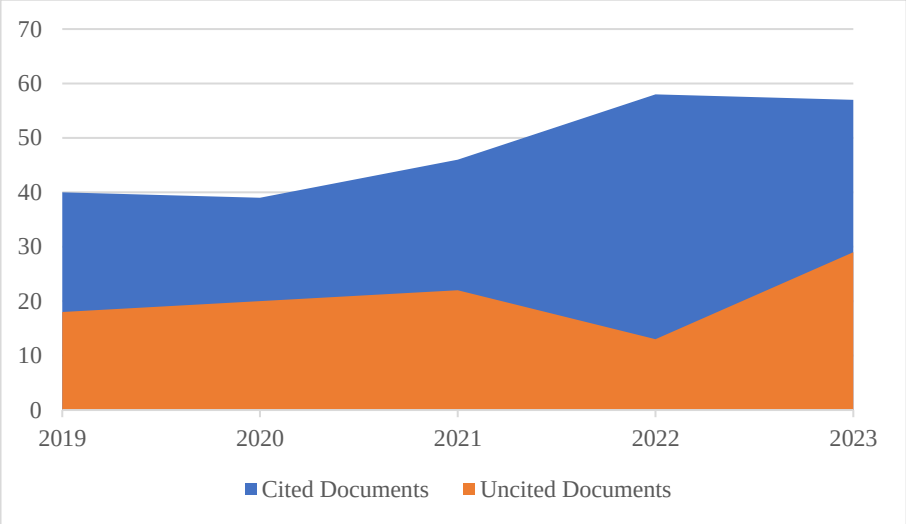

Figure 3: Cited and Uncited Documents from 2019-2023

Top International Collaborations

The conceptual web, embedded systems, autonomous computing, programming paradigms, user interfaces, software infrastructures, parallel/distributed/grid computing, novel machine architectures, privacy, trust, insider threats, and emerging standards and technologies are just a few of the many topics covered in these publications. Other topics include energy efficient networks, ad hoc networks, RFID technologies, mobile internet, mobile computer systems, and wireless mobile networks. The majority of the journal's publications appear to be about safeguarding machine learning-based security vulnerabilities. Mobile computing received third place, with the architecture model placing in second.

Table 4: Top Cited International Collaboration Documents

AUTHOR	YEAR	COUNTRY
(Nowakowski et al., 2021)	2021	Poland
(Kolomeets et al., 2021)	2021	Russia
(Casolare et al., 2021)	2021	Italy
(Leitner et al., 2021)	2021	Austria
(Sudipa et al., 2022)	2022	Indonesia
(Giorgi et al., 2022)	2022	Italy
(Megías et al., 2022)	2022	Spain
(Costa et al., 2022)	2022	Italy
(Boualem et al., 2022)	2022	France
(Cabra et al., 2022)	2022	Colombia
(Grammatopoulos et al., 2022)	2022	Greece
(Bakhtina et al., 2022)	2022	Estonia
(Jung, 2022)	2022	Korea
(Utomo & Latukismo, 2022)	2022	Indonesia
(Tran et al., 2023)	2023	Vietnam
(Srinadi et al., 2023)	2023	Indonesia
(Solikin & Darmawan, 2023)	2023	Indonesia
(Hermansyah, 2023)	2023	Indonesia
(Rosnelly et al., 2023)	2023	Indonesia
(Sunarto et al., 2023)	2023	Indonesia
(Bharathi & Rekha, 2023)	2023	India
(Udayakumar et al., 2023)	2023	India

(Mansouri, 2023)	2023	Saudi Arabia
(Khasawneh & Khasawneh, 2023)	2023	Jordan
(Sofiene et al., 2023)	2023	Saudi Arabia
(Ocaña-Fernández et al., 2023)	2023	Peru
(Alharbi & Alabdulatif, 2023)	2023	Saudi Arabia
(Fuster-Guillén et al., 2023)	2023	Perú
(Adriani et al., 2023)	2023	Indonesia
(Nikitina et al., 2023)	2023	Russia
(Malathi et al., 2024)	2024	India
(Mohamed et al., 2024)	2024	India
(Ramana & Ravisankar, 2024)	2024	India
(Satish & Herald, 2024)	2024	India
(Sathyanarayanan & Srikanta, 2024)	2024	India
(Mansouri et al., 2024)	2024	Tunisia
(Hernández et al., 2024)	2024	Perú
(Smadi et al., 2024)	2024	UAE
(Danielle et al., 2024)	2024	Russia
(Gustavo et al., 2024)	2024	Perú

In Table 4, you can see the top 40 papers referenced from international collaborations in the Journal of Wireless Mobile Networks, Ubiquitous Computing, and Dependable Applications from 2019 to 2024.

5 Conclusion

According to the study's bibliometric analysis, 243 papers were published in the Journal of Wireless Mobile Networks, Ubiquitous Computing, and Dependable Applications between 2019 and 2024. In 2024, the maximum number of papers published was 77. Publication rates range from an average of 6.15 percent to a maximum of 39.02 percent in 2024. In all, 57 articles had 177 citations placed; the year 2022 had the most, with 324 citations appended, or 5.314% of all papers. The study found that the number of papers published in the journal under consideration is rising steadily, that writers are making an effort to raise the amount of collaborative writing, and that they are citing more sources in their articles, which is good for the citation index of other authors.

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