

Describing Religious Expressions Over Time through Scopus: A Bibliometric Analysis

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Abstract

Religious expressions refer to the various outward manifestations of inward religious faith in social interactions. Inevitably, studies on religious expressions have long been conducted across academic fields but inadequately reviewed. To examine how the publication and citation patterns have developed over time, this bibliometric study retrieved bibliographic data from Scopus on August 22, 2022 by providing a search query of related terms in titles, abstracts, and keywords. Refined with OpenRefine version 3.5.0, the data of 1,341 documents were submitted to Bibliometrix R-package version 4.0. Based on the median number of publications, two research periods were identified, namely the earlier period (from 1916 to 2013) and the recent period (from 2014 to 2022). Most documents were from the Social Sciences along with Art and Humanities. The leading sources in publications and citations were from the religion area but most locally and globally cited documents were from other areas including Psychology and Business and Management. As the foremost country in publication and citation, the United States of America had most impactful authors in terms of local and global citations. Not only could this study provide retrospective insights including the evolutionary nuances but also prospective ones for future studies.

Keywords: expression of religiosity, faith expression, spiritual expression, Scientometrics.

Introduction

Religious expressions (REs) have become a critical issue in various disciplines across spatial temporal dimensions. In terms of disciplines, even though REs is commonly associated with the religion area (Keenan & Arweck, 2017), REs has also been examined in other arenas including Pharmacology, Toxicology and Pharmaceutics (Spennemann, 2020). Regarding the spatial dimension, research into REs has been carried out not only in the real world but also in the virtual one (Abokhodair et al., 2020). REs could be observed on the Earth's surface including in schools (Herbstrith et al., 2020) and prisons (Magyar-Russell & Griffith, 2016) along with the outer space (Edwards, 2020; Oliver, 2013). REs has also widely been addressed from local (Hamzani, 2020) to global (Pew Research Center, 2019) levels. As for the temporal dimension, one of the identified studies into REs was published in the late 19th century. The study discussed excellently the roles played by REs in a social life (Marshall, 1897). Coloring the history of humanity, REs is arguably an inseparable ingredient in the history of humanity (Gutkowski, 2022; Haiman, 2003). REs is therefore always relevant to and interesting for researchers across the scientific enterprises.

The continuing relevance and true significance of REs could be established because REs occupy opposite ends of the spectrum. As a material or outward manifestation of immaterial inward religious faith (Keenan & Arweck, 2017), REs has certainly been manifested by a huge number of people in both intra- and inter-religious social interactions (Sani, 2020). The manifestation could be seen from French Muslim children who materialized Heaven through drawing (Güleç, 2021) to American astronauts who read some verses of Genesis in the Moon's orbit (Edwards, 2020; Oliver, 2013). REs' opposite ends of the spectrum span from being helpful to being harmful (Pargament et al., 2000), "peaceful piety-oriented ones to the most brutal and violent ones" (Sani, 2020, p. viii). They range from transient ones such as a disposable greeting card to transcendent ones such as the monumental Budhas of Bamiyan (Keenan & Arweck, 2017). The outward side of inward faith was also manifested in various media of expression from music such as American jazz (Booker, 2016) to movie including The Ten Commandments (Williams, 2000). Besides, REs was expressed as dances such as the classical Hindu dance performance (David, 2009) and Norwegian Christian dance (Schuff, 2019) and dresses including Islamic stylish fashionable headscarves (Kavakci & Kraeplin, 2017). The manifestation ranged from incantation including magical hymns of the Greek Egyptian syncretism (Bortolani, 2016) to architecture such as the religious and cultural identity of a Bruneian mosque (Lopes & Hasnan, 2022). Comprehensive though the previous research may claim to be, it does not cover the whole gamut of REs.

Numerous researchers have expectedly run the gamut of REs. For example, they studied a multidimensional relationship between states and religions. In some countries such as in Malaysia (Sani, 2020), REs were strictly interpreted and officially managed by the states. Additionally, a big picture of REs drawn from the multifaceted state-religion relationships (Gutkowski, 2022; Nieuwenhuis, 2012) shows that REs deal with not only an expression of a certain religion but also an expression to a certain religion (Jones, 2011; Rockenbach et al., 2017). Interestingly, an expression of a certain religions could "imitate" an expression of another religion due to the social dynamics (Saputra, 2019, p. 3).

In both inter- and intra-religious social interactions (Keenan & Arweck, 2017), both of the expressions of and to a certain religion complicated how, namely the freedom of religion could sometimes counteract another human right, namely freedom of expression (Petersen, 202). While the freedoms of religion is "internationally protected human right", the freedom of expression have "no comprehensive international treaty" as compared by Kapai and Cheung (2009, p. 41).

In Sweden, for instance, the government underlines that REs are not allowed to enter for a public domain, but Muslim immigrants consider otherwise (Mohiuddin, 2017). In the COVID-19 crisis, how the public health was handled by the states such as the Kingdom of Saudi Arabia's international ban on Haj pilgrimage (Robinson, 2020) was negatively considered the curtailment of REs. On the world stage of state and religion relationship, the pendulum historically always swings back and forth between the two fundamental rights.

Additionally, much work has been carried out on the controversy over REs as religious obligations versus contemporary institutional or social regulations and demands. For example, the use of turbans as a compulsory RE for the Sikhs versus the use of helmets as head protection for two-wheelers (Spennemann, 2020). On the other hand, some REs have been modified with no substantial loss of religious meaningfulness. The modified REs could then meet such regulations and demands. In Southeast Asia, the world's most religiously diverse region (Jereza, 2016), stylish fashionable hijab of Muslim headscarves by female youth Muslims is a hybrid of REs, youth culture, and social media (Williams & Kamaludeen, 2017).

In addition, REs such as wearing a hijab by a female Muslim employee of an American

café was considered to not comply with the company's business image (Robinson et al., 2012). However, many research studies suggest the positive effects of workplace -supported REs on employees' professional performance and ethics (Héliot et al., 2020). Within this view, the examples of REs represent well the opposite ends of spectrum.

The next decades are likely to witness that research into REs is still relevant. In the 1960s a lot of people projected the decreasing relevance of religions to modern milieus. This was shown with a provoking question in a cover story of TIME magazine (<https://time.com>) six decades ago, "Is God Dead?" (TIME, 1966). The answer to the question could be "no". Even nowadays religion is still very important or somewhat important to the majority of participants in 23 out of 34 countries along with both God and prayer are important to those in 22 countries (Tamir et al., 2020). The results are barely distinguishable from a study with over 90 thousand respondents shows the strong majority in nearly 100 countries stated their belief in the God's existence and importance in their lives (Leite et al., 2020).

Furthermore, even decades of anti-religion policy in the People's Republic of China (Cao, 2018) could not stop the religious vitality as examined by Yang (2014) and Gao (2022). These conditions could prove possible to meet the projection of the increasing share of religiously affiliated people in the world's total population by the next thirty decades (Pew Research Center, 2015). Seen in this way, REs are destined to become an important research topic in many fields because of the dynamics of REs as manifested in the more complex intra- and interreligious social interactions. The dynamics could add to the growing body of literature on REs.

At the same time, the breadth and depth of existing literature on REs as a whole could serve as a base for a research synthesis. In fact, synthesizing previous research studies could result in better understanding of a certain research topic or field of study which, in turn, can be very beneficial to advancements in science (Donthu et al., 2021; Zupic & Čater, 2015). Unfortunately, the breadth and depth of REs have never been paid enough attentions. Very little is known about the scientific performance in REs as a topic area in terms of the patterns of publication (product or quantity) and citation (impact or quality). With this in mind, this study seeks to catch REs as a research topic through a bibliometric analysis.

Bibliometrics is one of the three methods of synthesizing cumulative research studies. This method was first introduced as "the application of mathematics and statistical methods to books and other media of communication" (Pritchard, 1969, p. 349) from a French term "bibliométrie" (Otlet, 1934/1934, p. 13). Especially in the era of exponential growth rate of scholarly publication (To & Yu, 2020), bibliometrics offers the broadest coverage, most rigorous and transparent technique, and the least biased results (Zupic & Čater, 2015) among a (narrative or structured) literature review and a meta-analysis. One of the few bibliometric studies into religion could find the increased growth rate of Scientific Study of Religion within a time span of almost four decades (Wildman, 2021).

After manually conducted by listing scholars, their works, affiliations, and regions (Cattell, 1906), bibliometrics is now standing on a tripod of product (quantity or publications) along with both impact (quality or citations) and index (ranks in a certain database) as pioneered by Science Citation index in the 1960s (Garfield, 2007). Since then bibliometrics has consisted of performance and science mapping analyses (Donthu et al., 2021). Both of the analyses involve a plethora of complicated algorithms as well as mathematical and statistical formulas such as Multiple Correspondence Analysis (Aria & Cuccurullo, 2017). Rooted in the Library and Information Science, bibliometrics has advanced remarkably as demonstrated by

28 easy-to-access academic search engines and bibliographic databases (Gusenbauer & Haddaway, 2020) including Scopus (<https://www.scopus.com>) and 11 user-friendly bibliometric tools at researchers' disposal (Moral-Muñoz et al., 2020) including Bibliometrix R-package (Aria & Cuccurullo, 2017). Gone are the days of complicated manual bibliometric performance and science mapping analyses.

The breadth and depth of existing body of literature on REs have relatively been neglected in spite of its ongoing relevance and importance in more complex intra- and inter-religious social interactions. Meanwhile, bibliometrics offers the breadth and depth of coverage for synthesizing collective knowledge of REs with less bias. REs as a line of research and bibliometrics as a method of performance analysis, therefore, deserve each other.

With the bedrock of bibliometric performance analysis, this study examines how on the global basis the publication and citation patterns of REs have emerged overtime. Also known as a bibliometric descriptive analysis, the performance analysis including the publication and citation growth along with the most prolific players such as authors and organizations in terms of publication and citation (Aria & Cuccurullo, 2017) is used to answer the following questions.

1. What were the subject areas in Scopus that covered REs?
2. How were the patterns of publication and citations regarding studies into REs during the earlier and recent periods?
3. When was the earlier and recent periods of studies into REs?
4. What were the top 10 countries in terms of publications and corresponding authors during the earlier and recent periods?
5. What were the top 10 countries in total citations during the earlier and recent periods?
6. What were the top 10 affiliations in publications in during the earlier and recent periods?
7. What were the top 10 sources in local impact during the earlier and recent periods?
8. Who were the top 10 authors in local impact during the earlier and recent periods?
9. What were the top 10 documents in global and local citations during the earlier and recent periods?
10. What were the top 50 keywords provided by authors in the earlier and recent periods could be?

Through the bibliometric performance analysis, this study could give a snapshot of REs as a line of research. The snapshot could then reveal possible research gaps and offer hindsight for future research into REs for theoretical and practical domains.

Method

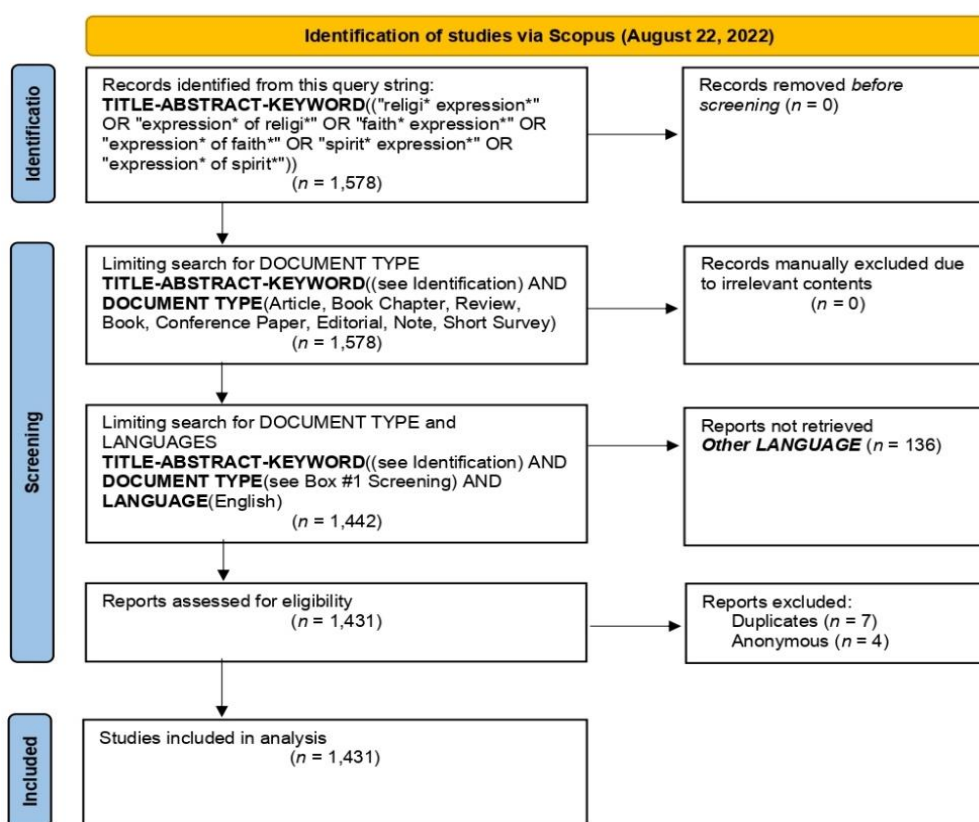
No ethical approval was needed for this study. The method presented here is essentially the same as two previous bibliometric study (Cosmo et al., 2021; Fortuna et al., 2020). As one of the developers of Bibliometrix R-package (Aria & Cuccurullo, 2017) used in this study joined the research team, he knows best how to use tools and understand completely the complicated algorithms behind any analyses in the tools he have developed. From the Abstract to Availability of Data, the present bibliometric performance analysis and science mapping are reported in line with a variation of the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) as outlined by Page et al. (2021).

Some preliminaries data retrieval and analyses were carried out from October 2020 to July 2022. As can be seen in Figure 1, on August 22, 2022 bibliographic records of RE literature were retrieved from Scopus. The query string and no specified publication year were intended

to identify all publications on REs. After both authors had limited the language to English only, they screened manually all titles, abstracts, and keywords to find those irrelevant to REs.

The screening process covered all of the subject areas and publication types identified by Scopus. Documents with no abstracts or keywords were searched and reviewed to ensure their relevance to REs. An explanation for the inclusion is that many indexing services do not index abstracts or keywords of scholarly works published before the 1990s (Aria et al., 2020). Downloaded as a Comma-Separated Values (CSV) file, 1,431 records were included in the next stages.

Figure 1 also shows a data refinement for de-duplicating records and removing four records with no authors' names by adopting OpenRefine version 3.5.1 (Delpuech et al., 2021). The piece of free data wrangling software used was practically the same as the manual provided the software developers. This stage returned 1,431 reports for descriptive analyses.



From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71

<Fig. 1> Flow Diagram for this Study

The refined data set was submitted to a piece of bibliometric software, i.e. Biblioshiny, a web-based interface of Bibliometrix R-package version 4.0 (Aria & Cuccurullo, 2017). The bibliographic data converted into an Excel file is available as supplemental materials. Further details on bibliographic indicators with regard to performance analysis such as an h-index can be found in the two previous studies (Cosmo et al., 2021; Fortuna et al., 2020).

Results

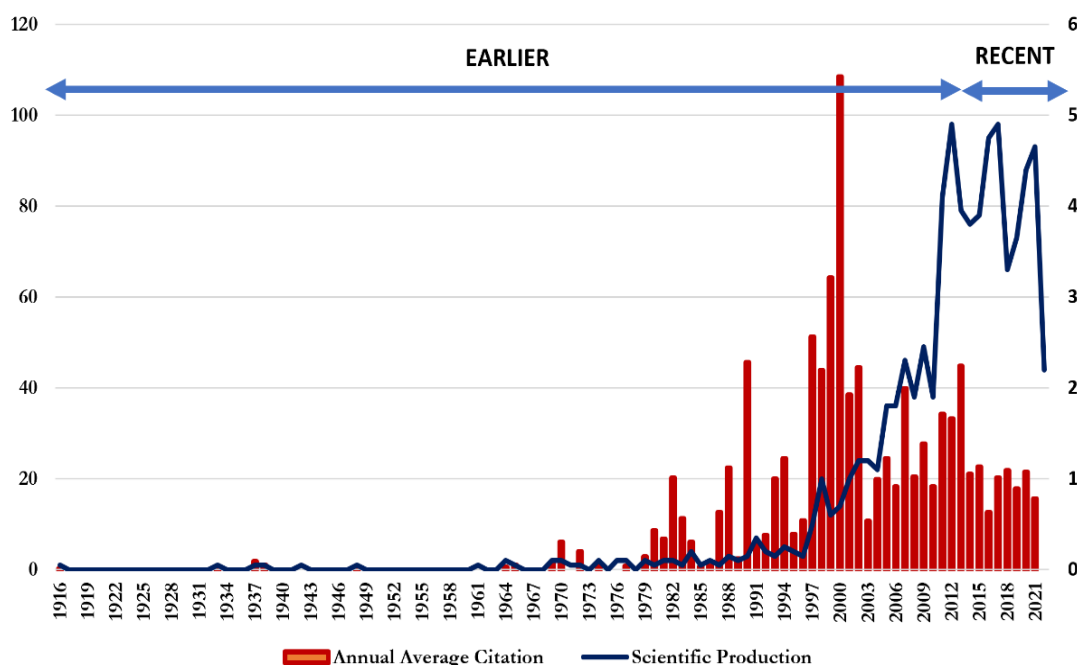
In Scopus, 26 subject areas constituted REs. Over 70% of the documents were covered in “Arts and Humanities” and “Social Sciences” (Table 1). As can be seen in the *Res Militaris*, vol.12, n°2, Summer-Autumn/ Été-Automne 2022

Supplementary Materials, the contributions of 16 other subject areas such as “Earth and Planetary Sciences” ranged between 0.05% and 0.95%.

<Table 1> Studies of Religion Expressions based on the Subject Category in Scopus

| Subject Area | % |
|--|--------|
| Arts and Humanities | 36.97% |
| Social Sciences | 33.52% |
| Psychology | 6.05% |
| Medicine | 5.68% |
| Business, Management and Accounting | 3.23% |
| Nursing | 3.18% |
| Biochemistry, Genetics and Molecular Biology | 1.91% |
| Engineering | 1.18% |
| Economics, Econometrics and Finance | 1.05% |
| Environmental Science | 1.05% |

The dynamics of publication and citation is demonstrated in Figure 2. In terms of scientific production, surprisingly, within a span of over one century no document was published for 47 years. No publication was observed between 1916 and 1933, the longest period of inactivity. Based on by the median number of publications from each year, two research periods of REs can be identified, namely the earlier period from 1916 to 2013 ($n = 720$ documents) and the recent period from 2014 to 2022 ($n = 711$ documents). The annual growth rate for the earlier, recent and whole periods was 4.61 %, -6.6 %., and 3.63%., respectively.



<Fig. 2> Publications and Annual Average Citations of research into REs

Table 2 presents not only the main information about the corpus in each period but also the positive and negative variations concerning bibliographic performance regarding REs. The positive variation (in bold) concerning the latter period could be also observed in terms of

Document Types such as Article. However, most aspects show a negative variation concerning the recent period.

Studies on REs in 573 different sources in the earlier period while they decreased to 550 in the recent period (Table 2). Even though only the top 10 research constituents such as most prolific and cited authors and countries were reported, the complete list is available as downloadable supplementary materials.

<Table 2> Main Information about the Corpus of Religious Expressions in the Two Periods

| Description | Earlier Period (2013 – 2016) | Recent Period (2022 – 2014) |
|---------------------------------|------------------------------|-----------------------------|
| Sources (Journals, Books, etc) | 573 | 550 |
| Documents | 720 | 711 |
| Annual Growth Rate % | 4.61 | -6.6 |
| Document Average Age | 16.9 | 4.17 |
| Average citations per doc | 23.74 | 4.04 |
| References | 36,273 | 37,014 |
| DOCUMENT CONTENTS | | |
| Scopus' Keywords | 1,854 | 1,195 |
| Author's Keywords | 1,258 | 2,005 |
| AUTHORS | | |
| Authors | 1,207 | 1,240 |
| Authors of single-authored docs | 444 | 438 |
| AUTHORS COLLABORATION | | |
| Single-authored docs | 469 | 454 |
| Co-Authors per Doc | 1.77 | 1.86 |
| International co-authorships % | 5 | 8.58 |
| DOCUMENT TYPES | | |
| Article | 440 | 475 |
| Book | 72 | 59 |
| Book chapter | 97 | 104 |
| Conference paper | 11 | 12 |
| Editorial | 6 | 4 |
| Note | 3 | 4 |
| Review | 88 | 53 |
| Short survey | 3 | 0 |

With regard to national productivity, 47 and 69 countries contributed to the line of research in the earlier and recent periods, respectively. Ordered by Country Production, Table 3 compares the data on the national productivity in terms of number of publications.

<Table 3> Top 10 Country Productions in Two Periods

| Earlier Period (1916 – 2013) | | | Recent Period (2014 – 2022) | | |
|------------------------------|-----------------------|-----------|-----------------------------|-----------------------|-----------|
| Country | Number of Publication | %(n=1113) | Country | Number of Publication | %(n=1227) |
| USA | 577 | 51.84% | USA | 410 | 33.41% |
| UK | 115 | 10.33% | UK | 107 | 8.72% |
| CANADA | 67 | 6.02% | AUSTRALIA | 80 | 6.52% |
| AUSTRALIA | 54 | 4.85% | CANADA | 49 | 3.99% |
| GERMANY | 51 | 4.58% | GERMANY | 39 | 3.18% |
| FRANCE | 29 | 2.61% | FRANCE | 37 | 3.02% |
| JAPAN | 24 | 2.16% | SPAIN | 36 | 2.93% |
| CHINA | 21 | 1.89% | BRAZIL | 35 | 2.85% |
| ITALY | 17 | 1.53% | SOUTH AFRICA | 30 | 2.44% |
| SINGAPORE | 15 | 1.35% | SOUTH KOREA | 27 | 2.20% |

The country productivity can also be seen from the number of corresponding authors of one documents from a certain country which include the number of articles written by one or more authors from one country (Single Country Publication) and those by one or more authors from different countries (Multi Country Publication). As in the Country Productions, the United States of America dominated the country productivity in terms of corresponding authors (Table 4). Eight countries could join the top 10 most prolific countries in corresponding authors in two periods.

<Table 4> Top 10 Countries of Corresponding Author in Two Periods

| Earlier Period (1916 – 2013) | | | | | |
|------------------------------|--------------|---------------------|----------------|-------------------|------------------------------|
| Country | Publications | Frequency (n = 720) | Single Country | Multi Publication | Ratio between Single & Multi |
| USA | 213 | 0.296 | 207 | 6 | 0.03 |
| UNITED KINGDOM | 61 | 0.085 | 58 | 3 | 0.05 |
| AUSTRALIA | 25 | 0.035 | 24 | 1 | 0.04 |
| CANADA | 25 | 0.035 | 22 | 3 | 0.12 |
| GERMANY | 12 | 0.017 | 11 | 1 | 0.09 |
| FRANCE | 10 | 0.014 | 9 | 1 | 0.10 |
| SOUTH AFRICA | 10 | 0.014 | 10 | 0 | 0 |
| CHINA | 5 | 0.007 | 3 | 2 | 0.40 |
| FINLAND | 5 | 0.007 | 4 | 1 | 0.20 |
| INDIA | 5 | 0.007 | 4 | 1 | 0.20 |
| Recent Period (2014 – 2022) | | | | | |
| Country | Publications | Frequency (n = 711) | Single Country | Multi Publication | Ratio between Single & Multi |
| USA | 128 | 0.18 | 121 | 7 | 0.06 |
| UNITED KINGDOM | 46 | 0.07 | 40 | 6 | 0.13 |
| AUSTRALIA | 27 | 0.04 | 23 | 4 | 0.15 |
| CANADA | 15 | 0.02 | 14 | 1 | 0.07 |
| FRANCE | 14 | 0.02 | 10 | 4 | 0.29 |
| NETHERLANDS | 14 | 0.02 | 14 | 0 | 0.00 |
| SOUTH AFRICA | 14 | 0.02 | 13 | 1 | 0.07 |
| GERMANY | 13 | 0.02 | 9 | 4 | 0.31 |
| SPAIN | 9 | 0.01 | 9 | 0 | 0.00 |
| INDIA | 7 | 0.01 | 7 | 0 | 0.00 |

The two periods witnessed six countries in both the top ten lists in country productions (Table 3) and corresponding authors (Table 4). It is interesting to examine whether the six countries belong to the top 10 countries in citations.

Table 5 shows the top 10 countries in Total Citations. As expected, the six countries joined the list in the earlier and recent periods.

<Table 5> Top 10 Countries in Total Citations

| Earlier Period (1916 – 2013) | | | Recent Period (2014 – 2022) | | |
|------------------------------|-----------------|---------------------------|-----------------------------|-----------------|---------------------------|
| Country | Total Citations | Average Article Citations | Country | Total Citations | Average Article Citations |
| USA | 6,445 | 30.26 | USA | 904 | 7.06 |
| UK | 1,082 | 17.74 | UK | 220 | 4.78 |
| CANADA | 851 | 34.04 | CHINA | 98 | 16.33 |
| GERMANY | 739 | 61.58 | CANADA | 97 | 6.47 |
| AUSTRALIA | 398 | 15.92 | GERMANY | 93 | 7.15 |
| SWITZERLAND | 326 | 108.67 | AUSTRALIA | 79 | 2.93 |
| SPAIN | 284 | 71.00 | FRANCE | 71 | 5.07 |
| JAPAN | 255 | 127.50 | NETHERLANDS | 45 | 3.21 |
| FRANCE | 201 | 20.10 | HONG KONG | 37 | 18.50 |
| SINGAPORE | 99 | 24.75 | BRAZIL | 27 | 4.50 |

In terms of Average Article Citations, during the earlier period Denmark, Thailand, and Georgia joined the top 10 countries with Average Article Citations of 88.00, 39.50, and 39.00, respectively. During the recent period Morocco, Lithuania, Norway, and Switzerland could join the list with Average Article Citations of 13.00, 11.00, 5.00, and 5.00, respectively (please refer the Supplementary Materials for a complete list).

As can be seen in the Supplementary Materials, between the earlier and recent periods the number of affiliations increased from 498 to 629. Table 6 shows a highly variable affiliations between the two periods of studies into REs. Surprisingly, some institutions were associated with the areas of health.

<Table 6> Top 10 Prolific Affiliations in Two Periods

| Earlier Period (1916 – 2013) | | Recent Period (2014 – 2022) | |
|---|-----------------|-------------------------------------|-----------------|
| Affiliation | Articles | Affiliation | Articles |
| UNIVERSITY OF CALIFORNIA | 20 | HANYANG UNIVERSITY | 9 |
| YALE UNIVERSITY | 16 | UNIVERSITY OF MINNESOTA | 9 |
| NATIONAL UNIVERSITY OF SINGAPORE | 15 | EMORY UNIVERSITY | 8 |
| NATL. INST. OF INFECTIOUS DISEASES | 10 | JILIN UNIVERSITY | 8 |
| UNIVERSITY OF WISCONSIN-MADISON | 10 | MCMASTER UNIVERSITY | 8 |
| ARIZONA STATE UNIVERSITY | 8 | UNIVERSITY OF AUCKLAND | 8 |
| UNIVERSITY OF OXFORD | 8 | UNIVERSITY OF VIENNA | 8 |
| YALE UNIVERSITY SCHOOL OF MEDICINE | 8 | CHILDREN'S HOSPITAL OF PHILADELPHIA | 7 |
| MONASH UNIVERSITY | 7 | SWINBURNE UNIVERSITY | 7 |
| NATIONAL CARDIOVASCULAR CENTER RESEARCH INSTITUTE | 7 | UMEÅ UNIVERSITY | 7 |

Table 7 shows the sources ordered by h-index. In the earlier period, in terms of all of the indexes, the top two sources in local impact (within the corpus only) were “International Journal of Children's Spirituality”, “Journal of Management, Spirituality and Religion”. When

Table 7 is ordered by g-index, “Holistic Nursing Practice” and “Nonprofit and Voluntary Sector Quarterly” were not in the list. Moreover, when ordered by m-index, Table 7 did not show “Nonprofit and Voluntary Sector Quarterly”, “Journal of Church and State”, “Social Compass”, and “Religion”.

<Table 7> Top Ten Sources in Local Impact

| Source Impact of the Earlier Period (1916 – 2013) | | | | | |
|---|-----------------|--------------------|---------|---------|---------------------|
| Source | Total Citations | Total Publications | h-index | g-index | m-index Starting in |
| INTERNATIONAL JOURNAL OF CHILDREN'S SPIRITUALITY | 94 | 9 | 6 | 9 | 0.27 2001 |
| JOURNAL OF MANAGEMENT, SPIRITUALITY AND RELIGION | 148 | 7 | 6 | 7 | 0.32 2004 |
| JOURNAL FOR THE SCIENTIFIC STUDY OF RELIGION | 100 | 5 | 5 | 5 | 0.20 1998 |
| JOURNAL OF THE AMERICAN ACADEMY OF RELIGION | 35 | 4 | 4 | 4 | 0.10 1979 |
| PSYCHOLOGICAL REPORTS | 64 | 4 | 4 | 4 | 0.18 2001 |
| SOCIAL COMPASS | 53 | 6 | 4 | 6 | 0.13 1992 |
| AUSTRALIAN JOURNAL OF ANTHROPOLOGY | 24 | 3 | 3 | 3 | 0.14 2001 |
| HOLISTIC NURSING PRACTICE | 74 | 3 | 3 | 3 | 0.18 2006 |
| JOURNAL OF CHURCH AND STATE | 18 | 4 | 3 | 4 | 0.15 2003 |
| JOURNAL OF HOLISTIC NURSING | 100 | 3 | 3 | 3 | 0.10 1991 |
| Source Impact of the Recent Period (2014 – 2022) | | | | | |
| Source | Total Citations | Total Publications | h-index | g-index | m-index Starting in |
| JOURNAL OF RELIGION AND HEALTH | 27 | 5.00 | 4 | 5 | 1.00 2019 |
| JOURNAL FOR THE SCIENTIFIC STUDY OF RELIGION | 30 | 5.00 | 3 | 5 | 0.33 2014 |
| JOURNAL OF MANAGEMENT, SPIRITUALITY AND RELIGION | 17 | 4.00 | 3 | 4 | 0.38 2014 |
| JOURNAL OF THE AMERICAN ACADEMY OF RELIGION | 17 | 4.00 | 3 | 4 | 0.33 2015 |
| INTERNATIONAL JOURNAL OF CHILDREN'S SPIRITUALITY | 8 | 5.00 | 2 | 2 | 0.22 2014 |
| MENTAL HEALTH, RELIGION AND CULTURE | 60 | 3.00 | 2 | 3 | 0.22 2014 |
| RELIGION AND EDUCATION | 9 | 3.00 | 2 | 3 | 0.29 2014 |
| SOCIAL AND CULTURAL GEOGRAPHY | 30 | 2.00 | 2 | 2 | 0.33 2014 |
| RELIGIOUS EDUCATION | 16 | 2.00 | 2 | 2 | 0.33 2014 |
| VERBUM ET ECCLESIA | 5 | 2.00 | 2 | 2 | 0.29 2014 |

It might be tempting to correlate the number of publications with the three indexes when Table 7 was ordered by Total Publications. Only two sources, namely “Nonprofit and Voluntary Sector Quarterly” and “Holistic Nursing Practice” disappeared from the top 10 source in terms of h-index.

However, if Table 7 had been ordered by Total Citations, no top 10 sources in h-index could have joined the list. The top 10 sources in Total Citations were “Journal of Clinical Psychology” ($n = 1,324$ citations), “Proceedings of the 7th International Conference on

Weblogs and Social Media, ICWSM 2013” ($n = 835$), “Journal of Personality” ($n = 805$), “Journal of Nervous and Mental Disease” ($n = 488$), “Everyday Religion: Observing Modern Religious Lives” ($n = 451$), “Psychological Inquiry” ($n = 403$), “Ethnic and Racial Studies” ($n = 268$), “Journal of Advanced Nursing” ($n = 262$), “Transgenic Research” ($n = 256$), and “The Myth of the Eternal Return” ($n = 248$).

In the recent period, “Journal of Religion and Health” topped Table 7 in terms of all indexes. “Journal of Religion and Health” was the only source that could top the recent period of Table 7 in terms of h-, g-, and m-indexes. A similar pattern as discussed previously could be observed. Only five journals in the recent period of Table 7 could join the top 10 sources in Total Publications, namely “Journal for the Scientific Study of Religion”, “Journal of Religion and Health”, “Journal of the American Academy of Religion”, “Journal of Management, Spirituality and Religion”, and “Sustainability”.

No source in the recent period of REs joined the top 10 sources in Total Citations. As detailed in the Supplementary Materials, the top 10 sources were “Journal of Comparative Neurology” ($n = 108$ citations), “Accounts of Chemical Research” ($n = 106$), “PLOS ONE” ($n = 77$), “Mental Health, Religion and Culture” ($n = 60$), “Science Advances” ($n = 53$), “Human Relations” ($n = 49$), “International Small Business Journal: Researching Entrepreneurship” ($n = 47$), and “Journal of Business and Industrial Marketing” ($n = 47$), and “Personnel Review” ($n = 44$).

Regarding the authors, the earlier period saws 1,207 authors while the recent period saw 1,240 authors (Table 2). However, only 1,088 authors in the earlier period and 842 authors got the h-index of, at least, 1. Ordered by the h-index, Table 8 highlights the top 10 authors in local impact. In the two periods, no author but “Macdonald DA” joined the list. He topped the list in terms of not only h- and g-indexes but also number of publications. The two periods saw some authors having the same h-index.

<Table 8> Top Ten Authors in Local Impact

| Author | Earlier Period (1916 – 2013) | | | Total Citation | Number of Publications | Starting Publication Year |
|-----------------------------|------------------------------|-------|-------|----------------|------------------------|---------------------------|
| | -h | -g | -m | | | |
| | index | index | index | | | |
| MACDONALD DA | 4 | 5 | 0.17 | 369 | 5 | 2000 |
| MONTOLIU L | 4 | 4 | 0.14 | 394 | 4 | 1994 |
| PARGAMENT KI | 4 | 4 | 0.16 | 2,609 | 4 | 1998 |
| AP SIÓN T | 3 | 3 | 0.27 | 37 | 3 | 2012 |
| HOLLAND D | 3 | 3 | 0.14 | 61 | 3 | 2002 |
| KOENIG HG | 3 | 3 | 0.12 | 1,749 | 3 | 1998 |
| SARKISSIAN A | 3 | 3 | 0.27 | 61 | 3 | 2012 |
| SHERKAT DE | 3 | 3 | 0.12 | 176 | 3 | 1998 |
| ARNOLD H-H | 2 | 2 | 0.08 | 83 | 2 | 1997 |
| BARBALET J | 2 | 2 | 0.17 | 9 | 2 | 2011 |
| Recent Period (2014 – 2022) | | | | | | |
| Author | h- | g- | m- | Total | Number | Starting |
| | index | index | index | Citation | of Publications | Publication Year |
| MACDONALD DA | 3 | 4 | 0.38 | 76 | 4 | 2015 |
| MARTÍNEZ-ARIÑO J | 3 | 3 | 0.60 | 25 | 3 | 2018 |
| BOEHM TL | 2 | 2 | 0.22 | 38 | 2 | 2014 |
| CARTER EW | 2 | 2 | 0.22 | 38 | 2 | 2014 |
| COHU M | 2 | 2 | 0.40 | 8 | 2 | 2018 |
| CRONSHAW D | 2 | 3 | 0.67 | 12 | 3 | 2020 |
| DADDOW A | 2 | 2 | 0.67 | 11 | 2 | 2020 |
| DADDOW N | 2 | 3 | 0.67 | 12 | 3 | 2020 |
| DANBOLT LJ | 2 | 2 | 0.25 | 24 | 2 | 2015 |

During the earlier period, “Pargament KI” having the h-index of 4 received the highest citation along “Ap Siôn T” and “Sarkissian A” had the highest m-index. However, during the recent period, no top ten authors in Local Impact could joined the top 10 authors in terms of m-index and Total Citations. As can be seen in the Supplementary Materials, 26 authors had the highest m-index of 1 and eight authors received the highest Total Citations of 108.

As shown in Table 2, a corpus of 720 documents in the earlier period and of 711 documents in the recent period were descriptively analyzed. Table 9 shows the top 10 documents in citations received from all documents indexed in Scopus (Global Citations) in each period. The top globally cited documents published in the earlier period received higher citations that those in the recent period.

**<Table 9> Top 10 Documents in Global Citations
Earlier Period (1916 – 2013)**

| Document | Total Citations | Annual Total Citations | Normalized Total Citations |
|---|-----------------|------------------------|----------------------------|
| “Pargament, Kenneth I., Harold G. Koenig, and Lisa M. Perez. “The Many Methods of Religious Coping: Development and Initial Validation of the RCOPE.” <i>Journal of Clinical Psychology</i> 56, no. 4 (2000): 519–43. doi:10.1002/ (SICI)1097-4679 (200004)56:4<519::AID-JCLP6>3.0.CO;2-1.” | 1,305 | 56.74 | 10.94 |
| “Choudhury, Munmun De, Michael Gamon, Scott Counts, and Eric Horvitz. “Predicting Depression via Social Media.” <i>Proceedings of the International AAAI Conference on Web and Social Media</i> 7, no. 1 (2013): 128–37.” | 835 | 83.50 | 41.38 |
| “Zinnbauer, Brian J., Kenneth I. Pargament, and Allie B. Scott. “The Emerging Meanings of Religiousness and Spirituality: Problems and Prospects.” <i>Journal of Personality</i> 67, no. 6 (1999): 889–919. doi:10.1111/1467-6494.00077.” | 501 | 20.88 | 6.78 |
| “Ammerman, Nancy T., ed. <i>Everyday Religion: Observing Modern Religious Lives</i> . 1st ed. New York: Oxford University Press, 2007. doi:10.1093/acprof:oso/9780195305418.001.0001.” | 409 | 25.56 | 13.67 |
| “Pargament, Kenneth I. “The Bitter and the Sweet: An Evaluation of the Costs and Benefits of Religiousness.” <i>Psychological Inquiry</i> 13, no. 3 (July 1, 2002): 168–81. doi:10.1207/S15327965PLI1303_02.” | 403 | 19.19 | 9.06 |
| “Koenig, Harold G., Kenneth I. Pargament, and Julie Nielsen. “Religious Coping and Health Status in Medically Ill Hospitalized Older Adults.” <i>The Journal of Nervous and Mental Disease</i> 186, no. 9 (September 1998): 513–21.” | 400 | 16.00 | 7.60 |
| “MacDonald, Douglas A. “Spirituality: Description, Measurement, and Relation to the Five Factor Model of Personality.” <i>Journal of Personality</i> 68, no. 1 (2000): 153–97. doi:10.1111/1467-6494.t01-1-00094.” | 304 | 13.22 | 2.55 |
| “Eliade, Mircea. <i>The Myth of the Eternal Return: Or, Cosmos and History</i> . Translated by Willard R. Trask. 1st edition. Princeton, N. J: Princeton University Press, 1971.” | 248 | 22.55 | 14.96 |
| “Jacobson, Jessica. “Religion and Ethnicity: Dual and Alternative Sources of Identity among Young British Pakistanis.” <i>Ethnic and Racial Studies</i> 20, no. 2 (April 1, 1997): 238–56. doi:10.1080/01419870.1997.9993960.” | 226 | 8.69 | 3.53 |

Earlier Period (1916 – 2013)

| Document | Total Citations | Annual Total Citations | Normalized Total Citations |
|--|-----------------|------------------------|----------------------------|
| “Dyson, Jane, Mark Cobb, and Dawn Forman. “The Meaning of Spirituality: A Literature Review.” <i>Journal of Advanced Nursing</i> 26, no. 6 (1997): 1183–88. doi:10.1046/j.1365-2648.1997.00446.x.” | 211 | 8.12 | 3.30 |

Recent Period (2014 – 2022)

| Document | Total Citations | Annual Total Citations | Normalized Total Citations |
|--|-----------------|------------------------|----------------------------|
| “MacDonald, Douglas A., Harris L. Friedman, Jacek Brewczynski, Daniel Holland, Kiran Kumar K. Salagame, K. Krishna Mohan, Zuzana Ondriasova Gubrij, and Hye Wook Cheong. “Spirituality as a Scientific Construct: Testing Its Universality across Cultures and Languages.” <i>PLOS ONE</i> 10, no. 3 (March 3, 2015): e0117701. doi:10.1371/journal.pone.0117701.” | 58 | 7.25 | 7.31 |
| “Silver, Christopher F., Thomas J. Coleman, Ralph W. Hood, and Jenny M. Holcombe. “The Six Types of Nonbelief: A Qualitative and Quantitative Study of Type and Narrative.” <i>Mental Health, Religion & Culture</i> 17, no. 10 (November 26, 2014): 990–1001. doi:10.1080/13674676.2014.987743.” | 55 | 6.11 | 6.57 |
| “Gebert, Diether, Sabine Boerner, Eric Kearney, James E King, Kai Zhang, and Lynda Jiwen Song. “Expressing Religious Identities in the Workplace: Analyzing a Neglected Diversity Dimension.” <i>Human Relations</i> 67, no. 5 (May 1, 2014): 543–63. doi:10.1177/0018726713496830.” | 49 | 5.44 | 5.86 |
| “Henley, Andrew. “Does Religion Influence Entrepreneurial Behaviour?” <i>International Small Business Journal</i> 35, no. 5 (August 1, 2017): 597–617. doi:10.1177/0266242616656748.” | 47 | 7.83 | 9.29 |
| “Kashif, Muhammad, Anna Zarkada, and Ramayah Thurasamy. “The Moderating Effect of Religiosity on Ethical Behavioural Intentions: An Application of the Extended Theory of Planned Behaviour to Pakistani Bank Employees.” <i>Personnel Review</i> 46, no. 2 (January 1, 2017): 429–48. doi:10.1108/PR-10-2015-0256.” | 44 | 7.33 | 8.69 |
| “Swinton, Marilyn, Mita Giacomini, Feli Toledo, Trudy Rose, Tracy Hand-Breckenridge, Anne Boyle, Anne Woods, et al. “Experiences and Expressions of Spirituality at the End of Life in the Intensive Care Unit.” <i>American Journal of Respiratory and Critical Care Medicine</i> 195, no. 2 (January 15, 2017): 198–204. doi:10.1164/rccm.201606-1102OC.” | 37 | 6.17 | 7.31 |
| “Johnson, Paul, and Robert Vanderbeck. <i>Law, Religion and Homosexuality</i> . London: Routledge, 2014. doi:10.4324/9780203427507.” | 36 | 4 | 4.3 |
| “Delehanty, Jack, Penny Edgell, and Evan Stewart. “Christian America? Secularized Evangelical Discourse and the Boundaries of National Belonging.” <i>Social Forces</i> 97, no. 3 (March 1, 2019): 1283–1306. doi:10.1093/sf/soy080.” | 33 | 8.25 | 12.29 |
| “Salas-Wright, Christopher P., Michael G. Vaughn, and Brandy R. Maynard. “Religiosity and Violence Among Adolescents in the United States: Findings from the National Survey on Drug Use and Health 2006–2010.” <i>Journal of Interpersonal Violence</i> 29, no. 7 (May 1, 2014): 1178–1200. doi:10.1177/0886260513506279.” | 33 | 3.67 | 3.94 |

| Recent Period (2014 – 2022) | | | |
|---|------------------------|-------------------------------|-----------------------------------|
| Document | Total Citations | Annual Total Citations | Normalized Total Citations |
| “Liu, Eleanor X., Erik W. Carter, Thomas L. Boehm, Naomi H. Annandale, and Courtney E. Taylor. “In Their Own Words: The Place of Faith in the Lives of Young People with Autism and Intellectual Disability.” <i>Intellectual and Developmental Disabilities</i> 52, no. 5 (October 1, 2014): 388–404. doi:10.1352/1934-9556-52.5.388.” | 32 | 3.56 | 3.82 |

Whether the documents received highest citations from documents indexed in Scopus (Table 9) also were also cited by documents under analysis could be seen in Table 10. Three most globally cited documents were also in the top ten documents in Local Citations.

<Table 10> Top 10 Documents in Local Citations

| Earlier Period (1916 – 2013) | | |
|--|------------------------|-----------------------------------|
| Document | Local Citations | Normalized Local Citations |
| “MacDonald, Douglas A. “Spirituality: Description, Measurement, and Relation to the Five Factor Model of Personality.” <i>Journal of Personality</i> 68, no. 1 (2000): 153–97. doi:10.1111/1467-6494.t01-1-00094. “ | 11 | 9.06 |
| “Zinnbauer, Brian J., Kenneth I. Pargament, and Allie B. Scott. “The Emerging Meanings of Religiousness and Spirituality: Problems and Prospects.” <i>Journal of Personality</i> 67, no. 6 (1999): 889–919. doi:10.1111/1467-6494.00077. “ | 4 | 9.60 |
| “Lips-Wiersma, Marjolein, and Colleen Mills. “Coming out of the Closet: Negotiating Spiritual Expression in the Workplace.” <i>Journal of Managerial Psychology</i> 17, no. 3 (January 1, 2002): 183–202. doi:10.1108/02683940210423097. “ | 3 | 5.54 |
| “Beery, Theresa A., Linda S. Baas, Christopher Fowler, and Gordon Allen. “Spirituality in Persons with Heart Failure.” <i>Journal of Holistic Nursing</i> 20, no. 1 (March 1, 2002): 5–25. doi:10.1177/089801010202000102. “ | 3 | 5.54 |
| “Gey, Steven G. “When Is Religious Speech Not ‘Free Speech’?” <i>University of Illinois Law Review</i> 2000, no. 2 (2000): 379–460. “ | 3 | 2.47 |
| “Pargament, Kenneth I., Harold G. Koenig, and Lisa M. Perez. “The Many Methods of Religious Coping: Development and Initial Validation of the RCOPE.” <i>Journal of Clinical Psychology</i> 56, no. 4 (2000): 519–43. doi:10.1002/ (SICI)1097-4679 (200004)56:4<519: AID-JCLP6>3.0.CO;2-1. “ | 3 | 2.47 |
| “Kelly, Eileen P. “Accommodating Religious Expression in the Workplace.” <i>Employee Responsibilities and Rights Journal</i> 20, no. 1 (March 1, 2008): 45–56. doi:10.1007/s10672-007-9059-6. “ | 2 | 25.33 |
| “King, James E., and Ian O. Williamson. “Workplace Religious Expression, Religiosity and Job Satisfaction: Clarifying a Relationship.” <i>Journal of Management, Spirituality & Religion</i> 2, no. 2 (January 1, 2005): 173–98. doi:10.1080/14766080509518579. “ | 2 | 12.00 |

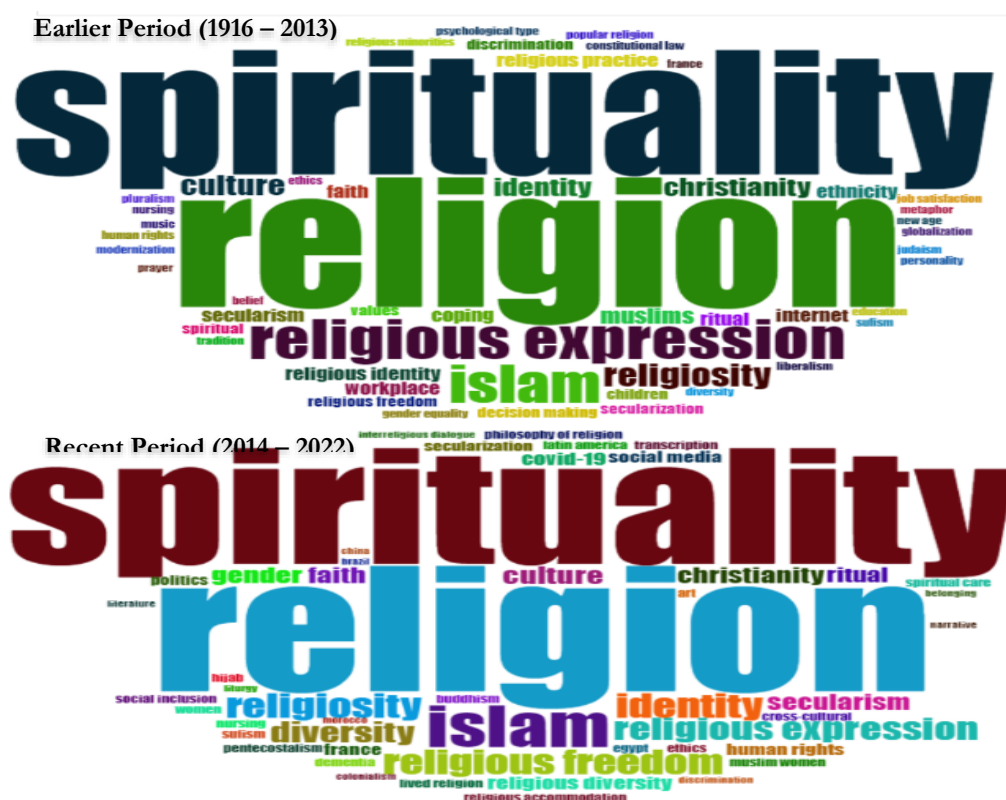
Earlier Period (1916 – 2013)

| Document | Local Citations | Normalized Local Citations |
|--|------------------------|-----------------------------------|
| “Hicks, Douglas A. “Spiritual and Religious Diversity in the Workplace: Implications for Leadership.” <i>The Leadership Quarterly</i> 13, no. 4 (August 1, 2002): 379–96. doi:10.1016/S1048-9843(02)00124-8. “ | 2 | 3.69 |
| “MacDonald, Douglas A., and Daniel Holland. “Spirituality and Boredom Proneness.” <i>Personality and Individual Differences</i> 32, no. 6 (April 19, 2002): 1113–19. doi:10.1016/S0191-8869(01)00114-3. “ | 2 | 3.69 |

| Document | Local Citations | Normalized Local Citations |
|--|------------------------|-----------------------------------|
| “Gebert, Diether, Sabine Boerner, Eric Kearney, James E King, Kai Zhang, and Lynda Jiwen Song. “Expressing Religious Identities in the Workplace: Analyzing a Neglected Diversity Dimension.” <i>Human Relations</i> 67, no. 5 (May 1, 2014): 543–63. doi: 10.1177/0018726713496830 .” | 9 | 52.62 |
| “ MacDonald, Douglas A. , Harris L. Friedman, Jacek Brewczynski, Daniel Holland, Kiran Kumar K. Salagame, K. Krishna Mohan, Zuzana Ondriasova Gubrij, and Hye Wook Cheong. “Spirituality as a Scientific Construct: Testing Its Universality across Cultures and Languages.” <i>PLOS ONE</i> 10, no. 3 (March 3, 2015): e0117701. doi: 10.1371/journal.pone.0117701 .” | 8 | 56.73 |
| “Hamblen, Andrew. “Managing Workplace Religious Expression within the Legal Constraints.” <i>Employee Relations</i> 38, no. 3 (January 1, 2016): 406–19. doi: 10.1108/ER-03-2015-0054 .” | 4 | 76 |
| “Héliot, YingFei, Ilka H. Gleibs, Adrian Coyle, Denise M. Rousseau, and Céline Rojon. “Religious Identity in the Workplace: A Systematic Review, Research Agenda, and Practical Implications.” <i>Human Resource Management</i> 59, no. 2 (2020): 153–73. doi: 10.1002/hrm.21983 .” | 3 | 52.8 |
| “Martínez-Ariño, Julia. “Conceptualising the Role of Cities in the Governance of Religious Diversity in Europe.” <i>Current Sociology</i> 66, no. 5 (September 1, 2018): 810–27. doi: 10.1177/0011392117745942 .” | 3 | 28.29 |
| “Hennekam, Sophie, Jonathan Peterson, Loubna Tahssain-Gay, and Jean-Pierre Dumazert. “Managing Religious Diversity in Secular Organizations in France.” <i>Employee Relations</i> 40, no. 5 (January 1, 2018): 746–61. doi: 10.1108/ER-06-2017-0142 .” | 2 | 18.86 |
| “Ben-Nun Bloom, Pazit, Gizem Arıkan, and Allon Vishkin. “Religion and Democratic Commitment: A Unifying Motivational Framework.” <i>Political Psychology</i> 42, no. S1 (2021): 75–108. doi: 10.1111/pops.12730 .” | 1 | 31 |
| “García-Yeste, Carme, Lena de Botton, Pilar Alvarez, and Roger Campdepadros. “Actions to Promote the Employment and Social Inclusion of Muslim Women Who Wear the Hijab in Catalonia (Spain).” <i>Sustainability</i> 13, no. 13 (January 2021): 6991. doi: 10.3390/su13136991 .” | 1 | 31 |

| Document | Local Citations | Normalized Local Citations |
|--|-----------------|----------------------------|
| “Cohu, Medhi, Christelle Maisonneuve, and Benoit Testé. “One Conception of Secularism for All? A Comparison of Conceptions of Laïcité among Nonbelievers, Catholics, and Muslims in France.” <i>Journal for the Scientific Study of Religion</i> 60, no. 1 (March 2021): 103–12. doi: 10.1111/jssr.12703 .” | 1 | 31 |
| “Abellanosa, Rhoderick John Suarez. “The Church as a Sacrament in a Time of Pandemic: The Philippine Experience.” <i>Studies in World Christianity</i> 26, no. 3 (November 2020): 261–80. doi: 10.3366/swc.2020.0309 .” | 1 | 17.6 |

One of the essential elements in the documents under analysis is the keywords. To describe the publication and citation patterns of studies on REs in terms of keywords, the authors’ keywords were visualized as WordCloud. The top 50 keywords provided by authors in the earlier and recent periods could be seen Figure 3. The similarity between the two WordCloud could be explained by the 20 similar keywords in the two periods (please see the Supplemental Materials for details).



<Fig. 3> WordCloud of the Top 50 Keywords by Authors

Discussions

With regard to the subject areas, unsurprisingly, since 1916 the majority of studies into REs have mostly been written in the areas of Arts and Humanities along with Social Science, respectively. Religious studies from which studies of REs are usually thought to have originated (Keenan & Arweck, 2017) belong to the subject category of Art and Humanities in

Scopus ([Elsevier, 2020](#)). Besides, in Scopus, Art and Humanities is classified as one of the major subject areas under the broad subject cluster of Social Sciences.

The two dominating subject areas could also be seen from the top 10 sources in Local Impacts. Most of them were explicitly entitled such religion-related terms as “International Journal of Children's Spirituality” and “Journal of Religion and Health” Religions” (Table 7). However, with the maximum number of documents across sources ($n = 1123$, $M = 1.37$ documents per source) was only 21, no sources could dominate the publication sphere. Therefore, studies of REs tend to cluster in the areas of Arts and Humanities along with Social Science and but were widely dispersed across sources in the category of Religious Studies.

Unexpectedly, from 1900 to 2022 no studies of REs could be found for 47 years. This could explain why the earlier period of studies into REs took almost one century. Nevertheless, after over six decades, the intellectual activity in the line of research into REs have been constant since 1979. In addition, the last two decades have seen a minimum of 20 and maximum of 98 documents, contributing to over 90% of the total publications.

To some extent, this is in line with the publication growth of religion or spirituality studies in its relationship with such other fields of study as psychology and culture. Within the enterprise of general religion publications, the publication share of scientific approaches to religion has increased from 20% in 1980 to 45% in 2018 ([Wildman, 2021](#)). The slow increase within previous eight decades could also be due scholars' different research foci ([Fortuna et al., 2020](#)).

Studies of REs also tend to cluster in USA as the world leader in scientific production and corresponding authors. Furthermore, more than half of the top 10 productive institutions were located in the United States of America. About 3,000 religious groups including Native American Religions ([Haynes, 2007](#)) and at least 16 religions including Unitarian/Universalist in the American religious landscape (Public Religion Research Institute, 2021) could make USA the home of productivity of RE scholarship.

Another possible explanation is that the pendulum from freedom of religion to freedom of expression has swung back and forth more dynamically and been more openly discussed in the United States of America ([Haiman, 2003](#)) than, for instance, Malaysia ([Sani, 2020](#)). Under such regimes, scholarships perhaps take a deeper interest in other more freely discussed issues.

Surprisingly, the People's Republic of China joined the ranks of the top 10 countries in scientific production and corresponding authors even though, at least during the Cultural Revolution from 1966 to 1976, the People's Republic of China completely discarded religion by making anti-religion policy ([Cao, 2018](#)). A reasonable explanation for its productivity in the line of RE research may be that the People's Republic of China has achieved “a quiet spiritual revolution” in “religious vitality” which directs Chinese scholars' attention to important roles of religions in the contemporary world (Yang, 2014, p. 546) as manifested through REs. According to Gao (2022), the current Chinese religious freedom is not in stark contrast to the Western one as it used to be.

As REs can be caught in the intra and inter-religious social interactions, the Chinese productivity in the publication of REs proves that scholars in the giant of global science ([Marginson, 2022](#)) nowadays adopt the scientific approach to religious studies, moving from heavenly philosophical and religious discourse to, as a well-known phrase goes, “the sorrow of this earthy life”. Within the next decades, as “a fertile field for productive empirical studies

and developing theories”, especially in the sociology of religion (Yang, 2014, p. 565), the People’s Republic of China is likely to become the giant of studies into REs. The giant will be born for the People’s Republic of China, Gao (2022) concludes, acknowledges the inseparability of religions and other social realms including the global scientific competitions.

Unfortunately, very few international collaborative efforts were made within the theme of REs (Table 4). The apparent lack of collaboration is not particularly surprising because REs might be a context-bound topic in which countries relatively differ from one another in inter- and intra-religious social interactions. Despite this, the inter- and multidisciplinary nature of REs could drive multi-country publications up.

“The sorrow of this earthy life” is apparent in the most frequent words of abstracts, titles, and keywords such as “human rights”, and “public schools”. “The sorrow of this earthy life” has attracted some scholars outside of the religion and spirituality such as Pargament K I who was affiliated with Department of Psychology (Pargament et al., 2000).

That “the sorrow of this earthy life” including REs caught attention of many scholars across fields of study could explain why no authors had total domination in the publication sphere of REs. That the top authors did not considered REs as their main academic interest is a possible explanation why their productivity was relatively limited and scattered across time.

Within the realm of citations, the United States of America dominated the citation sphere both in Total Citation and Average Document Citations. Ranked second in first country indicator, the United Kingdom had less than one fourth of citations received by United States of America. Even though a geographical dimension and/or number of publications do not necessarily mean number of citations, in this work apparently USA could achieve the domination through citations received by its authors such as “King JE” who got cited locally by authors whose works included the dataset and globally by those indexed in Scopus. Only a few non-American authors joining the ranks of top 10 authors in Local Citations such as “Martínez-Ariño J” (Table 8).

The most globally cited work presented a valid measure of religious coping as the integration of religious matters into counseling and support to those filled with “the sorrow of this earthy life”, i.e. “facing life-threatening crises” and “most stressful situations”(Pargament et al., 2000, p. 520). “The sorrow of this earthy life” has characterized most of the top 10 documents in global and local citations.

The number of citations received by a document has certainly too many things to describe. In the line of research into REs, the number of citations not only show the local and global connections between the top 10 documents and other documents in, respectively, the dataset and across Scopus, but also reveals their contextualized contents. “The sorrow of this earthy life” such as mental health (Pargament et al., 2000) could account for the number of citations.

Within this study, surprisingly, it is not scholars rooted in religious studies who were strong proponents of the integration of religious aspects into “the sorrow of this earthy life”. It was observed that most of the top 15 scholars in scientific study of religion were not from religion and theology fields but from clinical psychology, epidemiology, neurophysiology, mental health, and social work (Wildman, 2021). That “the sorrow of this earthy life” could establish the continuing relevance and true significance of REs was excellently argued, “When asked how they cope with their most stressful situations, many people make mention of

religion. Among some groups ... facing life-threatening crises, religion is cited more frequently than any other resource for coping” (Pargament et al., 2000, p. 520).

Limitations of Study

A number of weak points need to be considered. First, this bibliometric work deals with performance analysis only. To catch REs in its fullest form, REs must be mapped to the conceptual, intellectual, and social knowledge structures (Donthu et al., 2021). The knowledge mapping of REs is already underway by connecting the documents through bibliographic coupling, co-authorship, co-citation, and co-occurrence.

Second, the results from this bibliometric performance analysis should be treated with considerable caution given that the database used to mine the bibliometric data was Scopus only. This study could absolutely not include all of the literature on REs which might be not be covered by Scopus but could be found in other bibliographic databases ([Gusenbauer & Haddaway, 2020](#)).

It is indeed tempting to merge bibliographic data from some databases in order to draw a more detailed knowledge map. Merging bibliographic data from two or more databases, nevertheless, is not recommended even by many developers of bibliometric software. For instance, Aria and Cuccurullo (2017), the developers of bibliometric tool used in this study, emphasize that merging bibliographic data from two indexing services having a different approach to processing bibliographic data such as document metadata could distract the bibliometric analyses.

In terms of coverage and data completeness, the bibliographic data from Scopus only could represent the true dynamics of REs. Scopus has wider coverage than Web of Science, another selective bibliographic database, and applies more rigorous selection criteria for data inclusion than Google Scholars and Dimensions with their automatic data crawling (Martín-Martín et al., 2018).

Additional limitations to this study should also be noted. Some relevant documents were not analyzed because having the RE-related terms in the full texts only. The dataset did not have non-English documents. Moreover, the dataset might contain self-citations resulting in over estimated total citations. Finally, the findings and discussion were presented under a temporal consideration, namely the time of data retrieval. The exponential growth rate of academic publications (To & Yu, 2020) makes it hard to catch ever growing body of literature on REs.

All of the limitation might hinder establishing the patterns of publication and citation in global academic activity on REs. The choice of representative bibliographic database and the rigor of document inclusion process, however, could help the snapshot of REs as a line of research over time reveal possible academic lacunae and offer hindsight for future research into REs.

Conclusions

Even though REs have long received attention, only since the 2000s REs have been studied more intensively, particularly in USA. This study signals that the line of research into REs was highly fragmented with regard to countries, institutions, authors, and sources.

Whereas in terms of subject areas, the publication clustered around the category of religion, the citations did around Business, Management and Accounting along with Psychology.

The apparent lack of country collaboration can be attributed to the socio-spatial limitations of REs. Nevertheless, the relevance of “the sorrow of this earthy life” caught in the categories of Business, Management and Accounting along with Psychology which are more global in nature could drive a higher level of personal, institutional, and national collaborations. Not only could this study provide retrospective insights including the evolutionary nuances but also prospective ones for future studies.

Supplementary Materials

The supplementary materials are available online on the Open Science Framework at <https://doi.org/10.17605/OSF.IO/9WKP8>

Author Contributions

Conceptualization, A.S. and D.D.; methodology, and D.D.; data collection, A.S.; software operation, A.S.; validation, A.S. and D.D.; data refinement, A.S. and D.D.; formal analysis, A.S.; resources, A.S.; writing—original draft preparation, A.S. and D.D.; writing—review and editing, A.S. and D.D.; visualization, A.S.; supervision, A.S.; project administration, D.D.; funding acquisition, D.D. All sections have been written, reviewed and edited by all authors. All authors have read and agreed to the published version of the manuscript.

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Data Availability Statement

The data presented in this study are openly available in OSF at <https://doi.org/10.17605/OSF.IO/9WKP8>

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Conflicts of Interest

The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

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