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Turkish-addressed social sciences citation index articles: What does the big picture tell us?

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ABSTRACT

This study investigates articles in the SSCI written in the English language and published in the 'Education & Educational Research' area between 1980 and 2019. In the study, bibliometric methods were used to detect the number of SSCI articles published worldwide, and also the articles with a Turkish author address entered, meaning at least one author provided Turkey as their location. In addition, analysis was conducted according to various variables (e.g., research areas, publication year, number of authors, and source titles). The bibliometric data were obtained from the Web of Science Core Collection database. With regards to the 'Education & Educational Research' area, the analysis indicated the dominance of English-speaking countries in terms of the number of SSCI-indexed articles and those that had been cited the most. This finding appears to be affected by the majority of journals indexed in SSCI only accepting articles written in the English language. In terms of the number of SSCI articles published in the area of 'Education & Educational Research', Turkey was shown to be ranked seventh worldwide. Within Turkey, the number of SSCI articles for the 'Education & Educational Research' area ranked second, after 'Business & Economics'. In comparison to the overall worldwide trend, the study's findings suggest that Turkish researchers have a tendency towards publishing their articles in mainly Turkey-originated journals with low impact factors. Factors that may affect this tendency and the potential implications of these findings are discussed, together with the limitations of the study and suggestions for further research.

1. Introduction

From the 1800s to the present day, scholarly and scientific journal growth rate has averaged 3.46% annually. In other words, the number of active journals has doubled approximately every 20 years (Mabe, 2003). However, such an increase in the number of active academic journals can make it difficult for new journals just started out to reach any sort of prominence among the established journals that publish articles on similar topics. In recent years, in order to attract the attention of researchers and to become popular or maintain popularity among similar journals, even renowned publishers (e.g., Wiley, Springer, Elsevier, etc.) offering various journals covering differing research areas have started providing web applications (i.e., journal finder, journal suggester, etc.) to assist researchers in finding the most suitable journal for their articles. As stated by Rollins, McCusker, Carlson and Stroll (2017), inappropriateness is generally reported as the main reason given by many journal editors and reviewers for the rejection of articles submitted for publication. Therefore, in providing these web applications, publishers aim to attract researchers from various countries and to ease the job of editors by allowing them to choose among a variety of articles that best fit the scope of their journals.

The ranking among journals, universities, and educational and research institutions is regularly evaluated in terms of certain factors. One of these factors is the average number of citations for articles published in certain journals. Hence, it is difficult for journals that contain less-cited and/or non-cited articles to be included within international indices or to remain listed in them (Asan, 2017a). Similarly, the academic success of researchers is predominantly associated with publishing articles in what are deemed to be respectable journals, and for receiving citations of such articles (Klein & Chiang, 2004). Whilst there are many different indices, not all reflect the same academic qualities. However, the Social Sciences Citation Index (SSCI), Science Citation Index Expanded (SCI-Expanded), and the Arts & Humanities Citation Index (A&HCI), as provided by the Web of Science (WOS), are considered to be the standard for a number of reasons (Asan, 2017a). One such reason is that the WOS contains over 21,000 peer-reviewed journals covering over 250 discipline areas, and for the social sciences alone, the WOS covers in excess of 3400 journals across 58 social science disciplines (Clarivate, n.d.b). A second reason is that the 'journal impact factor' re-

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leased by WOS, which is a tool used to evaluate the influence of specific journals, has been the most widely used main academic reference point by researchers (Falagas, Pitsouni, Malietzis & Pappas, 2008). The WOS uses citation activity as the primary indicator of each journal's impact. A third reason is that to choose the most influential journals in each discipline, WOS editors perform an evaluation based upon a 28-point criteria (Clarivate, n.d.b). Hence, it has been regarded as one of the world's most trusted sources of scientific and scholarly research citations. Therefore, the fact that a journal is indexed in the WOS database provides a certain level of prestige to that journal.

In addition to being indexed in the WOS database being seen as a mark of prestige by journals, some higher education institutions see the number of articles published in journals indexed in the WOS database as criteria for academic promotion, to incentivise its researchers, and for use in the evaluation of research projects (e.g., Al & Soydal, 2012; Asan, 2017a). For instance, in Turkey's process for evaluating applications for associate professorship, the highest article score is awarded to articles published in journals indexed in SSCI, SCI, SCI-Expanded, and A&HCI, excluding letters to editors, abstracts, and book critiques (Yükseköğretim Kurulu, 2020a). Furthermore, the number of articles published in SSCI, SCI, SCI-Expanded, and A&HCI indexed journals and their citation rates are also used as evaluation criteria to assess the research performance of academicians (Chou, Lin & Chiu, 2013; Nederhof & Zwaan, 1991). In addition, an increasing number of governments have enforced research policies that favor the publication of articles in indexed journals in order to accelerate the research productivity of its universities (Butler, 2003; Hicks, 2009; Önder & Kasapoğlu-Önder, 2011; Weingart, 2005), to 'enhance academic excellence in universities', and to 'improve the competitiveness and international visibility of universities' (Chou et al., 2013, p. 23). Hence, in recent years, there has been a trend among researchers towards publishing articles in journals indexed in the WOS database since publishing in these journals provides recognition in the scientific community and is considered as a quality indicator of their articles.

Considering the impact of publishing articles in journals indexed in the WOS Core Collection database on research quality, research productivity, and international visibility, we perceived it to be important to investigate the trends for articles with a Turkish author address entered that were indexed in the SSCI, which is regarded as one of the primary quality indicators of articles published in the social sciences disciplines. When the literature was examined, we were able to detect only a few studies that investigated research trends in Turkey on specific disciplines of various research areas such as accounting and finance (Alkan & Özkaya, 2015), economics (Önder & Kasapoğlu-Önder, 2011), education (Şeref & Karagöz, 2019), and technology (Akçayır & Akçayır, 2016). However, these studies either focused on very specific subjects or spanned only a short time period. On the other hand, in the current study, we conducted bibliometric investigations of the WOS database so as to identify SSCI articles written in the English language and published in the 'Education & Educational Research' area, which is classified under the *Social Sciences* category, between 1980 and 2019.

Furthermore, in the current study, we analysed Turkish-addressed (i.e., where a Turkish author address was used) SSCI articles in terms of various variables (research areas, publication years, number of authors, source titles [i.e., journal name], and number of citations). Therefore, the current study aims to serve two purposes: First, to present an overview of SSCI articles published worldwide between 1980 and 2019; and second, to present a detailed analysis of SSCI articles in the area of 'Education & Educational Research' where a Turkish author address was recorded.

2. Research questions

1 What is the numerical distribution of SSCI articles and highly-cited SSCI articles published worldwide in the area of 'Education & Educational Research'?

2 What does a bibliometric analysis on various variables suggest about the research trends among Turkish researchers regarding the publication of SSCI articles in the area of 'Education & Educational Research'?

3. Method

3.1. Research design

Bibliometric methods were used in the design of this study. According to Broadus (1987), 'Bibliometrics is the quantitative study of physical published units, or of bibliographic units, or of the surrogates for either' (p. 376). In bibliometric analysis, statistical tools are used in order to determine a collection of publications within a given subject area or body of literature, and where the focus is on identifying bibliographic overviews and patterns of scientific publications (Ellegaard & Wallin, 2015). Bibliometric methods are often used in extracting and manipulating data based on content or citation analysis (Wallin, 2005) and such methods have benefited from computer-aided data treatment techniques (Ellegaard & Wallin, 2015). According to Ellegaard and Wallin (2015), citation analysis can be used in bibliometrics to measure the scientific quality of researchers, for the ranking of universities (e.g., Waltman et al., 2012), or to judge the impact of certain publications (e.g., Frandsen & Rousseau, 2005). In the current study, through the application of bibliometric methods, we present an overview of SSCI articles published worldwide between 1980 and 2019, and a detailed analysis of SSCI articles with a Turkish author address entered.

3.2. Data collection and analysis

The data used in the study were obtained as a result of searches made against the WOS database using the advanced search function (see Fig. 1). As can be seen from Fig. 1, the beginning of the time interval was determined as 1980, which is the earliest search date parameter for articles indexed in SSCI. For the end search date, we chose 2019 since WOS records for 2020 were not yet complete at the time of the data collection of the study. The reason for only selecting articles written in the English language was that it is considered to be the global language that researchers from different countries use to communicate, and thereby dominates the scientific community (e.g., Ammon, 2011; Hamel, 2007), and has become the lingua franca for the circulation of scientific knowledge (González-Alcaide, Valderrama-Zurián & Aleixandre-Benavent, 2012). Moreover, the majority of journals only accept articles written in English; for example, 80% of the journals indexed in the Scopus database publish articles written in the English language (van Weijen, 2012).

The WOS classifies research areas according to five broad categories: 'Arts & Humanities', 'Life Sciences & Biomedicine', 'Physical Sciences', 'Social Sciences', and 'Technology' (Clarivate, 2020b). Under the Social Sciences category, there is a sub-category named 'Education & Educational Research' that helps researchers in obtaining studies conducted in the field of education. For the current study, we chose the 'Education & Educational Research' sub-category in order to specifically reveal trends for articles published in SSCI-indexed journals in the field of education.

Two types of information were collected from the WOS database: SSCI articles published worldwide, and SSCI articles in which Turkey appeared in the address field. In order to obtain the first type of information, the following search criteria were entered to the Advanced Search screen: SU = Research Area: Education & Educational Research; Language: English; Document Types: Article; Timespan: 1980–2019; Indexes: SSCI. From entering these search criteria, we obtained a total of 262,319 articles published worldwide in the area of 'Education & Educational Research' as of 18 July 2020 (see Fig. 2). Next, in order to obtain results specific to researchers from Turkey, we entered the following search criteria: CI = Country / Region: Turkey; Language: English; Document Types: Article; Timespan: 1980–2019; Indexes: SSCI.

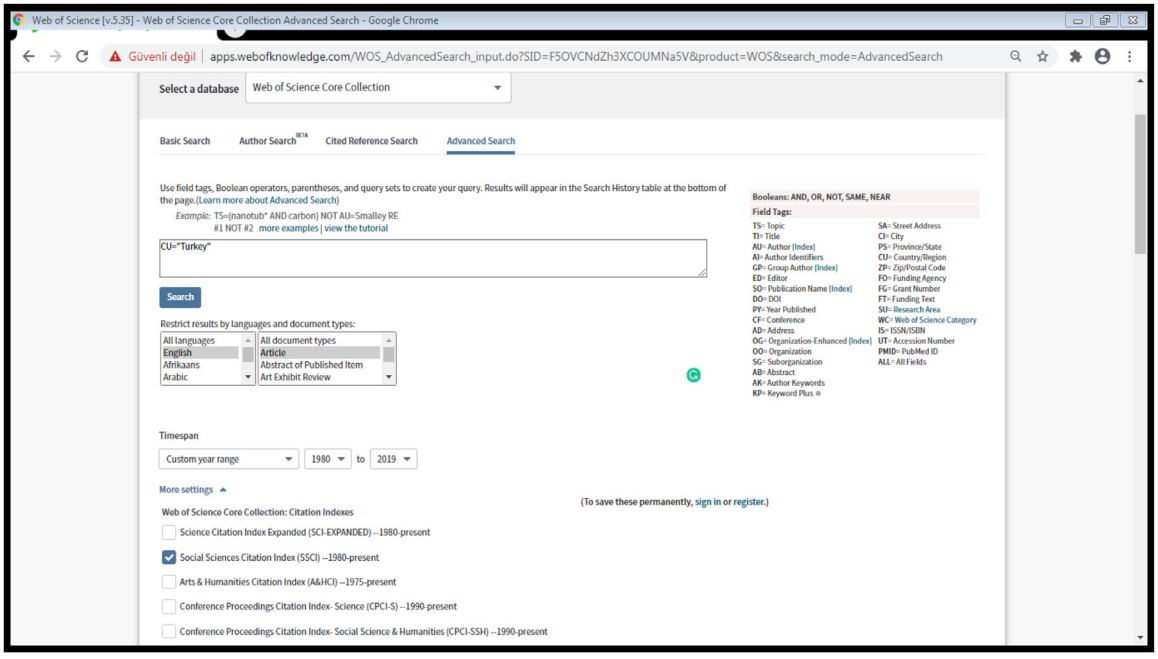

Fig. 1. Web of science advanced search screen.

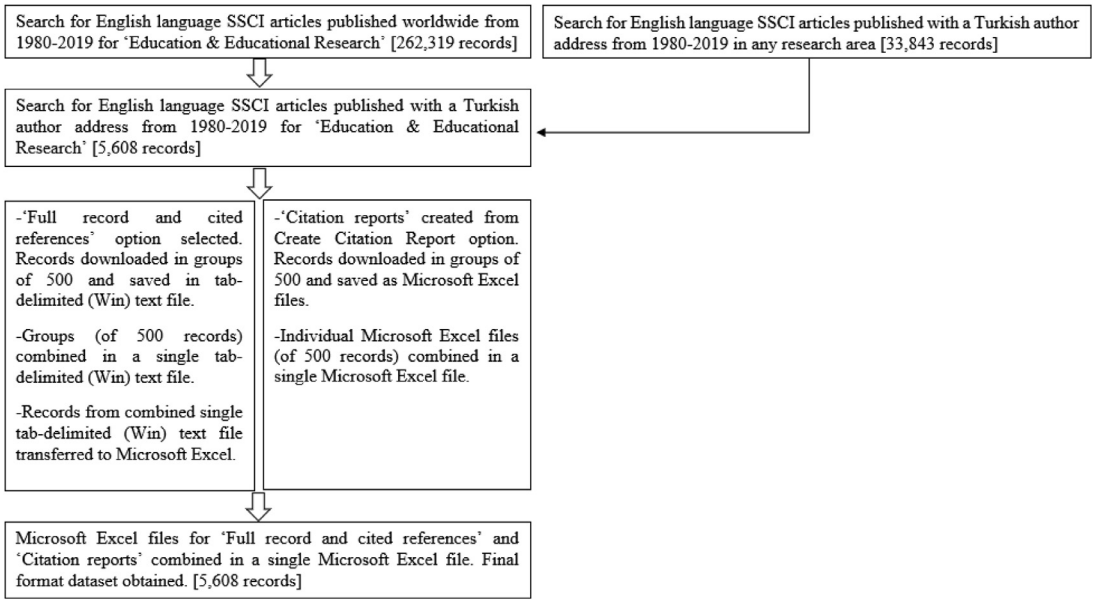

Fig. 2. Data collection process.

This search resulted in a total of 33,843 SSCI-indexed articles that had been written in English, had an author who had used Turkey as their address, and were published in any of the WOS research areas. Finally, in order to further refine the results to those articles published in the 'Education & Educational Research' area, we entered the search criteria SU = Research Area: Education & Educational Research and a total of 5608 articles was returned.

The bibliometric information regarding the 5608 SSCI articles returned where a Turkish author address had been recorded were downloaded by selecting the 'full record and cited references' option, and then saved as a tab-delimited (Win) text file. Moreover, we generated citation reports for these 5608 articles using the 'create citation report' option, which was only available for a maximum of 10,000 article records and downloaded these reports to Microsoft Excel. Since the WOS website only allows the downloading of up to 500 records in a single session, the 'full record and cited references' and 'citation reports' were downloaded in groups of 500 in multiple sessions. After downloading these separate groups of up to 500 records, we combined the 'full record and cited references' in a single tab-delimited (Win) text file and the citation reports in another separate combined Microsoft Excel file. Next, the records in the tab-delimited (Win) text file were transferred to Microsoft Excel. As a final step, we combined the two Microsoft Excel files ('full record and cited references' and 'citation reports') into a single Microsoft Excel file, and obtained the final format of the dataset (see Fig. 2).

4. Results

In this section, we present the findings from our study under two headings. First, we present the numerical distribution of SSCI articles

Table 1
Distribution of articles by country.

Country	Number of articles (n = 262,319)	% of total
United States of America	134,607	51.314
UK	31,945	12.177
Australia	17,000	6.481
Canada	13,031	4.968
People's Republic of China	7023	2.677
Netherlands	6788	2.588
Turkey	**5608**	**2.138**
Taiwan	5131	1.956
Spain	4627	1.764
Germany	4480	1.708

Table 2
Distribution of highly-cited articles by country.

Country	Number of articles (n = 424)	%
United States of America	224	52.830
UK	77	18.160
Australia	48	11.321
Canada	30	7.075
Netherlands	27	6.368
Germany	25	5.896
People's Republic of China	17	4.009
Belgium	11	2.594
Taiwan	10	2.358
Norway	9	2.123

published worldwide in terms of the top 10 countries, and correspondingly the number of highly-cited articles. Second, we present the findings obtained as a result of analysing the SSCI articles where a Turkish author address was recorded in terms of the following variables: research area, year of publication, number of authors, source title (journal name), and the number of citations. We used descriptive statistics in presenting the findings.

4.1. Distribution of SSCI articles & highly-cited SSCI articles by country

As previously stated, from the search criteria entered to the WOS website, we obtained a total of 262,319 SSCI-indexed articles published worldwide for the 'Education & Educational Research' area. When the search results were refined according to the 'Countries/Regions' option, we obtained the top 10 countries for the most articles published (see Table 1). Table 1 shows that in 5608 (2.138%) articles, Turkey appeared in the author address field, and that Turkey was ranked seventh in terms of the number of articles published.

To report SSCI articles most highly cited, we used the 'Highly Cited in Field' option provided by the WOS. Highly-cited articles are defined as 'papers that continue to be cited for many years after publication' (Clarivate, 2020a). In determining highly-cited articles, the WOS uses a search criteria that includes counting the number of papers at 'different levels of citation' and constructing distributions for each field and year of publication. Next, these distributions for each field/year are used to set selection thresholds. When the search results were refined according to the 'Highly Cited in Field' option, we obtained a total of 424 highly-cited articles which corresponded to 1.616% of the total number of articles published. When these 424 articles were refined according to the 'Countries/Regions' option, we obtained the results presented in Table 2, which shows the top 10 countries and the number of highly-cited articles from these countries. The search results indicated that there were only three highly-cited articles where a Turkish author address had been recorded (0.707%). Hence, based on the number of highly-cited articles, Turkey was not placed among the top 10 countries. Similarly, Spain also lost its place among the top 10 countries, whereas Belgium and Norway entered to the list. Therefore, the findings presented in Tables 1 and 2 suggest that having a high number of publications alone is not intrinsically linked with high numbers of citations, but that it is important to publish high quality articles that attract interest from other researchers. In addition, it is notable that the countries ranked among the top 10 are those with considerable economic power, according to 2019 data obtained from The World Bank (2020). In this context, the findings show that the United States of America takes first place by far in terms of its economic size and the number of SSCI-indexed articles its researchers have published.

Table 3
Distribution of Turkish-Addressed SSCI Articles by Research Area.

Research area	Number of articles (n = 33,843)	%
Business & Economics	6540	19.325
Education & Educational Research	5608	16.571
Psychology	3914	11.565
Psychiatry	2299	6.793
Nursing	2180	6.442
Social Sciences Other Topics	2125	6.279
Environmental Sciences Ecology	1888	5.579
Engineering	1587	4.689
Computer Science	1327	3.921
Operations Research Management Science	1312	3.877

4.2. Turkish-Addressed articles in terms of various variables

In the WOS database, we obtained a total of 33,843 articles published between 1980 and 2019, which were written in English, indexed in SSCI, and where a Turkish author address had been recorded. When these articles were arranged based upon their area of research, we obtained the findings presented in Table 3. It should be noted that an article may be listed in more than one research area based on the scope of the journal that it was published. According to Table 3, most of the SSCI-indexed articles where a Turkish author address had been recorded were published in the area of Business and Economics (19.32%). Second to that were articles written in the area of Education and Educational Research, which is the focus of the current study, and represents 16.57% of the total number of articles.

When the search results presented in Table 3 were refined based on the Education and Educational Research area, a total of 5608 articles were revealed. Hence, we were able to obtain the dataset that is subsequently referred to for the remainder of the current study.

The distribution of these articles according to their year of publication and the number of authors is presented in Table 4. As can be seen in Table 4, there were no articles published in SSCI-indexed journals during 1980, 1982, 1987, 1988, or 1991. In other words, Turkish-addressed articles have only been published continuously since 1992, and in varying numbers. While the article written by Balman (1981) was the first study published in an SSCI-indexed journal, the article written by Deb et al. (2019) is the study that was conducted by the most number of researchers, with a group of 80 researchers in fact. Furthermore, Table 4 shows that most of the articles were prepared by a single author (2025 [36.109%]), and that the most number of articles were published in 2012 (752, [13.409%]). Moreover, Table 4 indicates a decrease in the number of articles published by single authors in recent years (since 2012 but excluding 2015). On the other hand, Table 5 shows a relatively large increase in the number of Turkish-addressed SSCI-indexed articles published during the past 10 years. As presented in Table 5, 86.16% of the 5608 articles were published between 2010 and 2019.

According to the Turkish Council of Higher Education, which regulates all higher education in the country including its universities, as of July 2020, there are a total of 207 higher education institutions, including 129 state universities, 74 private universities, and four private vocational colleges (Yükseköğretim Kurulu, 2020b). The Turkish Council of Higher Education offers a service (Yükseköğretim Kurulu, 2020c)

Table 4
Distribution of Turkish-Addressed SSCI Articles by Publication Year / Number of Authors.

Publication year	Number of authors																	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	17	50	80	
1981	1																	1
1983		1																1
1984	1																	1
1985				1														1
1986	1																	1
1989	3		2															5
1990	2		1															3
1992			2															2
1993			1															1
1994	2	2	1															5
1995	1	1	1															3
1996	1	4																5
1997	4	3																7
1998	1	1	1															3
1999		1	1															2
2000	1	3																4
2001	1	1	3			1												6
2002	7	3																10
2003	10	3	2				1											16
2004	9	7	4	2	1	1												24
2005	13	15	5	3			1											37
2006	13	22	12	8														55
2007	27	24	11	3	2										1			68
2008	88	74	25	14	3	1			1									206
2009	118	96	64	18	2	8	2			1								309
2010	151	118	53	22	7	3	2	2	1	1								360
2011	199	140	83	11	8	5	2	1	1									450
2012	356	203	120	42	14	6	8	2	1									752
2013	235	158	70	25	9	3	5	4			1							510
2014	149	155	88	31	19	5	4	6		1								458
2015	183	190	90	25	15	3	3	2		2	2	1	2		1			519
2016	143	181	81	46	15	6	2	3	2	1	1	1						482
2017	117	204	73	33	12	6	4	2	1		1	1						454
2018	100	171	70	21	11	8	3	1	1	1								387
2019	88	201	94	31	15	11	8	3	3	2			1	1		1	1	460
Total	2025	1982	958	336	133	67	45	26	11	9	5	3	3	1	2	1	1	5608

Table 5
Distribution of Turkish-Addressed SSCI Articles by Publication Period / Article Numbers.

Publication period	Number of articles (n = 5608)	%
1980–1989	10	0.178
1990–1999	31	0.553
2000–2009	735	13.106
2010–2019	4832	86.163

Table 6
Active working academicians within educational sciences and teacher training research areas in Turkey.

Professional title	Number of academicians (n = 10,619)	%
Professor	1116	10.51
Associate Professor	1153	10.86
Assistant Professor	2916	27.46
Teaching Assistant	3602	33.91
Research Assistant	1832	17.25

that allows individuals to obtain certain basic information (e.g., title, forename-surname, research area, science field, etc.) on academicians actively working within Turkish higher education institutions. At the time of conducting the current study, there were 12 categories listed under the research area section of this service, one of which was 'Educational Sciences and Teacher Training Research'. When we listed these academicians as of 29 July 2020, we obtained information on a total of 10,619 academicians (see Table 6). Considering this number of active working academicians and assuming that the 5608 SSCI-indexed articles were written by these academicians (i.e., as articles that had an address in Turkey; although, some articles could have been authored by non-academic individuals or by academicians from other fields, etc.), the rate of articles per academician was approximately 0.528 for the 'Education & Educational Research' area. However, calculating an exact number would be too onerous a task since some articles might have been written by more than one author, some may have authored more than one qualifying article, written articles listed in other WOS research areas, or the authors may have since retired or relinquished their positions during the 40-year period that the current study covers.

When the distribution of the 5608 SSCI-indexed articles where a Turkish author address had been recorded were investigated in terms of source titles (i.e., journal name), the articles were published in a total of 272 different journals. Details of the 10 journals with the highest number of publications are presented in Table 7. Notably, Table 7 shows that 17.33% of 5608 articles were published in 'Educational Sciences: Theory & Practice', which is no longer indexed in SSCI, and 11.77% were published in the 'Education and Science'. One interesting finding was that although only 2.23% of the articles were published in the 'Computers & Education' journal, the articles published in this particular journal received the most number of citations from articles published in journals indexed in the WOS. The total number of articles published in these top 10 journals corresponds to 56.63% of the total of 5608 published articles. However, it should be noted that six of these 10 journals are no longer indexed in SSCI, and the number of articles published in these six journals corresponds to 37.29% of the total published articles.

Finally, when the 5608 SSCI-indexed Turkish-addressed articles were investigated based on the number of citations that they received per year

Table 7
Distribution of Turkish-addressed SSCI articles by source title.

Source title	Number of Articles (n = 5608)	%	Citations received (per WOS)	Journal SSCI-indexed on 20 July 2020?	
Educational Sciences: Theory & Practice (formerly known as Kuram ve Uygulamada Egitim Bilimleri or KUYEB)	972	17.332	3444	No	
Education & Science	660	11.769	1624	Yes	
				Impact Factor	
				2019	5 year
				0.493	0.687
Eurasian Journal of Educational Research	282	5.029	1170	No	
Energy Education Science & Technology, Part B Social & Educational Studies	248	4.422	1352	No	
Eurasia Journal of Mathematics, Science & Technology Education	215	3.834	910	No	
Journal of Baltic Science Education	204	3.638	566	Yes	
				Impact Factor	
				2019	5 year
				0.915	0.769
Hacettepe University Journal of Education	191	3.406	586	No	
Turkish Online Journal of Educational Technology	183	3.263	1558	No	
Computers & Education	125	2.229	4512	Yes	
				Impact Factor	
				2019	5 year
				5.296	6.323
Nurse Education Today	96	1.712	860	Yes	
				Impact Factor	
				2019	5 year
				2.49	3.024

from articles indexed in the WOS database, we obtained the findings presented in Table 8. According to the data taken from the WOS database on 18 July 2020, the total number of citations for the 5608 articles prior to 2020 (2020 data was not included) was 37,312, and that the average number of citations per article was calculated as being 6.653. Table 8 shows that there were no citations recorded between 1980 and 1987. Moreover, contrary to expectations, the number of citations did not increase continuously until 2003. However, as expected, there has been a continuous increase in the number of citations since 2003 (albeit, ignoring 2012), and the highest number of citations were received in 2019. Overall, the article authored by Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur and Sendurur (2012) was the most cited, with 363 citations as of the end of 2019. In addition, this same article was also one of three Turkish-addressed highly-cited articles in the field.

Table 9 presents the numerical distribution of non-cited Turkish-addressed articles based on their year of publication. As can be seen in Table 9, 22.91% of the 5608 SSCI-indexed articles had not received any citations as of the end of 2019. As expected, most of the non-cited articles had only been published that same year (2019), and that the articles published in the last 3 years (2017–2019) accounted for approximately half of the total non-cited articles.

5. Conclusions and discussion

The current study applied bibliometric methods in order to collect information about SSCI-indexed articles written in the English language that had been published within the 'Education & Educational Research' area between 1980 and 2019. We presented our findings in two sections: In the first section, we presented the numbers of SSCI-indexed articles and highly-cited articles published worldwide. Second, we presented findings obtained as a result of analysing the SSCI-indexed articles where a Turkish author address had been recorded in terms of several variables (i.e., research areas, year of publication, number of authors, source title [journal name], and number of citations).

In response to the first research question of the study, we investigated the number of English language SSCI-indexed articles and highly-cited SSCI-indexed articles published worldwide within the 'Education & Educational Research' area. As a country, Turkey was ranked seventh in terms of the number of published SSCI-indexed articles but was not in the top 10 countries in terms of highly-cited articles. The search results showed that Turkish-addressed SSCI-indexed articles only corresponded to 2.138% of the total SSCI-indexed articles published worldwide. On the other hand, only three Turkish-addressed articles (0.707%) were among the most highly-cited articles worldwide. These two findings suggest a relatively poor representation of Turkish-addressed articles in the WOS database. On the other hand, with respect to the number of articles and number of highly-cited articles, the United States of America was listed in the addresses section of more than half of the published SSCI-indexed articles. Hence, these findings suggest that the United States of America is the dominant in the social sciences academic community. However, we should note that evaluating the results in Tables 1 and 2 in terms of the number of active researchers working in each country could reveal a more accurate interpretation of these findings. Moreover, in Tables 1 and 2, the first four countries listed were all English-speaking countries. Therefore, as stated by González-Alcaide et al. (2012), the majority of journals indexed in SSCI accepting articles written solely in

Table 8
Citations of Turkish-addressed SSCI articles by year.

Year	Number of citations from WOS Core Collection (n = 37,312)	%
1980	0	0
1981	0	0
1982	0	0
1983	0	0
1984	0	0
1985	0	0
1986	0	0
1987	0	0
1988	2	0.0054
1989	1	0.0027
1990	5	0.0134
1991	4	0.0107
1992	3	0.0080
1993	5	0.0134
1994	9	0.0241
1995	9	0.0241
1996	8	0.0214
1997	12	0.0322
1998	6	0.0161
1999	9	0.0241
2000	8	0.0214
2001	15	0.0402
2002	25	0.0670
2003	10	0.0268
2004	21	0.0563
2005	68	0.1823
2006	105	0.2814
2007	165	0.4422
2008	300	0.8040
2009	556	1.4901
2010	938	2.5139
2011	1390	3.7253
2012	3213	8.6112
2013	2484	6.6574
2014	2914	7.8098
2015	3589	9.6189
2016	4298	11.5191
2017	5018	13.4488
2018	5391	14.4484
2019	6731	18.0398

Table 9
Distribution of Turkish-addressed non-cited SSCI-indexed articles (as of 2019).

Year	Number of articles (n = 1285)	%
1983	1	0.078
1984	1	0.078
1989	3	0.233
1990	1	0.078
1995	1	0.078
1996	1	0.078
2000	1	0.078
2005	1	0.078
2007	2	0.156
2008	19	1.479
2009	33	2.568
2010	37	2.879
2011	55	4.280
2012	157	12.218
2013	86	6.693
2014	68	5.292
2015	86	6.693
2016	87	6.770
2017	118	9.183
2018	173	13.463
2019	354	27.549

the English language appears to affect the number of SSCI-indexed articles published by predominantly non-English-speaking countries and thereby the impact factor of journals that publish articles written in other languages. In addition, we observed that the rankings of the countries also appeared to be linked with their economic status and level of development.

In terms of the study's second research question, we investigated SSCI-indexed articles where a Turkish author address had been recorded in terms of the research areas represented, year of publication, number of authors, source titles (journal name), and the number of citations they had received. As presented in Table 3, the total number of Turkish-addressed SSCI-indexed articles for the 'Education & Educational Research' area was placed second, following 'Business & Economics'. Moreover, in terms of publication years, Table 4 did not suggest a regular increase in the number of articles published in this research area, which was contradictory to the overall worldwide upwards trend. On the other hand, the number of articles published during the past 10 years corresponded to 86.163% of the total articles where a Turkish author address had been recorded (see Table 5). Hence, this upwards trend in the past 10 years suggests a recent increase in the interest of Turkish researchers towards publishing SSCI-indexed articles. This increase appears to have been affected by or linked to the academic promotion requirements and incentives and awards provided by the Turkish Council of Higher Education for the publication of SSCI-indexed articles (Al & Soydal, 2012; Asan, 2017a). Furthermore, with respect to Turkey, there was a decrease seen in the number of single-author articles published since 2012 (albeit, excluding 2015). Therefore, this finding suggests a trend towards more collaborative working among Turkish researchers.

In terms of the journals that Turkish-based researchers mostly prefer to publish their articles, seven out of the 10 most used journals originated from Turkey ('Educational Sciences: Theory & Practice', 'Education and Science', 'Eurasian Journal of Educational Research', 'Energy Education Science & Technology Part B Social & Educational Studies', 'Eurasia Journal of Mathematics, Science & Technology Education', 'Hacettepe University Journal of Education', and the 'Turkish Online Journal of Educational Technology') (Asan, 2017b; Clarivate, n.d.a). However, among these seven journals, only 'Education and Science' still remains indexed by SSCI. Moreover, the articles published in these seven journals corresponded to almost half (49.055%) of the total number of Turkish-addressed SSCI-indexed articles. Hence, the high concentration of articles in these seven journals suggests that Turkish researchers working in the 'Education & Educational Research' area are inclined towards publishing articles in specific journals of Turkish origin that have relatively low impact factors. In agreement with this finding, Doğan, DHYI and Al (2018) investigated Turkish-addressed journals that have been indexed in WOS database sometime in between 2005 and 2015 but dropped out from the database for some reasons. Doğan et al. (2018) found that 14 out of 80 journals were removed from WOS database in between 2005 and 2015. Moreover, they reported that some of these 14 journals had very high self-citations and published differing numbers of articles each year. Finally, in seven out of 14 journals, the ratio of Turkish-addressed articles to the total number of articles were above 90%.

With regards to article citations, the average number of citations per article where a Turkish author address was recorded was calculated as being 6.653. When we investigated the average number of citations per article in counterpart countries (see Table 1), it was seen that the average number of citations per article (as of 10 September 2020) from the WOS database was 17.35 for Taiwan, 12.77 for Spain, and 17.29 for Germany. Although there were a greater number of Turkish-addressed articles than those from Taiwan, Spain, and Germany, the average number of citations per article for Turkey was lower than for these other three countries. The poor average citation record might be a result of some of the 272 journals in which Turkish-addressed SSCI articles were published being no longer indexed in the WOS database. For instance, 94% of the citations for articles published in the 'Energy Education Sci-

ence & Technology Part B Social & Educational Studies' journal, which was listed fourth among the 10 journals (see Table 8), were reported as journal self-citations (Al & Soydal, 2012).

In summary, our findings overall suggest that Turkish researchers are inclined towards publishing their articles mainly in Turkey-originated journals with low impact factors. This tendency may be explained by some personal and work environment-related factors including, but not limited to, language barrier (e.g., Olkun, 2006; Poyrazlı & Şahin, 2010), heavy workload (e.g., Arı, 2007), academic promotion policies (e.g., Arı, 2007; Karataş, Özen & Gülnar, 2017), academic incentives and publication awards (e.g., Al & Soydal, 2012; Asan, 2017a), and research habits (e.g., Olkun, 2006). Regarding the issue of language barrier, Olkun (2006) reported language proficiency and lack of ability to write in a scientific style as one of two major obstacles to publishing academic papers. Olkun (2006) reported the second obstacle as researchers' tendencies to choose trivial, local, shallow, or outdated research questions that appears to be related to the research habits of academicians. On the other hand, Arı (2007) presented excessive course-load as one of the factors affecting researchers' ability to follow publications in their field. Furthermore, regarding Turkey's academic promotion policy, Karataş et al. (2017) reported Turkish academicians' discomfort about their qualifications being evaluated mainly by quantitative descriptors (e.g., number of articles, chapters, books, or oral presentations), and not by the quality of their works. Similar concerns were also reported by Demir, Demir and Özdemir (2017), who pointed to a necessity to review the academic promotion and appointment policies in Turkey. Finally, as previously stated, publication awards and academic incentives may have also been effective in Turkish researchers' publication trends. Although these awards and incentives have been considered useful in increasing the number of Turkish-addressed SSCI-indexed articles, especially during the past 10 years, they may also be responsible for the researchers' inclination towards publishing articles in Turkey-originated journals with low impact factors.

6. Limitations and suggestions for future research

In the current study, we collected bibliometric information on scientific articles written in the English language and published in SSCI-indexed journals. Conducting research on articles written in other languages and/or published in different databases may yield valuable results. Moreover, the findings indicated a leap after 2007 in the number of SSCI-indexed articles where a Turkish author address had been recorded. However, why such a leap occurred after 2007, and the decrease in the number of articles after 2012, which included the publication of the highest number of articles, are two important issues that are in need of investigation. In particular, investigating the causes of increments and decrements in the number of SSCI-indexed articles after 2007 and 2012, respectively, would be useful considering the increased number of universities and academic staff in Turkey. In addition, we believe that there may be a relationship between the number of SSCI-indexed articles published from a particular country and the number of universities in that country listed as being in the top 1000 worldwide. Therefore, we would encourage future studies that investigate this relationship. Finally, we would suggest that policymakers and individuals responsible for the organization and operation of higher education institutions should consider the findings presented in this study in terms of driving forwards improvements in scientific productivity and the quality of universities in Turkey.

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Code availability

This study did not involve software applications.

Declaration of Competing Interest

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