

# Exploring the Directory of Open-Access Books with a Special Focus on Science & Technology Collection

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## Abstract

The Directory of Open-Access Books (DOAB) is a platform to discover open-access books. Peer-reviewed e-books published under open-access business model are being furnished here with links to the full text of the publications at the Open-Access Publishing in European Networks Library, publisher's website, or repositories. The study has explored the DOAB database to identify the open-access books in the field of Science & Technology. The data have been collected from DOAB (available at <http://www.doabooks.org>). In total of 2093 books available in the discipline of Science & Technology (S & T), the maximum number of books are on Science-General (628) followed by Health Science (420), Biology and Life Sciences (384), Technology and Engineering (244), and Earth and Environmental Sciences (183). Furthermore, English was found to be the predominant language with 1677 books, followed by Portuguese (153) and German (90). The publisher trend reveals that the most dominant open-access book publisher in the field of science & technology is Frontiers Media SA (876 books), followed by Springer (233), MDPIAG (103), ANU Press (94), and SciELO Books-Editora FIOCRUZ (88).

**Keywords:** Open-access, Directory of Open-Access Books (DOAB), Science & Technology, OAPEN

## Introduction

Earlier libraries were developed for the people to access the resources and read them in print format. But, with the advent of technology in the later 20<sup>th</sup> century, these print resources were transposed to electronic form. The technology helps people to access the documents without any barriers (price and permission barriers) around the

world. Nowadays, various platforms are being provided to access the e-books, some are commercial like ebrary, Questia, NetLibrary whereas others are free like Project Gutenberg, Bookboon, BookRise, Manybooks, Open Book Publishers, etc. Many queries about e-book usage have been raised regarding their price, accessibility, and copyright issues among the library professionals in the realm of their current penetration. The financial and permission barriers have created hurdles in their use. To overcome these issues, open-access movement was launched (Khanchandani & Kumar, 2017). In the beginning of 21<sup>st</sup> century, open-access movement emerged with the Budapest Open-access Initiative (Budapest open-access initiative, 2017). It defines open-access as, "Free availability on the public internet, permitting any user to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself." Peter Suber (2010) states that "open-access literature is digital, online, free of charge, and free of most copyright and licensing restrictions." Thus, open-access removes the financial, technical, and legal barriers and allows free access to the information and knowledge.

Open-access publishing is an online activity that emphasises on global dissemination of scholarly publications (United Nations Educational Scientific and Cultural Organization, n.d.). With the open-access publishing, many publishers came forward to publish their books in different open-access platforms. One such platform is the Open-access Publishing in European

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Networks (OAPEN). The OAPEN Foundation, based at the National Library in The Hague, is an international initiative devoted to open-access monograph publishing. OAPEN Foundation is a member of OASPA (the Open-access Scholarly Publishers Association). OAPEN and OASPA work in collaboration to create guidelines for OA book publishers (Directory of Open-access Books, 2017). According to Snijder (2015), books published for personal use and those available under open licenses from creative commons are present in OAPEN library. OAPEN launched a service for discovery of open-access books called DOAB. DOAB is providing a searchable index to monographs published under an open-access business model, with links to the full texts of the publications at the publisher's website or repository. Academic publishers are invited to provide metadata of their open-access books to DOAB. Metadata will be harvestable in order to maximize dissemination, visibility and impact. Aggregators can integrate the records in their commercial services and libraries can integrate the directory into their online catalogues, helping scholars, and students to discover the books. The directory is open to all publishers who publish academic, peer-reviewed books in open access and meet academic standards. The purpose of the directory is to increase visibility to open-access books (Suber, 2012).

## Problem

The present study is an endeavour to explore the corpus of open-access books in the field of Science & Technology (S & T) as indexed by DOAB.

## Review of Literature

In the present information society, e-resources are an accepted means of information sources (Haridasan & Khan, 2009). The e-resources are supposed to accomplish the scholastic needs far better than traditional print services. To fulfil those needs, students mostly prefer e-journals and e-books (Swain, 2010). Since, E-journal publishing has reached the heights, now e-book publishing and use too has entered the hot markets. Though the first efforts for e-book publishing started in 1970s with the project Gutenberg (founded in 1971) and the Oxford Text Archive (founded in 1976), since the last decades e-book publishing has made tremendous progress and has yet a

long way to go (Vassiliou & Rowley, 2008). The features of e-resources that favour their use like convenience of use, retrieval speed, added features such as searching, coping, pasting, downloading, sharing, bookmarking, etc., also are the prompting features for the use of e-books. Besides, e-books cater to the information needs much better than print books because students, nowadays, do not prefer to read the whole books but read bits of them which becomes much easier from electronic forms (Nicholas et al., 2008). Further, e-books are preferred for the obvious reason of release from financial burden, as e-book publishers do not incur printing or production costs (Nicholls, 2009).

Thus, the strong penetration of e-books among students has prompted librarians for bringing the libraries into the realm of e-books to improve the information accessibility (Cassidy, Martinez & Shen, 2012). But, to reduce the barriers to e-book adoption, according to Bennet & Landoni (2005), vendors and librarians need to work together on congenial business models. Besides, various non-profit and commercial initiatives have started operating which support open-access publishing and the use and discovery of open-access e-books is found to have a positive impact. Open-access initiatives have accelerated the growth of openly accessible content and increased the visibility of research and thereby increasing the impact (Khanchandani & Kumar, 2017). Open-access books can be available in different online knowledge banks like digital archives, digital libraries, digital repositories, databases, and directories (Bansal, 2017). According to Collins, Milloy & Stone (2015), OAPEN-NL (a partner project of OAPEN.UK) gauged the online usage of open-access books through book visits and page views in Google Books and found a spectacular increase in their discovery and online usage. Unglue.it, launched in 2012 with a focus on sustainable funding models for freely licensed e-books, has served more than half a million e-book downloads to the readers (Unglue.it, 2017). Knowledge Unlatched, a global library consortium, started a pilot collection books available freely globally and from their survey found that download figures for the pilot collection has increased from nearly 60,000, by the end of December, 2015 from 175 countries, to more than 82,143 downloads in December, 2016 from 184 countries (Knowledge Unlatched, 2017). Similarly, ManyBooks, a project established in 2004 with a vision to provide an enormous library of e-books for free and on discounted

rates has until date reached more than 198,605,900 book downloads (ManyBooks, 2018). Open Book Publishers, founded in 2008, a social enterprise committed to make high-quality research available has recorded more than 20,000 readers per month for the free online books worldwide, with 327,511 visits for the e-books in the year 2016 only (Open Book Publishers, 2016). DOAB, which is freely accessible to readers and enables them to freely read and share these books for non-commercial purposes, has been studied by Dhanavandan & Tamizhchelvan (2016) and proposed that this directory should be included in library catalogues to help researchers and students to find and use open-access books. Bansal (2017) in his research found that since the launch of DOAB in 2011, the collection of e-books and the number of publishers show a steady growth. This study reveals that only high-quality e-books are found in DOAB as only those books, which are peer-reviewed by independent and external experts before publication are included. In yet another similar study, Watkinson & Bullock (2017) besides suggesting library professionals for inclusion of DOAB, calls publishers and authors to share books in the DOAB as, according to them, this directory has more visibility for open-access books to the user communities. According to Khanchandani & Kumar (2017), DOAB gives access to total of 1052 e-books on S & T until May 15, 2016 with Maximum, i.e., 473 (44.66%) e-books on health sciences.

Thus, literature survey reveals high penetration of e-books among readers. Though open-access journal publication has reached the heights, open-access book publishing is also now being promoted at an increased pace and is being progressively embraced by the user community.

## Scope

The scope of the study is confined to open-access books indexed in DOAB in the field of S & T.

## Limitations

As we know the knowledge is not a static one but is dynamic, i.e., knowledge is growing day by day so as the number of open-access books is also increasing in DOAB. The study is, hence, limited up to October 12, 2017 in S & T only.

## Objectives

The objectives of the study are as follows:

- To identify the open-access books in the field of S & T.
- To find out the major open-access publishers in the S & T listed by DOAB.
- To know the year-wise growth of open-access books.
- To find out the linguistic distribution of open-access books.

## Methodology

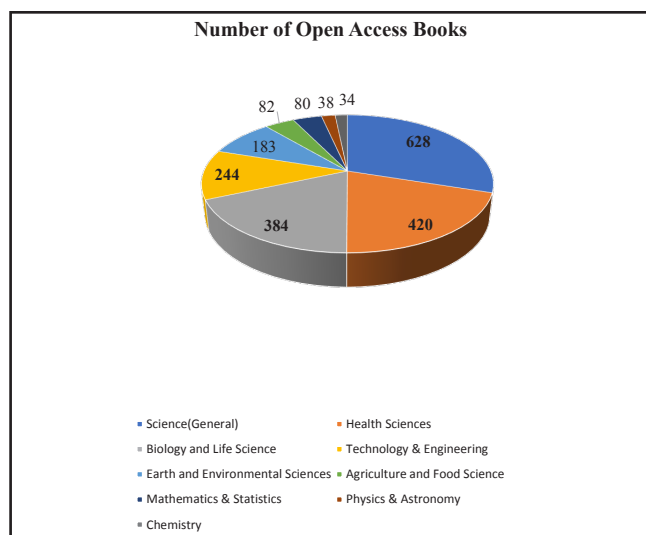
This study explored the DOAB to identify the open-access books in the field of S & T. The data collected in S & T from the directory (at <http://www.doabooks.org>) is only between October 01 and October 09, 2017. The directory possesses the nine major subjects in S & T and each subject has been further categorised into sub-subjects. The total of 2093 open-access books were indexed in the DOAB in S & T. All the books in S & T were individually identified and further analysed to gather the data on the basis of set parameters of the study (viz. subject, publisher, year, and language). With the help of MS Excel, duplicate title entries were expelled out and data were analysed to get a clear understanding of different open-access books indexed in DOAB in S & T. The data as such collected were analysed and represented with the help of lucid charts/figures for easy assimilation and comprehension.

## Results and Discussion

The results of the study are discussed below.

### Subject-wise Distribution

As the study is confined to the discipline of S & T, a total of 2093 open-access books in S & T are listed in DOAB. The data reveal that some books are listed in pure sciences and the majority of books are listed in the field of applied sciences. The subject-wise distribution graph shows that out of 2093 books, 628 (30%) books are listed in Science (General) followed by Health Sciences (420; 20%), Biology and Life Sciences (384; 18%), Technology and Engineering (244; 12%), Earth and Environmental Sciences (183; 9%). Graph 1 offers a bird's eye view.

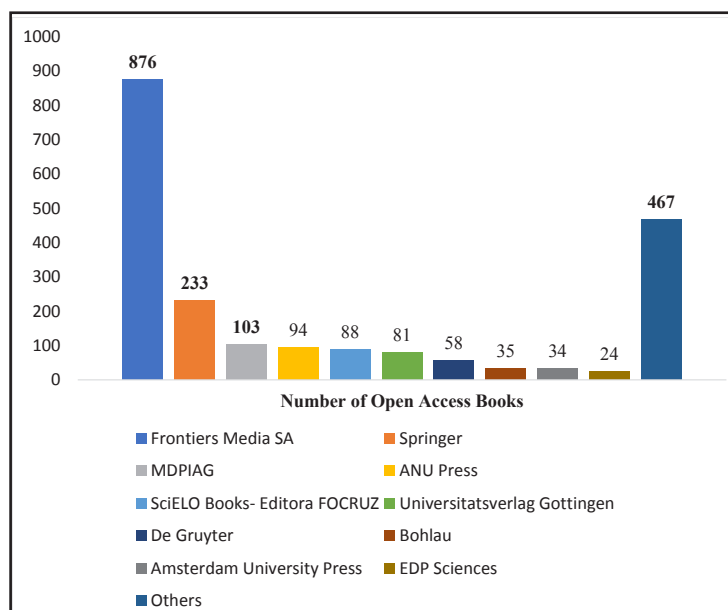


**Graph 1: Subject-wise Distribution of Books in Directory of Open-access Books (DOAB)**

### Publisher-wise Distribution

In the field of S & T, a total of 98 publishers contribute open-access books. Frontiers Media SA (876) is the top publisher in S & T followed by Springer (233), MDPIAG (103), ANU Press (94), ANU Press (94), SciELO Books-Editora FIOCRUZ (88). Out of 98 publishers, 88 have a single-digit contribution as such categorised by the study under the heading ‘Others’ (467). Graph 2 gives a lucid view.

It can be safely deduced from the study that ‘Frontiers Media SA’ is the major publisher publishing number of open-access books in the field of S & T. Further, the e-books published by Frontiers Media SA is in English which is the most dominating language among scholars in S & T.

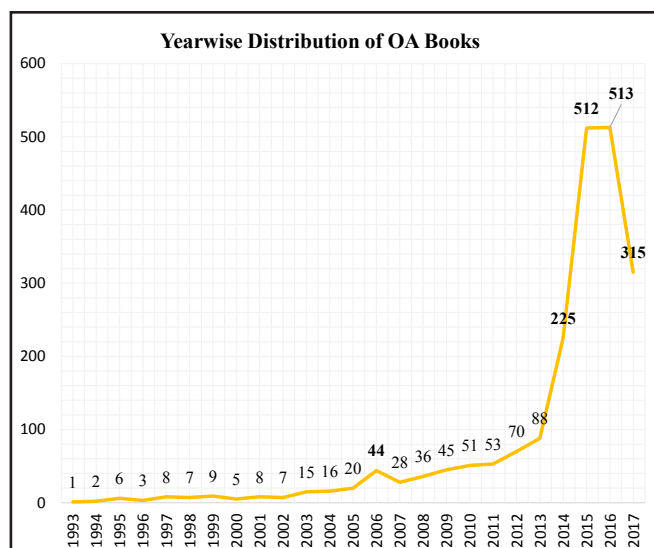


**Graph 2: Publisher-wise Distribution of Books in Directory of Open-access Books (DOAB)**

### Year-wise Distribution

The study made a serious effort to understand the year-wise growth of open-access books. Out of 2093 books, the publication year of six books could not be ascertained. A huge chunk of books (513) were alone indexed in the year 2016 by DOAB. So far in the year 2017, 315 books have been indexed and the number may rise until the end of the year, as the data are up to October 12, 2017. Graph 3 offers a detailed overview.

It has been depicted from the data that publication of open-access books indexed by DOAB has shown a snail’s growth during 1993–2006, but books published since 2007 that are indexed by the directory, have shown considerable growth. It has increased from less than 100 a year to more than 500 in years 2015 & 2016, thus showing an increasing trend.

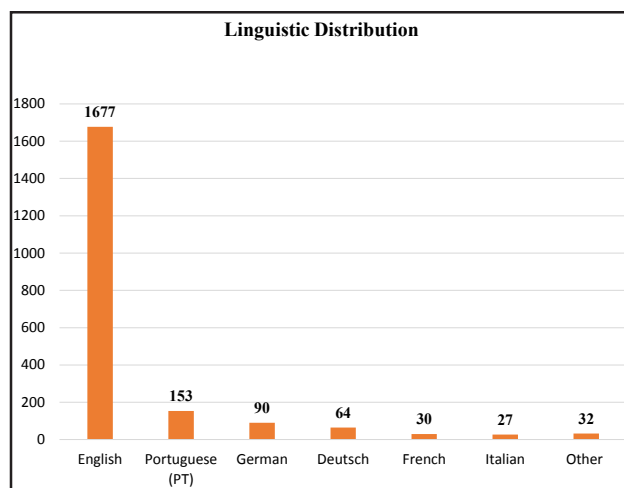


**Graph 3: Year-wise Distribution of Books in Directory of Open-access Books (DOAB)**

## Linguistic Distribution

Among 2093 books indexed in DOAB, the language of 20 books is not defined. Further, it has been seen that maximum books in DOAB in the field of S & T are published in English (1677) alone followed by Portuguese (153), German (90), Dutch (64), French (30), Italian (27), and the rest of the books are published in languages with least number that are listed in the category of others (32). Graph 4 shows a lucid view.

It has been deduced from the study that majority of open-access books in S & T are published in English, because it is the most popular language for scholarly communication.



**Graph 4: Linguistic Distribution of Books in Directory of Open-access Books (DOAB)**

## Conclusion

It has been concluded from the study that with the invention of information and communication technology, the open-access has gained movement. The publishers are increasingly embracing the online open-access avenues. The open-access provides free access to many resources like journals, thesis and dissertations, conference proceedings, books, book-chapters, etc. The open-access initiative not only accelerated the growth of journals and repositories, but also accelerated the growth of open-access books. Open-access book publishing is also gaining momentum. There are approximately more than 11,000 books in DOAB in the different disciplines and the number of open-access books is increasing day by day. The DOAB increases the visibility for open-access books and is a platform for the end users. The academic librarians have an important role to complete promotion and publicity of the benefits of open-access. The maximum of libraries and publishers are contributing towards open-access products like DOAJ and Open DOAR. Similarly, the academic publishers are taking the initiative to share the books through DOAB (Dhanavandan, 2016). The library professionals should integrate the DOAB website into their library's web gateways so to benefit the academicians in accessing the open-access books. Open-access movement will be successful if institutions, organisations, and individuals keep on contributing in the open-access mode.

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