

Evaluation of Social Sciences Research in Saudi Arabia during the period of fifty years from 1973 to 2022

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Abstracts:

Aim: The paper aims to evaluate the growth of social science research produced by Saudi Arabia during the fifty years from 1973 to 2022.

Keywords: 1. Social Sciences, Saudi Arabia; 2. Research Productivity, Saudi Arabia; 3. Bibliometrics, Saudi Arabia

Introduction:

Social Science is an imperative branch of knowledge that directly deals with the sustainable socio-economic development of society, the study of the compact attitude of societies, cultures and deals with the relationship of different groups of societies as well as individuals.^{1,2} Social science is a broad term that includes psychology, sociology, economics, political science, environmental issues, etc. Social science scientists explore the behavior of individuals as well as the communal attitude of society.³ Shapiro elaborated on the historical perspective of social sciences phrase. The French author, Charles Fourier, used this phrase as “*science sociale*” in 1808 whereas in English J. S. Mill applied, social science in 1829.⁴ Ross explained the development of social sciences in the United States after the 1920s.⁵

Saudi Arabia is the largest country in Arabian Peninsula and is blessed with rich natural resources. The government is paying extraordinary attention to higher education and quality research. New universities and state-of-the-art research centers were established during the last two decades.^{2,6,7} It is important to evaluate the outcome of all these efforts and assessment of research productivity is one of the vital indicators. The bibliometric method is used to measure the research growth and assess the status of research from a global perspective. It assists in highlighting the strong and weak areas of research and supports decision-makers to formulate research policies.^{2,8,9} The findings of bibliometric studies support the emerging researchers in selecting the topic, planning the research and acquiring the research grants.¹⁰

The literature exposed that bibliometric studies have been frequently carried out globally to assess research productivity and its impact. Some studies have been conducted to reveal the research scenario of Saudi Arabian. Shehatta and Mahmood studied the research collaboration in Saudi Arabia from 1980 to

2014 and revealed that Saudi Arabia produced 88,506 papers, contributing 0.18% of the global output. Forty-six percent of the literature was produced by two academic organizations, King Saud University and King Abdulaziz University. Only, 1,765 (2%) papers were found on social sciences.¹¹ Evaluating the research growth in medical and allied sciences has been discussed in various studies.^{2,6,12,13} Hassan and Ara reported that Saudi Arabia has the highest growth rate in medical research publications during the period of 2019-2020 among the top 46 countries, having at least 3,000 publications.¹⁴

The present study is aimed to evaluate the growth of research in the knowledge field of social sciences produced by Saudi Arabian-affiliated authors as reflected in the Scopus database.

Objectives:

The following were the objectives of the study:

To assess the periodic growth of social sciences in Saudi Arabia from 1973 to 2022.

1. To evaluate the collaborative pattern and its citation impact on social sciences research.
2. To review the subject dispersion of sub-categories of social sciences research.
3. To highlight the productive research institutions in social sciences research.
4. To analyze the preferred sources of publications in social sciences research.
5. To examine the trends of international research collaboration in social sciences research.

Literature Review:

Almaizar and Abdul Hamed explored social work research publication trends in Saudi Arabia. A total of 85 papers were identified and published from 1999 to 2013. More than half (55%) of the research was produced by female authors and 75% work was written in a descriptive format, followed by theoretical (15%). The highest number of papers (76.5%) were contributed by the authors affiliated with the Riyadh.¹⁵

Ahmad et al., measured the research output of the Arab World from 1980 to 2020. The noteworthy growth of publications was observed. Egypt and Saudi Arabia contributed a significant share, *Engineering and Technology* and *Physical Sciences* were the preferred areas of research. Arab world produced 35,092 papers on *Social Sciences* and these papers gained 196,749 citations, with an average of 5.61 citations per paper and 43.90% of papers were the results of international research collaboration.¹⁶

Siddique et al. evaluated the Library and information science (LIS) research in the Arab World from 1951 to 2021. A total of 863 papers were identified and the highest number of papers were contributed by Saudi Arabia (n=296; 33.16%), followed by Kuwait and Egypt. Out of the 10 most productive authors, four authors were affiliated with Saudi Arabia.¹⁷

Thorat and Verma examined the status of social sciences research in India. They argued that the research performance in social sciences is significant in inspiring societies, by producing scholarly knowledge that conveys clarification as well as understanding the dynamics of human developments, nature and behavior. The study highlighted the issues confronting research productivity, mainly lack of funds, non-availability of relevant data, infrastructure and pertinent quality research publications.¹⁸ Gupta et al., in their 2013 study assessed the publication's growth of India in Social Sciences from 2001 to 2010. India produced 21,671 papers with an average annual growth of 17.66% and shared 1.18% of the global research output. The majority of papers were contributed by authors geographically affiliated with Delhi (17.08%), followed by Mumbai (9.02%) and Bangalore (8.65%).¹⁹ Another study by Gupta et al., examined the social sciences research of three countries, India, China and Brazil from 1996 to 2007. The United States contributed more than one-fourth (29%) of total research, while the share of China, India and Brazil was 2.16, 1.00 and 0.48 quantified, respectively. The citation impact of Brazilian research was higher than India and China. The research collaboration was also found higher in Brazil (26.8%) as compared to China (22.2%) and India (15.8%).²⁰

The bibliometric analysis of social science research contributed by Pakistan from 1961 to 2020 showed that the share of social science research was 5% of the total research contributed by Pakistan in the targeted period and about 75% of the papers were published in the last ten years from 2011 to 2020. The highest number of papers were published in *Pakistan Development Review* followed by the *Pakistan Journal of Life and Social Sciences*. Computer Science was found the most preferred sub-category of social science, followed by Art and Humanities. Pakistan Institute of Development Economics, University of Punjab and COMSATS University Islamabad were found to be the top-3 most productive institutions. In international research collaboration, the United States, United Kingdom and China were the topmost preferences.²

Roy Chowdhury et al., examined the research productivity of Covid-19 from the social science perspective. A total of 9,289 papers were published in 2020 and 2021. These papers were cited 286,862 times with an average of 3.45 citations per

paper and the ratio of authors per paper was recorded at 3.21. Most of the papers were published in *Sustainability* (n=703) followed by *Frontier in Psychology* (n=647). The subject dispersion exhibited that *Psychology* was the preferred area of research followed by *Business Economics*. United States contributed the highest number of papers and University of Oxford was found the most productive institution.²¹

Yusuf et al., analyzed the literature on urban agriculture indexed in the Web of Science database. A total of 424 papers were identified that were published from 1984 to 2020. These papers gained 6,708 citations with an average of 15.82 citations per paper. More than half (51%) of the papers were published in the last five years of study. The United States contributed the highest number of papers, followed by the United Kingdom and South Africa.²²

Murphy traced the historical background of social sciences research in the Middle East, particularly at the American University of Cairo, Egypt, where the Social Research Centre was established in 1952. The center was mostly relying on foreign researchers at the start but gradually a team of local researchers was formed.²³

Henricksen discussed the research collaboration and co-authorship pattern in social sciences. The study identified that the co-authorship trend has increased in social sciences during the last three decades. The study findings explained that the research collaboration provides a chance to socialize as well as create synergy, which makes the research process more exciting. The rise of co-authorship increases the growth of publications and enhances career and promotion.²⁴

Glänzel and Schoepflin analyzed the reference literature in pure sciences and social science indexed in the Web of Science in 1993. The ratio of cited references from the serial literature was found higher in pure sciences as compared to social sciences. The highest average of cited references varies from 40 to 70 in social sciences whereas this range varies from 70 to 100 in pure sciences.²⁵ Nederhof studied the patterns of publications and citations in social sciences. The study revealed that the ratio of single-author publications was higher in social sciences and social sciences researchers cited more books and non-serial literature as compared to pure sciences.²⁶

Research Methodology:

This bibliometric research method was applied to conduct this paper. The data for this study was extracted from Elsevier's Scopus database on 7 February 2023 to assert the research publication growth in the knowledge field of social science contributed by Saudi Arabian-affiliated authors from 1973 to 2022. The word "Saudi Arabia" was typed in the main search box and "Affiliation Country" was opted in the subsequent search box. Only articles and reviews were selected from the document's

type index, all other types were excluded. The dataset in Comma Separated Value (CSV) file was downloaded and later converted into Microsoft Excel for data analysis. The six bibliometric parameters were chosen in the light of the literature review, including, periodic growth, collaboration pattern, segregation of sub-categories of social sciences, productive research organizations, preferred sources of publications and most collaborative countries in terms of articles.

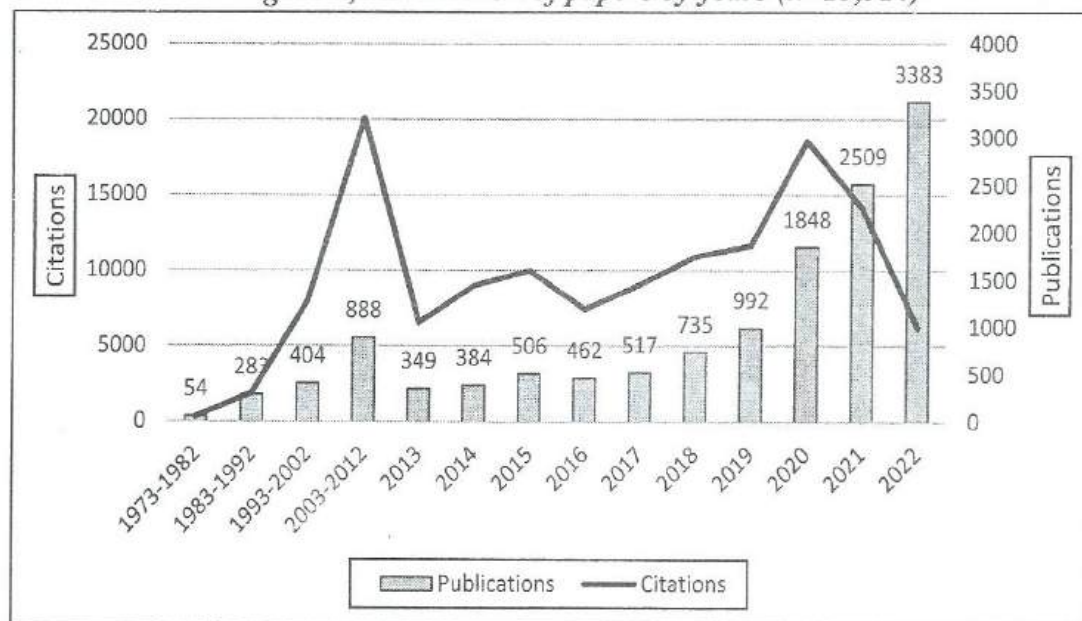
The dataset and the findings were limited to the Scopus-indexed articles and their citation counts. Scopus database provides comprehensive coverage of global literature with bibliographic details, abstracts and citation count.²⁷

Results:

A total of 320,910 papers (articles and reviews only) were published under the country affiliation of Saudi Arabia from 1973 to 2022. The highest number of papers were published in *Medicine* (n=72,739; 22.66%), followed by *Engineering* (n=61,578; 19.18%) and *Chemistry* (n=51,495; 16.04%). The subject area of *Social Sciences* occupied the 14th position with 13,314 (4.14%) papers.

A total of 13,314 scholarly publications were finally selected for data analysis consisting of articles (n=12,676; 95.20%) and reviews (n=638; 4.80%). Figure 1 presents the detail of papers on Social Sciences contributed by Saudi Arabia from 1973 to 2022 by year. The very slow growth of papers (n=536; 4.02%) was found during the first 25 years from 1973 to 1997. In the next fifteen years from 1998 to 2012, a total of 1,093 (8.20%) papers were published. The remarkable growth of papers (n=11,685; 87.76%) was found during the last 10 years from 2013 to 2022. Fifty-eight percent (n=7,740) of the papers were published during the last three years of study, from 2020 to 2022, this number was even higher than the number of papers published in the first 40 years (n=1,629).

The line in Figure 1 indicates the citations gained by the papers against each period/year in the graphic format while Table 1 presents the details of citations and average citations in numeric format. All 13,314 papers gained 133,684 citations with a mean ratio of 10.04 citations per paper. The papers published in 2014 gained the highest citation impact with an average of 23.46 citations per paper, followed by the papers published from 2003 to 2012, with an average of 22.59 citations per paper.

Figure 1, Distribution of papers by years (n=13,314)**Table 1, Distribution of papers, citations and citation impact by year**

Years	Publications	Citations	Citation Impact
1973-1982	54	318	5.89
1983-1992	283	1,868	6.60
1993-2002	404	8,013	19.83
2003-2012	888	20,056	22.59
2013	349	6,542	18.74
2014	384	9,007	23.46
2015	506	9,988	19.74
2016	462	7,423	16.07
2017	517	9,058	17.52
2018	735	10,911	14.84
2019	992	11,652	11.75
2020	1,848	18,552	10.04
2021	2,509	14,088	5.61
2022	3,383	6,208	1.84
Total/Average	13,314	133,684	10.04

Table 2 elaborates on the authorship/collaboration pattern in Social Sciences

research in Saudi Arabia. A total of 50,140 authors, including multiple counts, contributed to 13,314 papers with an average of 3.77 authors per paper. The ratio of the average of authors per paper was recorded as less than two during the first three decades (1973 to 2002) as the single-author pattern was dominant but after 2003 the collaborative research / multi-authors pattern increased. The highest ratio of collaborative research was found in the papers published in the year 2022. Overall, 27.81% of the papers were contributed by a single author.

The analysis of citation count shows that collaborative/multi-author research attracts more citations as compared to a single-author paper. The single-author papers gained an average of 5.87 citations per paper, while multi-author papers were cited with an average of 11.64 citations per paper.

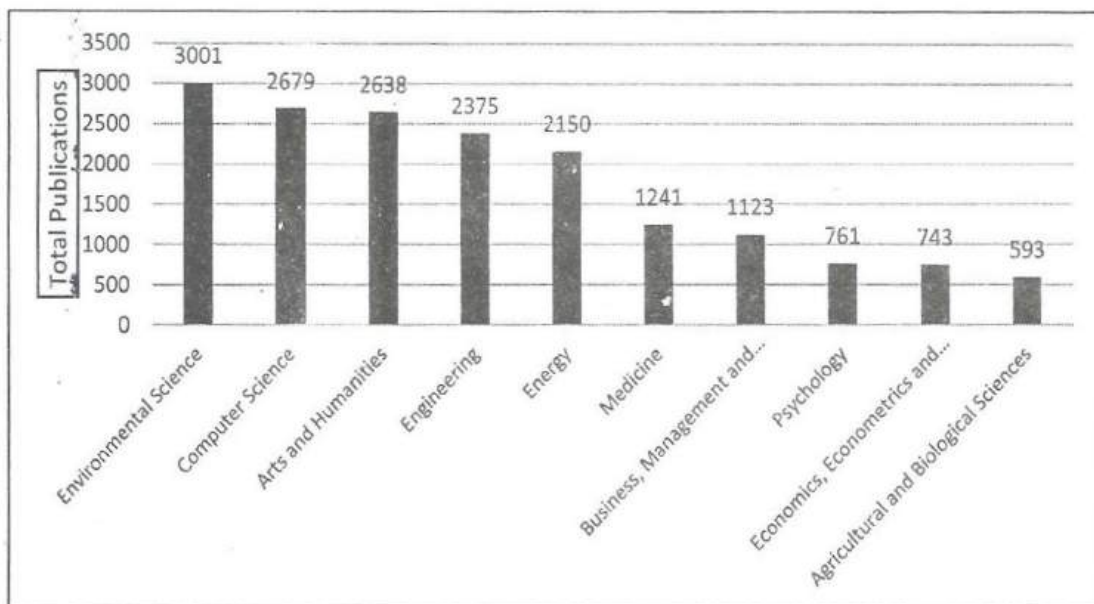
Table 2, Distribution of papers, authors, average authors per paper and collaboration pattern by year

<i>Years</i>	<i>Total Papers</i>	<i>Total Authors</i>	<i>Average Authors per paper</i>	<i>Single-author papers (%)</i>	<i>Multi-author papers (%)</i>
1973-1982	54	79	1.46	41 (75.93%)	13 (24.07%)
1983-1992	283	439	1.55	175 (61.84%)	108 (38.16%)
1993-2002	404	666	1.65	239 (59.16%)	165 (40.84%)
2003-2012	888	2,100	2.36	389 (43.81%)	499 (56.19%)
2013	349	1,020	2.92	103 (29.51%)	246 (70.49%)
2014	384	1,148	2.99	122 (31.77%)	262 (68.23%)
2015	506	1,626	3.21	130 (25.69%)	376 (74.31%)
2016	462	1,523	3.30	134 (29.00%)	328 (71.00%)
2017	517	2,603	5.03	118 (22.82%)	399 (77.18%)
2018	735	2,446	3.33	180 (24.49%)	555 (75.51%)
2019	992	3,308	3.33	240 (24.19%)	752 (75.81%)
2020	1,848	6,159	3.33	537 (29.06%)	1,311 (70.94%)
2021	2,509	10,410	4.15	569 (22.68%)	1,940 (77.32%)
2022	3,383	16,613	4.91	725 (21.43%)	2,658 (78.57%)
Total/Average	13,314	50,140	3.77	3,702 (27.81%)	9,612 (72.19%)

Social Sciences is a broad term, the Scopus database further segregated the 13,314 papers into 26 sub-categories. The detail of the top 10 categories has been shown in Figure-2. The maximum number of papers (n=3,001; 22.54%) were written

in the sub-category of *Environmental Sciences*, followed by *Computer Sciences* ($n=2,679$; 20.12%) and *Art and Humanities* ($n=2,638$; 19.81%). The social sciences aspects of *Engineering*, *Energy* and *Medicine* were secured fourth, fifth and sixth ranked, respectively.

Figure 2, Distribution of papers by top-10 subject categories



Most contributing universities

Table 3 presents the detail of the most contributing universities of Saudi Arabia in Social Science research. The highest number of papers were contributed by the authors affiliated with King Saud University, the oldest and biggest university in Saudi Arabia. Almost one-fifth ($n=2,267$; 17.02%) of the total papers were produced by King Saud University and more than three-fourths (79.09%) of its papers were cited. King Abdulaziz University contributed the second-highest number of papers ($n=1,320$; 9.91%). Only these two universities contributed more than one thousand papers each and their research papers also gained the highest citation impact among the top 10 most contributing universities. King Fahd University of Petroleum and Minerals got the highest ratio of citable documents (83.55%) and its papers gained a citation impact of 13.49 citations per paper.

Table 3, Distribution of papers by contributing universities

Serial No.	Name of University	Total Documents	Citable Document (%)	Total Citations	Average Cite/Doc
1.	King Saud University	2,267	1,793 (79.09%)	31,019	13.68
2.	King Abdulaziz University	1,685	1,320 (78.33%)	24,407	14.48
3.	Imam Abdulrahman Bin Faisal university	894	581 (64.98%)	5,831	6.52
4.	Prince Sattam Bin Abdulaziz University	850	496 (58.35%)	3,796	4.46
5.	King Fahd University of Petroleum and Minerals	821	686 (83.55%)	11,077	13.49
6.	Al Qassim University	547	340 (62.15%)	3,737	6.83
7.	Prince Sultan University	494	340 (68.82%)	4,067	8.23
8.	King Faisal University	489	346 (70.75%)	4,680	9.57
9.	Princess Nourah bint Abdulrahman University	480	284 (59.16%)	2,051	4.27
10.	King Khalid University	467	338 (52.24%)	3,835	8.21

Preferred Sources of Publications

The analysis of the top 10 preferred sources of publications has been shown in Table 4. The maximum number of papers ($n=1,838$; 13.80%) were published in *Sustainability (Switzerland)*, followed by *Water (Switzerland)*, *Advances in Medical Education and Practice*, *Sage Open* and *Medical Teacher* with 297, 156, 124 and 120 papers, respectively. Although *Medical Teacher* stood on the fifth rank with 120 papers, but these papers gained the highest citation impact, 18.33 citations per paper among the top-10 journals. *Sustainability (Switzerland)* and *Medical Teacher* journal have the highest CiteScore in this list. The second and the third highest citation impact was gained by *Foods* and *BMC Medical Education* with an average of 15.20, and 15.06 citations per paper.

Table 4, Top-10 Preferred Sources of Publications

Serial No.	Name of Journal	CiteScore (2021)	Total papers	Citable Documents (%)	Total Citations	Average Cite/Doc
1.	Sustainability (Switzerland)	5.0	1838	1,470 (79.97%)	16,208	8.81
2.	Water (Switzerland)	4.8	297	238 (80.13%)	2,501	8.42
3	Advances in Medical Education and Practice	2.8	156	111 (71.15%)	915	5.86
4.	Sage Open	1.9	124	87 (70.16%)	694	5.59
5.	Medical Teacher	5.0	120	117 (97.5%)	2,200	18.33
6.	Library Philosophy and Practice	* 0.4	115	64 (55.65%)	185	1.60
7.	Foods	4.1	110	92 (83.63%)	1,673	15.20
8.	Asian EFL Journal	1.0	104	51 (49.03%)	268	2.57
9.	BMC Medical Education	3.7	103	83 (80.58%)	1,552	15.06
10.	Theory and Practice in Language Studies	0.2	103	38 (36.89%)	139	1.34

*CiteScore against Library Philosophy and Practice was recorded for 2020 as Scopus discounted its coverage in 2021

Research collaborative countries:

Out of a total of 13,314 papers, 5,807 (43.61%) papers were created by Saudi Arabian authors without international collaboration. These papers were cited 37,593 times with an average of 6.47 citations per paper and an average proportion of authors per paper was observed at two (2). The research collaboration with international authors was found in 7,507 (56.39%) papers and these papers gained 122,043 citations with an average of 16.25 citations per paper and an average of 5.12 authors per paper recorded.

Table 5 reveals the preference for international research collaboration. The social scientists of Saudi Arabia mostly collaborate with the researchers affiliated with Egypt. About 11% (n=1,454) of the papers were the results of co-authorship with Egypt, followed by the United States (n=1,342; 10.07%), Pakistan (n=1,044; 7.84%) and United Kingdom (n=1,011; 7.59%). A total of 603 papers were written with the collaboration of Australia but these papers gained the highest citation impact, 29.06 citations per paper, followed by the United Kingdom, 24.84 citations per paper and the United States, 20.82 citations per paper. Although, the research collaboration with Egypt occupied the top rank but had the lowest citation impact in the top 10 collaborative countries.

Table 5, Top-10 Research collaborative countries

<i>Serial No.</i>	<i>Research Collaborative Country</i>	<i>Total Papers</i>	<i>Citable Document (%)</i>	<i>Total Citations</i>	<i>Average Cite/Doc</i>
1.	Egypt	1,454	1,072 (73.72%)	12,767	8.78
2.	United States	1,342	1,109 (82.73%)	27,945	20.82
3.	Pakistan	1,044	822 (78.73%)	11,258	10.78
4.	United Kingdom	1,011	841 (83.18%)	25,123	24.84
5.	Malaysia	810	620 (76.54%)	10,089	12.45
6.	India	728	557 (76.51%)	9,072	12.46
7.	Australia	603	509 (84.41%)	17,525	29.06
8.	China	577	492 (85.26%)	11,683	20.24
9.	Jordan	362	249 (68.78%)	4,220	11.65
10.	Tunisia	343	262 (76.38%)	3,402	9.91

Discussion:

Bibliometric studies have been used to quantify the progress of research and scholarly publications.^{11,12,16,29} The current study shares the bibliometric indicators of Social Science Research in Saudi Arabia. The analysis of bibliographic records reveals the vital trends of publications on Social Science produced by Saudi Arabian authors during the last fifty years from 1973 to 2022. The examination of data showed that slow growth of publications was observed in the first 40 years but remarkable growth was detected during the last ten years from 2013 to 2022. These outcomes are in line with Haq et al., study, which assessed the noteworthy growth of medical literature in Saudi Arabia.² Mohsen and Ho investigated the educational research in Saudi Arabia from 1991 to 2020 and substantial growth was observed in the last decade. The maximum research collaboration was performed with the United States but the papers collaborated with Germany got the highest citations.³ Shehatta and Mahmood examined the research growth of Saudi Arabia from 1980 to 2014 and they reported that the majority of publications were produced during the last five years from 2010-2014.¹¹ Ahmad et al., evaluated the research growth of the Arab World from 1980 to 2020 and reported growing tendency of publications in the last decades. The share of social science research was found in 35,092 papers and these papers gained 196,749 citations, with an average of 5.61 citations per paper.¹⁶ Our study reported that social science research produced by Saudi Arabia gained a higher citation impact (10.04 cite/paper).

The evaluation of authorship and collaboration pattern revealed that during the first thirty years, single authorship was dominant in social sciences research in Saudi Arabia. The collaboration pattern increased significantly after 2003 and the highest ratio of collaborated papers was recorded in 2022. The analysis of citations demonstrated that multi-author papers or collaborative research gained a higher ratio of citations as compared to a single-author paper. Henriksen endorsed that the research collaboration and co-authorship pattern in social sciences has increased during the last three decades.²⁴

The subject dispersion showed the strong and weak areas of Social Science Research in Saudi Arabia. The highest number of papers were written on *Environmental Science*, followed by *Computer Science* and *Art and Humanities*. The study on research trends in Social Science Research in Pakistan revealed that the majority of the research was performed in *Computer Science*.²

The analysis of the most contributing research organizations of Saudi Arabia in Social Science Research, King Saud University and King Abdulaziz University have found at the top in terms of the number of papers and even citation impact among the top-10 most productive institutions.

About, one-fourth ($n=3,070$; 23%) of the total papers have been published in the top 10 most preferred sources. The analysis exposed that all of these sources are internationally published. It is suggested that quality research should be published in locally indexed journals, so the impact of these journals is enhanced. Egypt, the United States, Pakistan and the United Kingdom were found on the topmost countries in the analysis of international research collaboration. These findings are in line with the research of Shehatta and Mahmood,¹¹ who discovered bit similar results. The Saudi researchers collaborated on 8,204 papers with the United States, followed by Egypt (8,076) and the United Kingdom ($n=3,359$).

The findings also highlighted that papers contributed by single-author and without international collaboration got fewer citations. This encourages to carry out of collaborative research with local authors as well as international authors.

Scholarly research plays a vital role in the sustainable development of the country and the importance of social sciences research has been considered the backbone of understanding the interrelations of societies and the attitude of individuals. An attempt has been made to illustrate the growth of Social Science in Saudi Arabia. The study identified the preferred sub-categories of social sciences research, most productive organizations, frequently used sources and trends of international research collaboration. The results would support the potential researchers of Social Sciences and future studies could focus on the areas that have not been discussed in the current study. The policymaker could apply these findings to determine the reasons behind the low research performance as compared to other developed countries of the world.

The current study is limited to the data set retrieved from a single database, Scopus. Future studies could perform their research based on other databases like Web of Science and Google Scholar.

Conclusion:

Saudi Arabia invested significant resources to promote higher education, the inclusion of Saudi digital library as well as the provision of doctorate scholarships to students and the outcome of their efforts have been demonstrated through research performance. The study presented the bibliometric evaluation of social science research produced by Saudi Arabia in the last fifty years. It is inspiring that an upward trend of research was observed in the last decade. We can't deny the value of research collaboration; the collaboration not only helps to increase productivity but also boost the quality aspect of papers. We should learn lessons from the model of the European Union research Framework Programs, which offer incentives to the researchers of the European Union to conduct inter-country research for the advancement of

knowledge.³¹ The Arab countries and especially Gulf Cooperation Countries could formulate a research network of social scientists. The findings and further implementations of the recommendations of findings could improve inter-societies relations and improve the quality of life.

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