

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Library Philosophy and Practice (e-journal)

Libraries at University of Nebraska-Lincoln

Summer 6-13-2021

Scientometric review of Archnet-IJAR: International Journal of Architectural Research: A study of Scopus based evidence

Md Safiqur rahaman

Librarian, Deanship of Library Affairs, King Fahd University of Petroleum and Minerals, Dhahran, KSA,
mdsafiqur@kfupm.edu.sa

Khadeeja M N Ansari

Assistant Professor, College of Design, PO. 1982, Imam Abdulrahman Bin Faisal University, Dammam, KSA,
kmnansari@iau.edu.sa

Follow this and additional works at: <https://digitalcommons.unl.edu/libphilprac>



Part of the [Library and Information Science Commons](#)

rahaman, Md Safiqur and Ansari, Khadeeja M N, "Scientometric review of Archnet-IJAR: International Journal of Architectural Research: A study of Scopus based evidence" (2021). *Library Philosophy and Practice (e-journal)*. 5872.

<https://digitalcommons.unl.edu/libphilprac/5872>

Scientometric review of Archnet-IJAR: International Journal of Architectural Research: A study of Scopus based evidence

Khadeeja M N Ansari

Assistant Professor, College of Design, PO. 1982,
Imam Abdulrahman Bin Faisal University, Dammam, KSA

kmnansari@iau.edu.sa

ORCID: 0000-0002-1451-3822

Md Safiqur Rahaman

Librarian, Deanship of Library Affairs,
King Fahd University of Petroleum and Minerals, Dhahran, KSA

mdsafiqur@kfupm.edu.sa

Contact: 0138601308

ORCID: 0000-0003-1367-2618

Abstract:

Purpose: The study conducted to assess the Archnet-IJAR journals based on scientometric analysis, a systematic approach to the comprehensive review of research trends and productivity.

Methodology: The scientometric tools used to examine the journal's scientific research performances during 2011-2020 collected data from the Scopus database and analyzed in Vosviewer and Biblioshiny ((R language). *Results:* There are 424 research papers published from 2011 to 2020. A steady increase noted in the development of literature, out of 694 authors and 547 multi-authored documents found. *Architecture, Architectural Education, and Design Studio* found highly used author keywords. Qatar identified as the most impactful country with 24 papers and 14 citations. *Originality:* The systematic approach in reviewing this journal's research trend and productivity helps the researcher identify the trends, authors, and affiliation for research collaboration. The detailed analysis helps in the journal's self-assessment and also to pinpoint the needs in further development.

Keywords: *Scientometric Analysis; Journals Assessment; Research Trends; Network collaboration, Research Productivity*

1: Introduction and Journal profile:

Archnet-IJAR: International Journal of Architectural Research (ISSN: 2631-6862) is an open-access interdisciplinary journal in Architecture and Urban Studies, based in Qatar and published by Emerald Group Publishing Ltd. Professor Ashraf M. Salama is the Editor-in-chief. This journal was launched in 2007 as part of Archnet. It is regarded as the most suitable digital platform for planners, interior designers, architects, urban designers, landscape architects, and scholars working in these subject areas. Famous international publisher Emerald acquired *Archnet-IJAR* to foster its exposure and international appeal while enhancing its global presence since 2018. *Archnet-IJAR* indexed in the internally renowned databases, such as Arts and Humanities Citation Index, Scopus, Avery Index to Architectural Periodicals, CNKI: China National Knowledge Infrastructure, Clarivate Analytics/Web of Science, EBSCO-Current Abstracts-Art and Architecture, and ProQuest. Journal impact quartile for Architecture is Q1, ranked 22/126, while for Urban studies Q2, ranked 53/200 (Emerald publishing, 2021). This study scientometrically evaluates the "*Archnet-IJAR: International Journal of Architectural Research*" based on the various scientometric tools, namely prolific authors, citation, literature growth, productive institution, collaborative countries, research trends, and collaborated network analysis of the author, affiliation, country, citations, and references. A Scientometrics analysis includes all quantitative aspects of science, communication in science, and science policy (Tague-Sutcliffe, 1992). It is also regarded as bibliometric measurements for evaluating scientific development, social relevance, and impact application in science and technology (A, Bookstein, 1995). Scientometric applications are essential methods for assessing research productivity and the quantitative analysis of a research publication. Therefore, this journal is considered for the study as its one of the famous and prestigious journals in Architecture and Urban studies research; also, Scientometrics and related studies have never been done to identify this journal's knowledge structure and research trend. Due to gaining popularity over time and a highly reliable venue for architects, academicians, and research scholars to publish their research in this journal, it is essential to assess and evaluate the detailed scientometric visualization analysis.

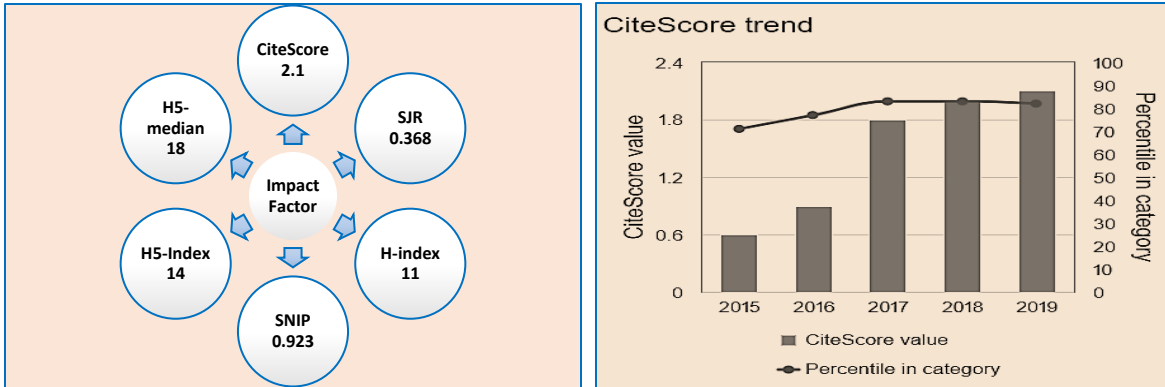


Figure 1 and 2: Archnet-IJAR impact factors and CiteScore trends for 2019

2:Literature review: Scientometric assessment of journals of the other disciplines:

The Journal of Civil Engineering and Management is a prominent international journal in the Engineering field. The bibliometric method is applied to analyze the journal's research trends. The research data collected from the web of science database. First, the JCEM journal's general citation structure and basic characteristics were investigated. Then explored the most relevant institutions, countries, and their networks cooperation analyzed. The study also investigated the most widely used keywords in the journal. It also examines the JCEM journal's internal structure and development pattern, providing a valuable guide for the journal's future development and an appropriate research tool for prospective journal evaluation (Yu, Xu, and Antuchevičienė, 2019). Another study by (Velmurugan & Natarajan, 2015) examined research trends and the quantitative analysis *Open Software Engineering Journal (OSEJ)* for seven years. The paper analyzed and discussed each article, year-wise distribution of contributions, authorship pattern, authorship, author's productivity, single and multi-authored papers, etc. The finding shows that a maximum 26.32% of articles were published in 2009, whereas a minimum of 5.26% of articles published in 2007 and 2011. The highest number, 216 (43.2%) of the citations distribution in 2009, whereas the lowest number of citations in 2008. The degree of collaboration of this journal ranges from 0.25 to 1.00, and the average degree of collaboration is 0.78. The scientometric analysis of *IISE Transactions* publications conducted from 1969-2018 to observe the research performances and scientific mapping of published literature. The Vosviewer software visualizes the collaboration relations, journal co-citation network, and co-occurrence of high-frequency keywords. The findings reflect the journal's substantial growth over time and its international diversity, with papers from all over the world published in the journal (Hu. Shuang, 2019).

Ramasamy & Padma, (2017) investigated the *journal of bioscience and bioengineering* research productivity during 2007-2016. Total 2835 papers were published from 2007 to 2016. The results show that the year 2009 has produced a maximum of 709 (25.01%) research articles; volume 108 is the most productive. The relative research growth rate decreased from 1.00 in 2009 to 0.08 in 2016, doubling time of the research productivity increased from 2009, the most prolific authors are Kondo, A with 52 (1.83%) articles, single authors contributed only 56 (1.98%), 98.02 degrees of collaboration noted. Fukusaki, E has the leading H-Index of 14 for his 46 articles with 582 citations. Japan found leading in the publishing papers (1792 articles). Osaka University noted as most productive with 276 articles. Five hundred ninety-eight articles have more than six pages. Bharvi et al. (2003) studied the '*International Journal of Scientometrics*' during 1978-2001. 1317 papers published in volumes 1 to 50 considered for assessment. The outcome shows an increase in the Netherland, India, and Japan's paper publications, while the USA's research output decreased. Single authorship dominated while joint authorship papers show increasing trends, and these trends mainly occurred in domestic and international collaboration.

3: Objectives of the study:

This study's main objective is to assess the *Archnet-IJAR: International Journal of Architectural Research* with the systematic approach, based on Scientometric analysis (a reliable and powerful tool) to conduct a comprehensive review to explore the research trends, productivity, and collaborations, which makes it straightforward to identify the journal's progress and insight effectively. The mentioned objectives achieved by setting the following questions/goals based on scientometric tools.

1. To investigate 'research productivity of *Archnet-IJAR* for ten years from 2011-2020 by analyzing 'number of publications (NP),' 'citations (CT),' 'relative growth rate (RGR)' and 'doubling time (DT)' etc.
2. To identify the research trends by analyzing 'author keywords,' 'authorship,' and 'co-authorship pattern.'
3. To recognize the most impactful author, institution, and country.
4. To discover the co-occurrence network of 'author keywords' and collaboration networks of institutions and countries.
5. To find out the most cited documents and references in *Archnet-IJAR* during 2011-2020.

4: Method and Tools:

The scientometric approach was applied to explore Archnet- IJAR journal's scientific research performances during 2011-2020. Scopus is one of the most extensive peer-reviewed indexing and abstracting databases of research literature. Therefore, for data collection, the Scopus database was used at Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia, in December 2020. The target data searched by selecting the source title (Source title= *Archnet-IJAR*). The following search query is involved in the Scopus database: SOURCE-ID (21100201015). Although this journal indexed in Web of Science too, but to conduct the study, data considered from the Scopus database as the maximum number of documents indexed in Scopus. Ten years of data considered sufficient (justified sample) for the study to identify a source's publication trends. A total of 424 documents retrieved from 2011-2020 and extracted in various bibliometric formats, namely, BibTeX, CSV, and RIS, to analyze in Microsoft Excel, Scientometric software, namely Vosviewer (van Eck & Waltman, 2010) and Biblioshiny (R language) (Massimo Aria & Corrado Cuccurullo, 2019).

5: Data analysis and discussion:

The research data reveals that *Archnet-IJAR: International Journal of Architectural Research* published 424 papers during 2011-2020, indexed in Scopus with average years from publication 4.12. Out of 694 authors, authors of single-authored documents are 147 and authors of multi-authored papers are 547. 1552 author's keywords and 15248 references have been used to produce 424 scientific research papers. There are 409 articles, seven editorials, and eight reviews published.

5.1: Annual Scientific Production: The initial analysis considered to assess the number of annual publications growing during 2011-2020. Table 1 shows that 2018 & 2019 recorded as the highest productive years (62 papers each), followed by 2013 & 2015 (47 papers each), then 2016 (45 papers), and in 2012 most minor contribution (24 papers). Annual publications exhibit a steady increase in research content development during the study period, and the number of publications in each year varies from 24 to 62.

5.2: Citations per Year: The average citations obtained by published papers in a given year shown in figure (2.2). The paper published in 2017 has the maximum mean total citation per year (1.640), followed by 2019 (1.629) and 2018 (1.330). The year 2017 and 2019 begged to mean leading citations per year since most cited documents were published.

5.3: Relative growth rate and doubling time: The relative growth rate and doubling time model applied to examine the relative growth rate of research publications (Mahapatra, 1985).

Relative growth rate (RGR): The relative growth rate is the increased number of research publications/articles or pages per unit of time. It can be calculated with the following equations.

$$R (1 - 2) = \frac{W1 - W2}{T2 - T1}$$

Where R (1-2) means the relative growth rate over a specified period of interval

W1=Log w1 (Natural log of the initial number of publication/paper)

W2=Log W2 (Natural log of the final number of publication/ paper)

T2-T1= the unit difference between the initial time and final time

The relative growth rate for both publications and papers can be calculated separately.

Therefore, R (a) = Relative growth rate per unit of time (year)

R (p) =Relative growth rate per unit of pages, per unit of time (year).

Table 1 depicts that the relative growth rate was maximum in 2013 (RGR=0.643). It was the lowest in 2020 (RGR=0.068). The decreasing trends were noted in relative growth rate during the study period for the research published in Archnet-IJAR. This result is with the agreement with (Rahaman, Ansari, et al., 2021).

Doubling Time: Doubling time directly proportional to the relative growth rate (RGR). It is defined as 'the time required for articles /citations to double the existing amount.' Suppose the number of articles in a subject doubles during a given period. The difference between logarithm numbers at the beginning and the end of the period must be logarithm number 2. If Napier Logarithm used, the value of Loge2 is 0.693. Therefore, once the average growth rate calculated, it becomes a question as to what interval the Napier Logarithm of numbers increased by 0.693 (A & Kannappanavar, 2018). Thus, the corresponding doubling time (Dt) of publications/citations calculated as follows

$$Dt = \frac{0.693}{R}$$

Where DT =Double time, R = Relative growth

Therefore, doubling time for publications, data calculated as

$$Dt(p) = \frac{0.693}{R(p)}$$

Doubling time for citation can be calculated as

$$Dt(c) = \frac{0.693}{R(c)}$$

Archnet-IJAR doubling time found highest in 2020 ($DT=10.143$) refer to table 1, while it noted the lowest in 2013 ($DT=1.076$). There is an increasing trend in noted doubling time, also an inverse relationship between relative growth rate and doubling time noticed.

Table 1: Annual production, RGR, DT, and Average citation per year

#	Year	NP	Cum+	Log 1	Log 2	RGR	DT	Mean TC per Year	Citable Years
1	2011	28	28	0	3.33	0	0	0.36	9
2	2012	24	52	3.33	3.95	0.619	1.11	0.48	8
3	2013	47	99	3.95	4.59	0.643	1.07	0.51	7
4	2014	43	142	4.59	4.95	0.360	1.92	1.21	6
5	2015	47	189	4.95	5.24	0.285	2.42	1.04	5
6	2016	45	234	5.24	5.45	0.213	3.24	1.01	4
7	2017	38	272	5.45	5.60	0.150	4.60	1.64	3
8	2018	62	334	5.60	5.81	0.205	3.37	1.33	2
9	2019	62	396	5.81	5.98	0.170	4.06	1.62	1
10	2020	28	424	5.98	6.04	0.068	10.14	0.36	0

*NP=Number of publication ** Cum=Cummulative *** RGR= Relative growth rate ****DT= Doubling time *****TC= Toal citations

5.4: Authors' Production over Time: Figure 3 shows the top authors' research contribution to *Archnet-IJAR* over time (2011-2020). Salama, AM has the most extended timeline, i.e., from 2012-2019; in the year 2019, authored a maximum of 5 papers with 25 TC, and the year 2017's papers have received 6.250 total citations per year (TCPY). Abdelmonem MG represents the timeline from 2014-2019, in 2017 has the highest paper (4 documents, $TC=20$ and $5.00TCPY$). Furlan, R timeline consisting of 2015-2019, in 2016 received the highest number of total citations (41) for his three papers. Rahimian, F P timeline representing 2011-2017, in 2015 and 2017 produced maximum papers (2) respectively. Al Kodmany K has research from 2012-2018 and produced one paper every year except 2015. For visualization, Biblioshiny (RStudio) software used.

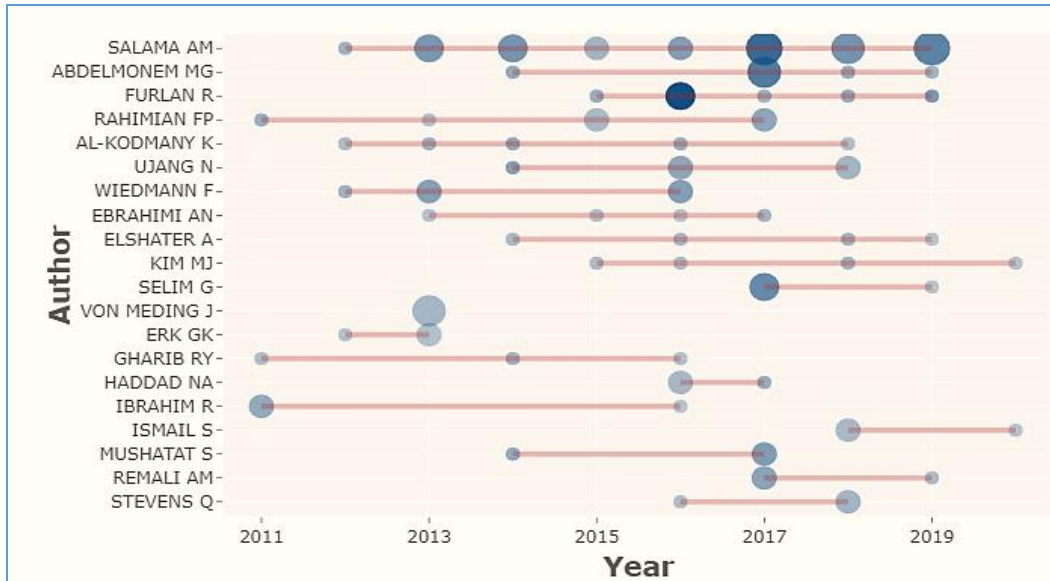


Figure 3: Top author's production over time

5.5: Top 20 most prolific authors: Table 2 characterizes the research output of the top 20 authors of *Archnet-IJAR*, based on their respective number of publications, total citations, m-index, g-index, and h-index. These writers together published 104 papers with 495 total citations. The table indicated Salama AM as the most prolific authors (NP=25, TC=121, H-Index=7, G-index=9 and M-index=0.778), followed by Abdelmonem MG (NP=7, TC=40, H-Index=4, G-index=6 and M-index=0.571), Furlan R (NP=7, TC=66, H-Index=5, G-index=7 and M-index=0.833) and Rahimian FP (NP=6, TC=28, H-Index=3, G-index=5 and M-index=0.300) etc. Erk Gk, Gharib Ry, Haddad Na, Ibrahim R, Ismail S, Mushatata S, Remali AM, Stevens Q identified the least productive (3 papers) among the top 20 authors.

Table 2: Author Impact:

Rank	Author	h_index	g_index	m_index	TC	NP	PY_start
1	Salama AM	7	9	0.778	121	25	2012
2	Abdelmonem MG	4	6	0.571	40	7	2014
3	Furlan R	5	7	0.833	66	7	2015
4	Rahimian FP	3	5	0.300	28	6	2011
5	Al-Kodmany K	4	5	0.444	34	5	2012
6	Ujang N	2	5	0.286	30	5	2014
7	Wiedmann F	4	5	0.444	43	5	2012
8	Ebrahimi AN	1	2	0.125	6	4	2013
9	Elshater A	3	3	0.429	11	4	2014
10	Kim MJ	2	2	0.333	8	4	2015

11	Selim G	3	4	0.750	16	4	2017
12	Von Meding J	1	2	0.125	7	4	2013
13	Erk GK	1	1	0.111	3	3	2012
14	Gharib RY	2	3	0.200	13	3	2011
15	Haddad NA	2	3	0.400	10	3	2016
16	Ibrahim R	2	3	0.200	18	3	2011
17	Ismail S	1	1	0.333	2	3	2018
18	Mushatat S	3	3	0.429	24	3	2014
19	Remali AM	2	3	0.500	10	3	2017
20	Stevens Q	2	2	0.400	5	3	2016

5.6: Authorship pattern in IJAR-Archent during 2011-2020: The single authors (NP=172) produced the maximum number of publications during 2011-2020, followed by double authorship (NP=133), three authorship (NP=83), four authors contributed 28 research papers, five authors contributed six papers, and one paper published by six and nine authors, respectively. Figure 4 revealed that the degree of collaboration level was high amongst the authors in IJAR-Archent. The analysis is in agreement with a similar type of authorship pattern in 25 years of global coronavirus publications (Rahaman, Kumar, et al., 2021).

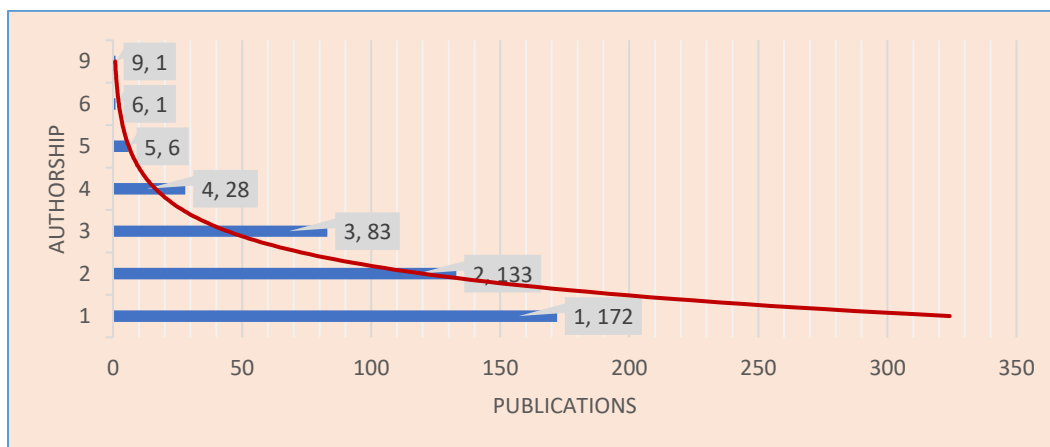


Figure 4: Authorship pattern in IJAR-Archent during 2011-2020

5.7: Network Visualization of co-citation of the cited author: Co-citation analysis is one of the distinct methods to study the structure of science. It involves tracing documents that have together been cited in the source articles. Author co-citation involves analyzing the intellectual development of the scientific disciplines. If the same documents co-cited by many authors, a research cluster forms, and each cluster's documents share common research themes. Therefore, with the help of link clustering and multidimensional scaling techniques, mapping the structure

of specialized research areas can be done with co-citation network analysis. (Surwase et al., 2011).

In VOSviewer (bibliometrics analysis software), selected co-citations from types of analysis and cited authors from the analysis unit. The full method selected in counting method criteria, minimum number of citations of an author selected 15. Total 15215 authors found, and 61 met the thresholds (61 authors have a minimum of 15 citations). For each of the 61 authors, the total strength of the co-citations links with other authors calculated. The authors with the greatest total link strength were selected. Full Item was 61, cluster 6, links 1030, and complete link strength was 8624. The 61 items have been considered for network visualization of cited authors' co-citation and grouped in 6 clusters. **Cluster 1** consists of 21 co-citations of cited authors (Al-Kodmany, K.; Alexander, C; Altman, I.; Canter, D.; Gehl, J.; Jacobs, J.; Kaplan, R.; Kaplan, S.; Lynch, K.; Moore, G.T.; Nasar, JL; Norberg-Schulz, C.; Proshansky, H.M.; Salingaros, N.A.; Sanoff, H.; Silverstein, M.; Stigsdotter, U.K.; Talen, E.; Ujang, N.; Verderber, S. and Zeisel, J). **Cluster 2** represent 13 co-citations of cited authors (Abdelmonem, M.G.; Bianca, S.; Dovey, K.; Foucault, M.; Hakim, B.S.; Harvey, D.; Latour, B.; Lefebvre, H.; Madanipour, A.; Petruccioli, A.; Salama, A.; Selim, G.; and Wang, D). **Cluster 3** represents ten co-citation-cited authors (Cross, N.; Dorst, K.; Gero, J.S.; Goulding, J.S.; Ibrahim, R.; Lawson, B.; Pour Rahimian, F.; Preiser, W.F.E.; Rahimian, F.P. and Till, J.). **Cluster 4** includes six co-citations of cited authors (Carmona, M.; Hanson, J.; Heath, T.; Hillier, B.; Oc, T. and Tiesdell, S.). **Cluster 5** comprised of 6 co-citations of cited authors (Al-Maimani, A; Furlan, R.; Mostafa, M.; Salama, A.M.; Thierstein, A. and Wiedmann, F. the cluster 6 represents five co-citations of cited authors (Bourdieu, P.; Creswell, J.W.; Oliver, P.; Rapoport, A. and Yin, R.K.)

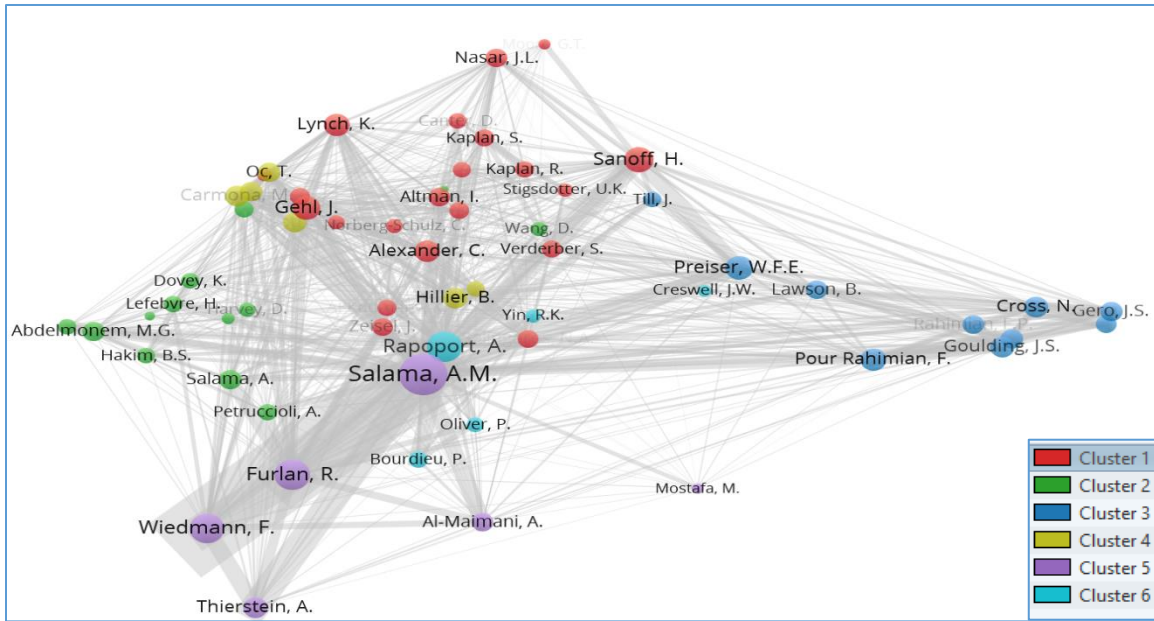


Figure 5: Mapping co-citation of the cited author

The top ten highest cited author with their respective total link strength (TLS) are Salama, A.M. (TC=227, TLS=2147), Rapoport, A (TC=79, TLS=919), Furlan, R. (TC=58, TLS=923), Gehl, J (TC=51, TLS=476), Alexander, C (TC=49, TLS=379), Wiedmann, F. (TC=44, TLS=852), Lynch, K (TC=42, TLS=400), Hillier, B. (TC=41, TLS=325), Sanoff, H. (TC=38, TLS=545) and Abdel Menem, M.G (TC=34, TLS=274).

5.8: Mapping Co-occurrence of author keywords: The inter-connection of keywords is determined based on the number of documents in which they occur together. Co-occurrence selected from 'types of analysis' and author keywords chosen from a 'unit of analysis'. Minimum of three occurrences of keywords considered for analysis. Out of the 1552 keywords, (93) meet the thresholds. For each of (93) keywords, the total strength of the co-occurrence links with the other keywords calculated. The keywords with the greatest total link strength selected. Full Item found (75), cluster (11), links (182), and total link strength (222).

Out of 1552 author keywords, 75 author keywords were selected for visualization and divided into 11 clusters. **Cluster 1** represents 11 author keywords (Accessibility; Community; Design Research; Disability; Housing; Open Space; Perception; Space Syntax; Typology; Urban Morphology and Walkability). **Cluster 2** consists of 10 author keywords (Decision-Making; Education; Heritage; Participation; Reconstruction; Resilience; School Design; Slums; Sustainability and Vulnerability). **Cluster 3** corresponds to 9 author keywords (Architectural

Design; Creativity; Design Education; Landscape Architecture; Social Interaction; Urban Development; Urban Planning; Urban Space and Urbanism). **Cluster 4** consists of 8 author keywords (Design Pedagogy; Modernism; Modernity; Participatory Design; Public Space; Traditionalism; Urban Identity and Urban Transformation). **Cluster 5** also represents eight author keywords (Architectural History; Conservation; Cultural Heritage; Place; Place Identity; Space; Urban Heritage and Urbanization). **Cluster 6** includes six author keywords (Architectural Education; Architecture Education; Design Process; Design Studio; Pedagogy and Post Occupancy Evaluation). **Cluster 7** represents five keywords (Architecture, Built Heritage; Environmental Psychology; Sustainable Development and Urban Design). **Cluster 8** corresponds to 5 author keywords (Parametric Design; Social Housing; Social Sustainability Sustainable Design; and Vernacular Architecture). **Cluster 9** also consists of 5 author keywords (Biophilia; Biophilic Design; Design; Innovation and Thermal Comfort). **Cluster 10** (Built Environment; Doha; Sustainable Architecture; and Urban Qualities) and **cluster 11** represent four author keywords (Culture; Environment; Globalization and Migration).

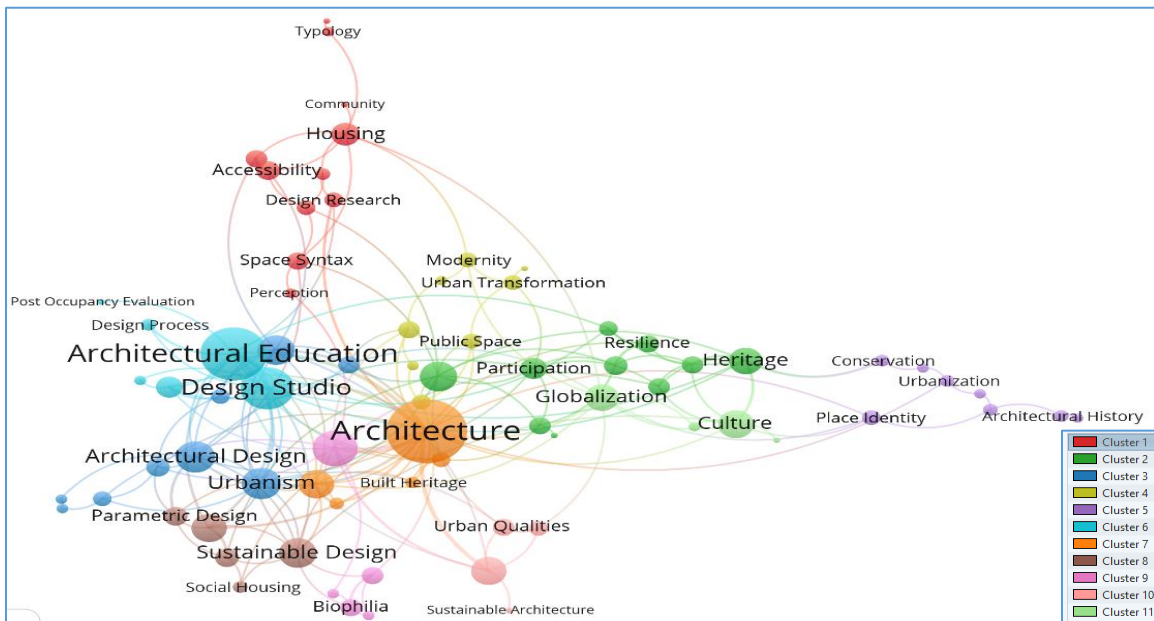


Figure 6: Co-occurrence of author keywords

5.9: Network Visualization of the highly productive country: Selected bibliographic coupling from types of analysis and countries from a unit of analysis, full method selected for counting in method criteria. The specified minimum number of documents of a country considered 1. There was a total of 59 countries, and 59 met the thresholds. For each of the 59 countries, the total

strength of the bibliographic coupling links with other countries calculated. The countries with the greatest total link strength selected. Total Item was 57, cluster, 14, links 580, and total link strength were 7073. A total of 57 highly productive countries were grouped in 14 clusters. **Cluster 1** represents eight countries, namely Brazil, India, Lebanon, Malaysia, Mexico, Netherlands, Nigeria, and turkey). **Cluster 2** comprises seven countries (Belgium, Chile, Israel, Italy, Japan, Oman, and South Africa). **Cluster 3** consists of 7 productive countries (Afghanistan, Czech Republic, Norway, Pakistan, Palestine, Spain, and the United Arab Emirates). **Cluster 4** represents six countries (Bosnia and Herzegovina, Egypt, Jordan, Kuwait, Russian federation, and Sudan). **Cluster 5** also represents six productive countries (Germany, Greece, Ireland, Qatar, Saudi Arabia, and the United Kingdom). **Cluster 6** (Light Blue) comprised six productive countries (Australia, Bahrain, Indonesia, Macau, South Korea, and Tunisia). **Cluster 7** consists of only three countries, namely China, Iran, and Kazakhstan. **Cluster 8** (Brown) also represents three countries (Denmark, Iceland, and Sweden). **Cluster 9** represents three productive countries (Cyprus, Slovakia, and the united states), and **cluster 10** comprises Iraq and Libyan Arab Jamahiriya), etc.

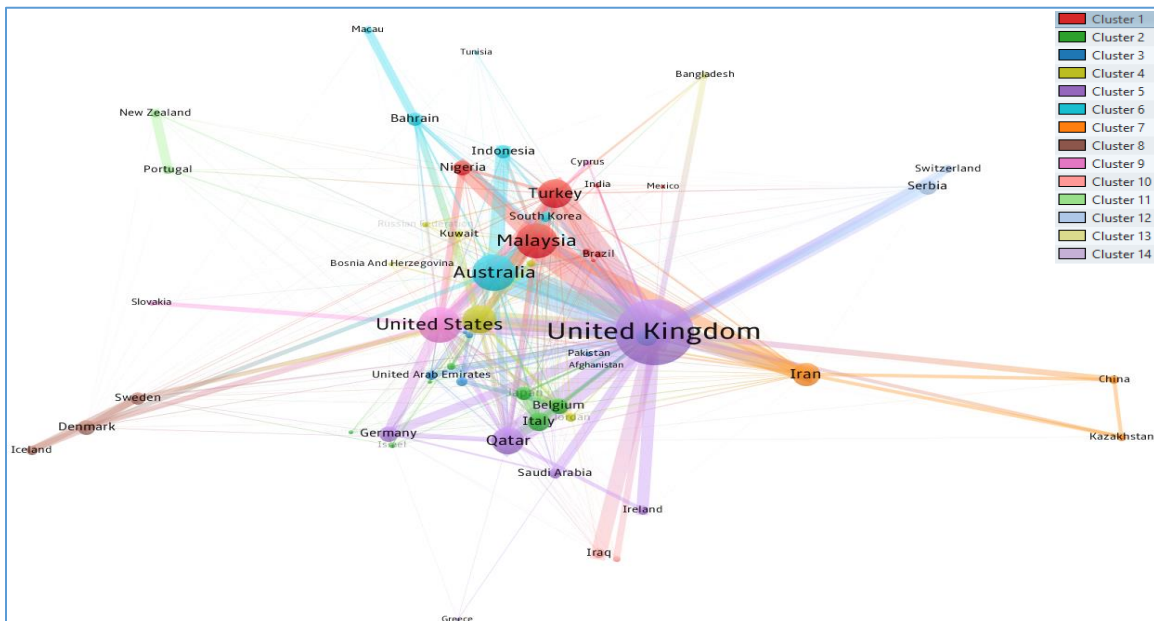


Figure 7: Network Visualization of highly productive country

Figure 6 visualize t that the United Kingdom (108) leading contributed country in the Archnet-IJAR journal, followed by Turkey (NP=75), the USA (NP=56), Egypt (NP=49), Malaysia (NP=45), Jordon (15), Spain (12) and so on.

5.10: Most cited countries: Table 3 represents the most cited country with average article citations. 'Qatar' noted as the most cited (TC=140 with average article citations=7.37) country for research submitted in the Archnet-IJAR journals, followed by United Kingdom (TC=92 with average article citations=4.60), The USA (TC=55 with average article citations=5.00), Egypt (TC=53 with average article citations=4.82), and Spain (TC=36 with average article citations=7.20) and so on.

Table 3: Most impactful country

Country	Total Citations	Average Article Citations	NP	NP rank
Qatar	140	7.37	24	7
United Kingdom	92	4.60	108	1
USA	55	5.00	56	3
Egypt	53	4.82	49	4
Spain	36	7.20	12	9
Korea	28	4.00	9	12
Malaysia	23	4.60	45	5
Turkey	22	2.20	75	2
Indonesia	18	9.00	6	15
Australia	14	7.00	37	6
Bahrain	10	5.00	6	15
Italy	8	2.67	11	10
Jordan	6	2.00	15	8
Belgium	5	5.00	9	12
Denmark	4	4.00	8	14
Germany	4	4.00	10	11
Lebanon	4	4.00	4	16
South Africa	4	2.00	2	18
Sweden	4	4.00	4	16
Japan	3	3.00	8	13

The top ten highly used author keywords by their number occurrences (Freq) and total link strength (TLS) were: architecture (Freq=28, TLS=41)); architectural education (Freq=20, TLS=33); design studio (Freq=12, TLS=23); heritage (Freq=12, TLS=13); housing (Freq=11, TLS=10); sustainability (Freq=11, TLS=13); urban design (Freq=11, TLS=13); architectural design (freq=10, TLS=14); culture (Freq=10, TLS=16) and design (Freq=10, TLS=17).

5.11: Most relevant Affiliations: Figure 8 demonstrated research contribution in the journal Archnet-IJAR by affiliations. Three hundred thirty-nine affiliations contributed research paper in

Archnet-IJAR, in which 238 affiliations contributed only once. 49 affiliations contributed twice, and 22 affiliations contributed three times. Eight institutions contributed four times. Six institutions contributed five times, seven institutions (6 times), two institutions (7times), three institutions (8 times). One affiliation contributed (10, 14, 18, 28 times) each. It noted that the top 20 institutions produced 170 research papers. The University of Strathclyde' (NP=28) discovered as a highly contributed institution, followed by Qatar University (NP=18), University Putra Malaysia (NP=14), Istanbul Technical University (NP=10). Ain Shams University, Nottingham Trent University, and Yildiz Technical University each produced eight papers. German Jordanian University, RRIT University, Selcuk University, and The American University in Cairo were among the least productive (5 papers) institutions in the Archnet-IJAR.

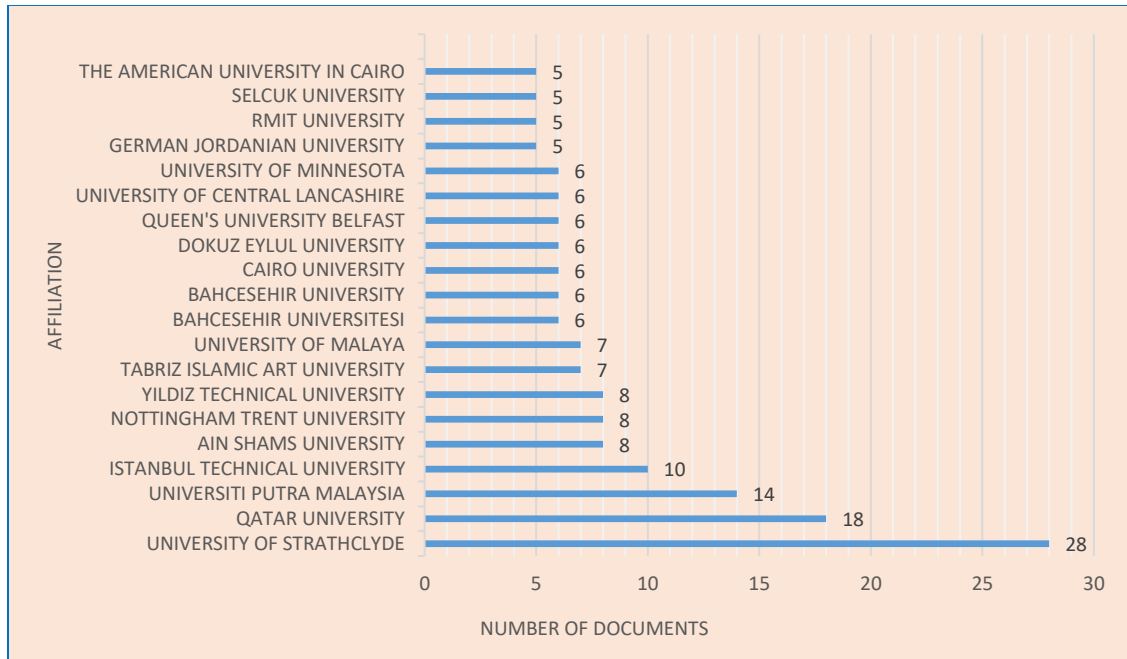


Figure 8: Most relevant affiliations

5.12: Top ten highly-cited documents in Archnet-IJAR: To visualize highly cited documents, first selected 'Citation' from types of analysis and 'Documents' from the unit of analysis, then selected full method in counting method criteria. The citation per documents' chosen minimum number 1. 424 papers found, and 361 met the thresholds. For each of the 361 papers, the number of citation links will be calculated. The documents with the largest number of links selected; hence 361 papers selected for visualizations. Total Item noted 238, cluster, 37, links 403.

A total of 238 items have been selected and grouped in 37 clusters. **Cluster 1** represents 14 cited documents, **Cluster 2** consists of 15 cited papers and **Cluster 3** comprises 13 cited documents. **Cluster 4** includes 13 cited documents, **Cluster 5** and **Cluster 6** represent 12 cited documents, respectively, **Cluster 7** representing 11 cited papers, **Cluster 8** and **Cluster 9** comprised ten cited documents, and **Cluster 10** consists of 9 cited documents. Table (5) and figure (10) show the most cited papers in the Archnet-IJAR journal during 2011-2020.

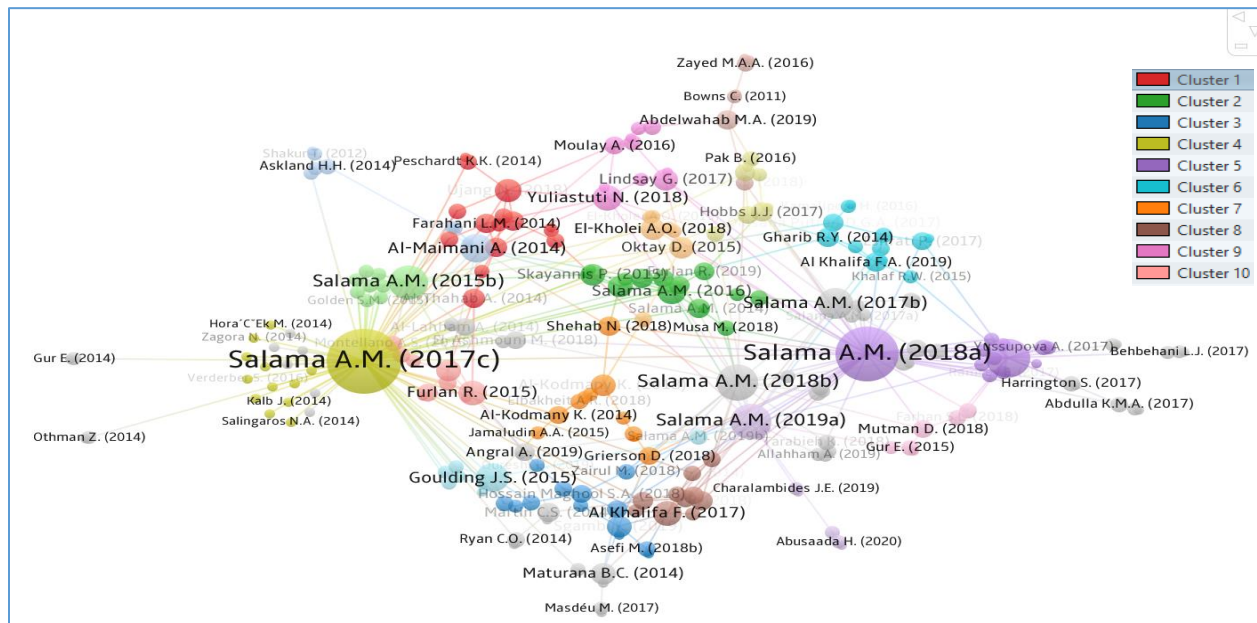


Figure 9: Most cited document

Table 4: Top ten most cited documents:

Rank	Ref	Title	TC
1	(Ryan et al., 2014)	Biophilic Design Patterns: Emerging Nature-Based Parameters for Health and Well-Being in the Built Environment	70
2	(Megahed, 2015)	Towards a Theoretical Framework for HBIM Approach in Historic Preservation and Management	19
3	(Canizaro, 2012)	Design-Build in Architectural Education: Motivations, Practices, Challenges, Successes and Failures	18
4	(Farahani & Lozanovska, 2014)	A Framework for Exploring the Sense of Community and Social Life in Residential Environments	18
5	(Furlan & Petruccioli, 2016)	Affordable Housing for Middle-Income Expats in Qatar: Strategies for Implementing Livability and Built Form	17
6	(Ujang, 2014)	Place Meaning and Significance of The Traditional Shopping District in The City Centre Of Kuala Lumpur, Malaysia	17

7	(Mostafa, 2014)	Architecture for autism: Autism aspects™ in school design	16
8	(Shirvani Dastgerdi & De Luca, 2018)	The riddles of historic urban quarters inscription on the UNESCO world heritage list	14
9	(Salama et al., 2016)	Knowledge-Economy as An Initiator of Sustainable Urbanism in Emerging Metropolises: The Case of Doha, Qatar	13
10	(Salama & Wiedmann, 2013)	The Production of Urban qualities In the Emerging City of Doha: Urban Space Diversity as a Case for Investigating The 'Lived Space.'	12

5.13: Most cited reference:

Table 5 shows the top ten most local cited references in Archnet-IJAR journals. The title entitled "The Death and Life of Great American Cities (TC=8)" by Jacobs, J found the most located cited references followed by "Place and Placelessness" ((TC=7) by Relph, E and "Theory for Integrating Knowledge in Architectural Design Education (TC=6) by Salama, AM, etc.

Table 5: Top ten most local cited reference

Rank	Ref	Cited References	TC
1	(JANE JACOBS, 1961)	Jacobs, J (1961) The Death and Life of Great American Cities, New York: Random House	8
2	(Edward Relph, 1976)	Relph, E., (1976) Place and Placelessness, London: Pion	7
3	(Salama, 2008)	Salama, A.M., A Theory for Integrating Knowledge in Architectural Design Education (2008) Archnet-Ijar: International Journal of Architectural Research, 2 (1), Pp. 100-128	6
4	(Salama et al., 2013)	Salama, A.M., Khalfani, F., Al-Maimani, A., Experiential Assessment of Urban Open Spaces in Doha (2013) Open House International, 38 (4), Pp. 47-57	5
5	(Jan Gehl, 2010)	Gehl, J., (2010) Cities for People, Island Press, Washington, DC	4
6	(Nasar, 1994)	Nasar, JL, Urban Design Aesthetics: The Evaluative Qualities of Building Exteriors (1994) Environment and Behavior, 26 (3), Pp. 377-401	4
7	(Ashraf M. Salama, 2015)	Salama, A.M., (2015) Spatial Design Education: New Directions for Pedagogy in Architecture and Beyond, Surrey: Ashgate Publishing Ltd	4
8	(Salama & Maclean, 2017)	Salama, A.M., Maclean, L., Integrating Appreciative Inquiry (Ai) Into Architectural Pedagogy: An Assessment Experiment of Three Retrofitted Buildings in The City of	4

		Glasgow (2017) <i>Frontiers of Architectural Research</i> , 6 (2), Pp. 169-182	
9	(Abubakar et al., 2017)	Abubakar, A., Romice, O., Salama, A.M., <i>Defining Slums Using Multidimensional and Relational Properties: A Dynamic Framework for Intervention</i> (2017) <i>Archnet-Ijar: International Journal of Architectural Research</i> , 11 (2), Pp. 34-54	3
10	(Agael & Özer, 2017)	Agael, F., Zer, ., <i>Human Perception in The Libyan Built Environment: Al-Khums And Bani Walid Cities as Case Studies</i> (2017) <i>Archnet-Ijar: International Journal of Architectural Research</i> , 11 (2), Pp. 157-174	3

6: Findings: The following mindmap drawn on the basis of the findings of the scientometric analysis of Archnet-IJAR

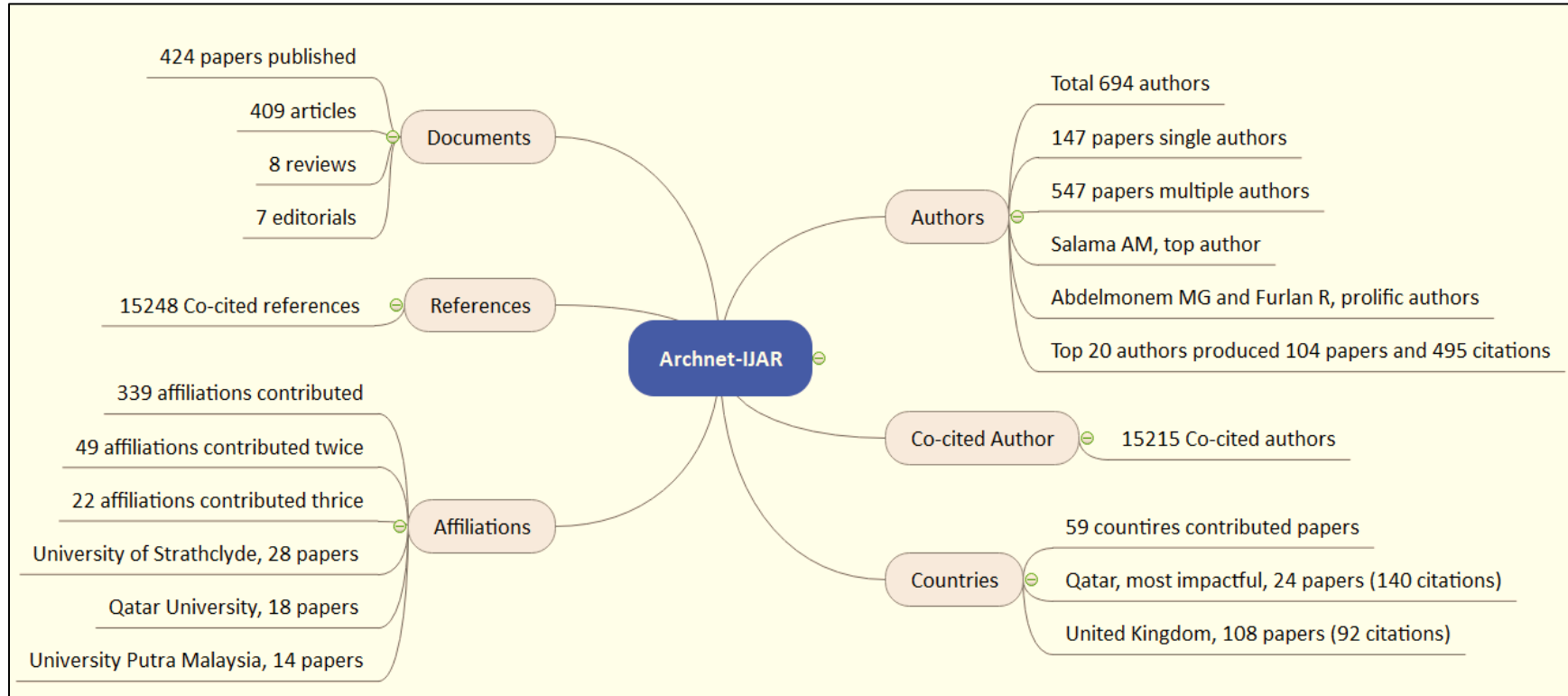


Figure 10: Findings of Archnet-IJAR

Conclusion: The results of analysis of a decade of research performance of Archnet-IJAR proclaims more than satisfactory. The factors are: being multidisciplinary, steady literature growth, around seven hundred contributors of the architecture field with the different approaches, the collaborative work, participation of 59 countries, and 339 affiliations increased the popularity of the journal, and due to the increasing rate of citations, the journals classified as Q1 with H-index 11. Overall, the assessment concludes that the Archnet-IJAR is a productive journal and a suitable venue for researchers to publish their scientific papers.

References:

- A, Bookstein, E. K. (1995). Fifth Biennial Conference of the International Society for Scientometrics and Informetrics. *Fifth Biennial Conference of the International Society for Scientometrics and Informetrics*.
- A, N., & Kannappanavar, B. U. (2018). Relative Growth Rate and Doubling Time of Publications of IASLIC Bulletin : A Scientometrics Study from 2004 to 2018. *Journal of Xi'an University of Architecture & Technology*, 12(2), 1321–1331.
<https://xajzkjdx.cn/gallery/124-feb2020.pdf>
- Abubakar, A., Romice, O., & Salama, A. M. (2017). Defining slums using multidimensional and relational properties: A dynamic framework for intervention. *Archnet-IJAR*, 11(2), 34–54.
<https://doi.org/10.26687/archnet-ijar.v11i2.1261>
- Agael, F., & Özer, Ö. (2017). Human perception in the libyan built environment: Al- Khums and Bani Walid cities as case studies. *Archnet-IJAR*, 11(2), 157–174.
<https://doi.org/10.26687/archnet-ijar.v11i2.1242>
- Ashraf M. Salama. (2015). *Spatial Design Education New Directions for Pedagogy in Architecture and Beyond*. Ashgate Publishing Ltd.
- Bharvi, D., Garg, K. C., & Bali, A. (2003). Scientometrics of the international journal Scientometrics. *Scientometrics*, 56(1), 81–93. <https://doi.org/10.1023/A:1021950607895>
- Canizaro, V. B. (2012). Design-build in architectural education: Motivations, practices, challenges, successes and failures. *Archnet-IJAR*, 6(3), 20–36.
<https://doi.org/10.26687/archnet-ijar.v6i3.113>
- Edward Relph. (1976). *place and placelessness*. Pion.
- Emerald publishing. (2021). *Archnet-IJAR*.

- <https://www.emeraldgrouppublishing.com/journal/arch>
- Farahani, L. M., & Lozanovska, M. (2014). A framework for exploring the sense of community and social life in residential environments. *Archnet-IJAR*, 8(3), 223–237.
<https://doi.org/10.26687/archnet-ijar.v8i3.412>
- Furlan, R., & Petruccioli, A. (2016). Affordable housing for middle income expats in Qatar: Strategies for implementing livability and built form. *Archnet-IJAR*, 10(3), 138–151.
<https://doi.org/10.26687/archnet-ijar.v10i3.1033>
- Hu, Shuang. (2019). Fifty years of IISE Transactions : A bibliometric overview. *IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE)*, 16(4), 76–87.
<https://doi.org/10.9790/1684-1604027687>
- Jan Gehl. (2010). *Cities for people*. Island Press.
- JANE JACOBS. (1961). *The Death and Life of Great American Cities*. RANDOM HOUSE.
- Mahapatra, M. (1985). On the Validity of the Theory of Exponential Growth of Scientific Literature. *Proceedings of the 15th IASLIC Conference*, 61–70.
- Massimo Aria & Corrado Cuccurullo. (2019). *bibliometrix 3.0*.
<https://www.bibliometrix.org/about.html>. <https://www.bibliometrix.org/index.html>
- Megahed, N. A. (2015). Towards a theoretical framework for HBIM approach in historic preservation and management. *Archnet-IJAR*, 9(3), 130–147.
<https://doi.org/10.26687/archnet-ijar.v9i3.737>
- Mostafa, M. (2014). Architecture for autism: Autism aspectsTM in school design. *Archnet-IJAR*, 8(1), 143–158. <https://doi.org/10.26687/archnet-ijar.v8i1.314>
- Nasar, J. L. (1994). Urban Design Aesthetics: The Evaluative Qualities of Building Exteriors. *Environment and Behavior*, 26(3), 377–401. <https://doi.org/10.1177/001391659402600305>
- Rahaman, M. S., Ansari, K. M. N., & Al attas, H. H. (2021). Saudi Arabian Research Output on big data Publications using the Scopus database: A Scientometric Study. *Library Philosophy and Practice*, 1–18. <https://digitalcommons.unl.edu/libphilprac/4429/>
- Rahaman, M. S., Kumar, S., Ansari, K. M. N., & Rahman, M. R. (2021). Twenty-five years of global research publications trends of novel coronavirus: A scientometrics assessment. *Library Philosophy and Practice*, 1–17. <https://digitalcommons.unl.edu/libphilprac/4294/>
- Ramasamy, K. (1), & Padma, P. (2). (2017). Mapping the research output of “journal of bioscience and bioengineering” (2007-2016): A single journal scientometric study. *Library*

Philosophy and Practice, 2017.

<http://extoljp.kfupm.edu.sa/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=edselc&AN=edselc.2-52.0-85035795722&site=eds-live>

- Ryan, C. O., Browning, W. D., Clancy, J. O., Andrews, S. L., & Kallianpurkar, N. B. (2014). Biophilic design patterns: Emerging nature-based parameters for health and well-being in the built environment. *Archnet-IJAR*, 8(2), 62–76. <https://doi.org/10.26687/archnet-ijar.v8i2.436>
- Salama, A. M. (2008). A theory for integrating knowledge in architectural design education. *Archnet-IJAR - International Journal of Architectural Research*, 2(1), 100–128. <https://doi.org/10.26687/archnet-ijar.v2i1.180>
- Salama, A. M., Khalfani, F., & Al-Maimani, A. (2013). Experiential assessment of urban open spaces in Doha. In *Open House International* (Vol. 38, Issue 4, pp. 47–57).
- Salama, A. M., & Maclean, L. (2017). Integrating Appreciative Inquiry (AI) into architectural pedagogy: An assessment experiment of three retrofitted buildings in the city of Glasgow. *Frontiers of Architectural Research*, 6(2), 169–182. <https://doi.org/10.1016/j.foar.2017.02.001>
- Salama, A. M., & Wiedmann, F. (2013). The production of urban qualities in the emerging city of doha: Urban space diversity as a case for investigating the “lived space.” *Archnet-IJAR*, 7(2), 160–172. <https://doi.org/10.26687/archnet-ijar.v7i2.163>
- Salama, A. M., Wiedmann, F., Thierstein, A., & Al Ghatam, W. (2016). Knowledge economy as an initiator of sustainable urbanism in emerging metropolises: The case of Doha, Qatar. *Archnet-IJAR*, 10(1), 274–324. <https://doi.org/10.26687/archnet-ijar.v10i1.927>
- Shirvani Dastgerdi, A., & De Luca, G. (2018). The riddles of historic urban quarters inscription on the UNESCO world heritage list. *Archnet-IJAR*, 12(1), 152–163. <https://doi.org/10.26687/archnet-ijar.v12i1.1315>
- Surwase, G., Atomic, B., Sagar, A., Atomic, B., Kademani, B. S., Atomic, B., & Bhanumurthy, K. (2011). Co-citation Analysis : An Overview ISBN : 935050007-8. *BOSLA National Conference Proceedings, CDAC, September, 9*.
- Tague-Sutcliffe, J. (1992). An introduction to informetrics. *Information Processing and Management*, 28(1), 1–3. [https://doi.org/10.1016/0306-4573\(92\)90087-G](https://doi.org/10.1016/0306-4573(92)90087-G)
- Ujang, N. (2014). Place meaning and significance of the traditional shopping district in the city

centre of kuala lumpur, malaysia. *Archnet-IJAR*, 8(1), 66–77.

<https://doi.org/10.26687/archnet-ijar.v8i1.338>

van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84(2), 523–538. <https://doi.org/10.1007/s11192-009-0146-3>

Velmurugan, C., & Natarajan, R. (2015). *Quantitative Analysis of Scientific Publications Output on Engineering Journal : A Scientometric Study*. April.

Yu, D., Xu, Z., & Antuchevičienė, J. (2019). BIBLIOMETRIC ANALYSIS OF THE JOURNAL OF CIVIL ENGINEERING AND MANAGEMENT BETWEEN 2008 AND 2018.

JOURNAL OF CIVIL ENGINEERING AND MANAGEMENT, 25(5), 402–410.

<https://doi.org/10.3846/jcem.2019.9925>