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# CSR REPORTING AS AN OBJECT OF BIBLIOMETRIC ANALYSIS OF SCIENTIFIC PUBLICATIONS

# RAPORTOWANIE CSR JAKO OBIEKT ANALIZY BIBLIOMETRYCZNEJ PUBLIKACJI NAUKOWYCH

**Summary:** The aim of this article is to present the results of bibliometric analysis of the scientific studies on the issue of corporate social responsibility (CSR) reporting. The analysis allowed us to identify the main territories in the context of the above issues. For the purposes of the analysis were used bibliometric analysis of the data available in the Web of Science database, the analysis of trends in terms of number of publications, the method of co--occurrence of words and a cluster analysis method and also mind mapping. In the analysis was used software VOSviewer. The analysis led to extending the area of research relating to the issue of corporate social responsibility reporting to the following sub-areas: corporate social responsibility, disclosure of non-financial information, integrated reporting, the Global Reporting Initiative (GRI) standards.

**Keywords:** Corporate Social Responsibility (CSR), integrated reporting, Global Reporting Initiative (GRI), bibliometric analysis.

**Streszczenie:** Celem artykułu jest zaprezentowanie wyników analizy bibliometrycznej badań naukowych dotyczących problematyki raportowania społecznej odpowiedzialności przedsiębiorstw (CSR). Przeprowadzona analiza pozwoliła na zidentyfikowanie głównych obszarów w kontekście powyższej problematyki. Na potrzeby analizy bibliometrycznej wykorzystano analizę danych dostępnych w bazie Web of Science, analizę trendów w zakresie liczby publikacji, metodę współwystępowania słów oraz grupowania (analizę klastrów), metodę mapowania myśli. W analizie wykorzystano oprogramowanie VOSviewer. Analiza pozwoliła na wyłonienie następujących podobszarów badawczych odnoszących się do problematyki raportowania społecznej odpowiedzialności przedsiębiorstwa: społeczna odpowiedzialność przedsiębiorstwa, ujawnienia informacji niefinansowych, raportowanie zintegrowane, standardy raportowania według Global Reporting Initiative (GRI).

**Słowa kluczowe:** społeczna odpowiedzialność przedsiębiorstw (CSR), raportowanie zintegrowane, Global Reporting Initiative (GRI), analiza bibliometryczna.

# 1. Introduction

The research literature is the basis of reliable and robust scientific studies. It provides knowledge about previously realized research and may become the starting point for the planned research projects. Bibliometric is a tool which helps us set out the basic steps in the process of acquiring knowledge in this specific field of science.

The aim of this article is to present the results of bibliometric analysis of the scientific research on the issue of CSR (Corporate Social Responsibility) reporting. The analysis allowed us to identify the main activities in the context of the above topics. For the purposes of the bibliometric analysis the following were used: data available in the Web of Science database; the review of trends in terms of number of publications; the method of co-occurrence of words and clustering method (clusters analyses) by thoughts mapping practice. It can be assumed that the method of text mining will play an increasingly important role for the processing, not only of scientific texts, but also business. VOSviewer software, which was used for the purposes of this publication, may become one of the tools used by researchers and practitioners from various fields, possibly to inspire them to look for other tools using this method.

# 2. Methodology

For the purposes of assessment of studies in the area of corporate social responsibility reporting bibliometric analysis was used. There are a number of definitions of the term bibliometric. This notion was first used by Pritchard in 1969 who defined bibliometric as "the application of mathematical and statistical methods to examine the books and other means of communication" ([Skalska-Zlat 1988, p. 259], after: [Drabek 2001]). In Poland the term "bibliometric appeared" in 1979 in *Słownik terminologiczny informacji naukowej* as "the study of quantitative status and development trends of the literature statistical method based on bibliographic descriptions or statistics publications" ([*Słownik terminologiczny…* 1979], after: [Drabek 2001]).

Bibliometric methods are used for the analysis of literature and assessment of the state of science. According to Nowak bibliometric studies are used in the description and explanation of the phenomena occurring in science, by analysing the stream of information generated by it, defining performance indicators of scientific research and assessment of researchers and scientific research units, and improving information systems, mainly academic libraries ([Nowak 2006], after: [Grygiel et al. 2009, p. 66]).

The study used a Web of Science (WoS) database [webofknowledge.com]. When assessing academic journals, Impact factor (IF) is used, this method has been used for several years now. The impact factor is calculated on the base of citations existing

in the WoS database. The platform includes the Web of Science database of Thomson Reuters, including databases called abstract-bibliometric, i.e., citations indexes and derivatives of bibliometric databases. Citations indexes contain abstracts, basic bibliographic information and information about citations from journals that are on the Master Journal List. National license databases, Thomson Reuters, a Web of Science suite, which includes: Science Citation Index Expanded (SCIE), Social Science Citation Index (SSCI), Arts & Humanities Citation Index (AHCI), Conference Proceedings Citation Index – Science, Journal Citation Reports (JCR).

The first problem associated with the use of the Web of Science database is to determine the text search criterions which meet the specific requirements. This study is focused on the results of research on the texts published between 1995–2017.[1]

Studies were divided into the following steps:
1. A search of records in the Web of Science database based on defined criterions.
2. Export bibliographical descriptions.
3. Develop map of links and analysis of clusters.
4. Analysis of the results.

The search of records in the Web of Science database included key words (such as: "corporate social responsibility report*", "integrated report*", "sustainability report*", "CSR report*" in the Topic of the article) and the period of publication (from 1995 until 2017). Taking into account the above criteria, in the WoS base, was identified 1238 publications that meet set up criterions.

In a further step exported figures including records, i.e., Author, Title, Source, Abstract text file. Disposable export data from the WoS database it is possible for 500 bibliographic records. Given that the database discovered 1238 queries, this step is repeated three times, generating three text files.

Maps of links were created using software VOSviewer version 1.6.5,[2] which is associated with importing all three text files stored records from the WoS database. The process of generating the maps take into account the following in the correct order:
•  extraction of concepts, indicating the concepts, the repeatability of bibliographic descriptions is at least 10; for the case identified 22 403 concepts, concepts of which 652 occurred at least 10 times; VOSviewer software uses to this the Binary Counting method;

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- refine your keyword analysis, the repeatability of bibliographic descriptions is at least 20; thus limited set of terms to 341;
- 341 for a set of words to calculate the coefficient of appropriateness (relevant), from which will eventually emerge 205 terms, representing 60% of the most appropriate words;
- elimination of a set of concepts of technical terms, unrelated to the merits of the analysed research area, for example author, conclusion, findings, education, university, academic, criterium, definition, experience, example, discussion, sample, goal, review, case study, which resulted in a reduction of the analysed words to 99;
- develop a map of links, the intensity of the relationship between words and map clusters of research areas.

    Analysis of the results was accomplished based on the resulting map.

    In the steps presented above, methods of bibliometric analysis used co-word analysis, mind mapping and cluster analysis. Gradually introducing each fundamental part of the study trends, the analysis shows changes in the number of publications on the examined phenomenon within a specific period.
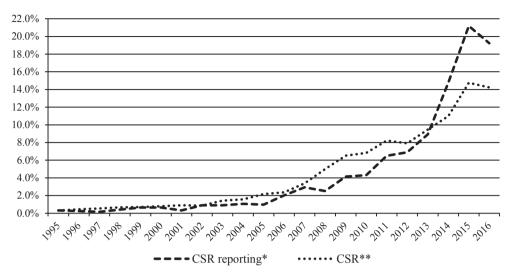
## 3. The research results

By searching the Web of Science database using the terms "CSR", "corporate social responsibility" or "corporate social responsibilities" included in titles, summaries and keywords were identified 13 234 publications (in the period from 1996 to the date of analysis, i.e. till 2.02.2017), and when the phrases "corporate social responsibility report*", "integrated report*", "sustainability report*" or "CSR report*" were used, there were 1238 of the publications. This data indicates that the issue of reporting of non-financial information is an important area research within the framework of corporate social responsibility.

   Looking at the changes in the number of publications over this period, it can be noted that there is an increasing trend of this number which indicates the growth of interest in the discussed issues. Figure 1 shows the ratio of the number of publications related to CSR in a given year to the total number of publications in the Web of Science database in the years 1995–2016.[3]

   Nearly 21.1% of the number of publications in this period which focused on reporting issues of social responsibility, were published in 2015, and more than 19.1% in 2016. Journal of Cleaner Production is a leader in the field of publications in this matter. Next in order is the Journal of Business Ethics. Table 1 shows a list of scientific sources representing 24.96% of all publications retrieved by a specific criterion.

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[3] The figure shows the data for the full years.

     * On the basis of the search by the words: "corporate social responsibility report*", "integrated report*", "sustainability report*" or "CSR report*"" (total number of articles – 1 232); ** on the basis of the search by the words: "CSR", "corporate social responsibility" or "corporate social responsibilities" (total number of articles – 13 193).

**Fig. 1.** The ratio of the number of publications related to CSR in a given year to the total number of publications in this field in the Web of Science database in the period 1995–2016 (the date of the search: 2.02.2017)

Source: own study.

**Table 1.** List of scientific sources with the largest number of publications on corporate social responsibility reporting in the Web of Science database in the years 1995 to 2017 (the date of the search 2.02.2017)

| Source titles | Record count | % of 1238 |
|---|---|---|
| Journal of Cleaner Production | 90 | 7.27 |
| Journal of Business Ethics | 49 | 3.96 |
| Accounting, Auditing and Accountability Journal | 29 | 2.34 |
| Corporate Social Responsibility and Environmental Management | 29 | 2.34 |
| Business Strategy and the Environment | 27 | 2.18 |
| Procedia – Social and Behavioral Sciences | 26 | 2.10 |
| Sustainability Accounting, Management and Policy Journal | 18 | 1.45 |
| Procedia Economics and Finance | 16 | 1.29 |
| Sustainability | 13 | 1.05 |
| Proceedings of the International Conference Accounting and Management Information System | 12 | 0.97 |

Source: [wcs.webofknowledge.com/RA/analyze/do].

Analysis of the publications placed in a geographical system showed that the authors writing in a report of corporate social responsibility come mainly from the United States, Australia and Great Britain. Table 2 shows the spatial distribution of the authors of the most common publishing WoS database. Summary of concerns 75.69% of publications generated by a specific criterion.

**Table 2.** The spatial distribution of the authors (in the set of countries) frequently issue in the Web of Science database in the years 1995 to 2017 (the date of the search 02.02.2017)

| Coutries/territories | Record count | % of 1238 |
|---|---|---|
| USA | 187 | 15.11 |
| Australia | 132 | 10.66 |
| England | 116 | 9.37 |
| Spain | 93 | 7.51 |
| China | 90 | 7.27 |
| Germany | 83 | 6.70 |
| Italy | 82 | 6.62 |
| Canada | 55 | 4.44 |
| Netherlands | 53 | 4.28 |
| Romania | 46 | 3.72 |

Source: [wcs.webofknowledge.com/RA/analyze/do].

In the later stage the study presents a map of the intensity of the relations between words (Fig. 2) and a map of clusters of research fields (Fig. 3).

An analysis of co-occurrence of words and an attempt to identify clusters allows for the selection of the following sub-areas of research relating to the issue of corporate social responsibility reporting: corporate social responsibility, disclosure of non-financial information, integrated reporting, the Global Reporting Initiative (GRI) standards.

The first sub-area is obvious and does not require any detailed explanation for the links between CSR issues and reporting, although it is worth at this point, paying attention, in this context, to the emerging concept of human rights. Moreover, there's no doubt that the issue of linking CSR to the theory of stakeholders, but also the word "shareholder" appeared on the maps. Explanation for this is often associated with a parallel discussion of these two theories. The issue of corporate responsibility, has for a long time, been related to the discussion under two concepts: shareholders theory and stakeholders theory. Friedman [1999, p. 260]talks about increasing the profits, Sternberg [1998] points to "maximize long-term value to the owner". Proponents of the concept of responsibility towards the stakeholders – Evan and Freeman – remain of the opinion that the company is to be managed not only in the interests of the owners, but it should be "managed for the benefit of external stakeholders: customers, suppliers, owners, employees and local communities" [Evan, Freeman 1999, p. 275]. Managers should equally consider the interests of the
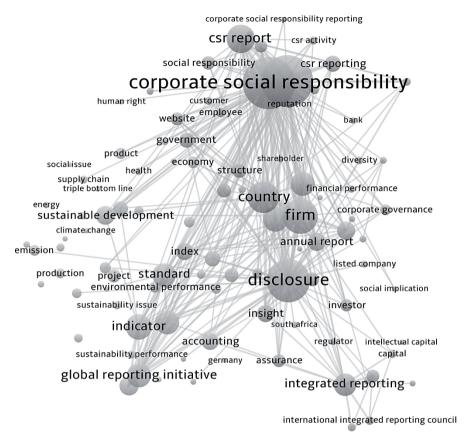
**Fig. 2.** A map of the intensity of the relations between words

Source: own study.

owners and other stakeholders and in a situation where there is a conflict of interests, make such decisions to ensure an optimal balance between those interests. In this way, business owners do not take precedence and it happens that they should be devoted to the interests of other stakeholders [Goodpaster 1992, p. 16]. The company management is not just for the benefit of all stakeholders but should be seen in a wider perspective showing the moral character, i.e., regulates the scope of moral responsibility of the company. Substantiation of this norm formulate Evan and Freeman, in relation to Kant's ethics and as the postulate in order not to see others as just a means to achieve some profits. Other proponents of the normative concept of stakeholders refer to human rights, the concept of sustainable development and the common good [Garriga, Melé 2004, p. 61, 62].

The second sub-area of the research applies to disclosure of non-financial information. Manifestations of these disclosures are annual reports of companies
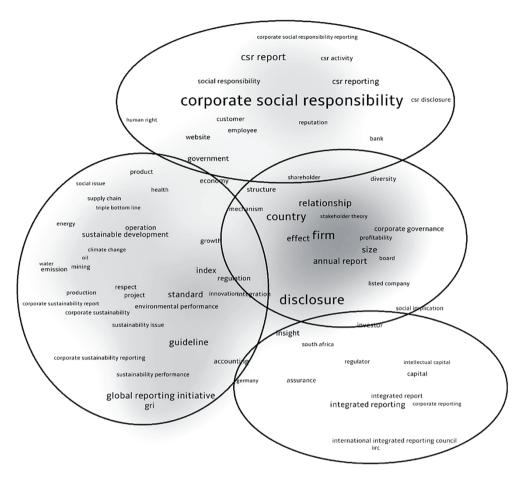
**Fig. 3.** A map of the intensity of clusters

Source: own study.

published, more often now, that include information that is not just financial. This may indicate a growing demand of stakeholders for that information. In the European Union the increase of this interest must undoubtedly be combined with the obligation, as regards disclosure of non-financial and diversity information, by certain large undertakings and groups [Directive 2014/95/EU]. Regarding the form of reporting, the company can choose one of two options for publishing non-financial data: the report on the activities of the company as a separate part (statement on non-financial information), or in separate reports, e.g.: social, CSR, sustainable development, integrated, impact, etc. Another of the identified areas indicates a reporting format which is most commonly discussed in academic papers.

The third sub-area concerns the integrated reporting. Undoubtedly, we are witnessing the evolution of the reporting enterprise as a key element of communication

within its surroundings. We are seeing the development of reporting from the financial statements model through the financial reports and subsequent comments to the social reporting and finally to integrated reporting combining information financial and non-financial. As the result of the presented map, for the intensity of the clusters, is the concept that integrated reporting related to the reporting of capital but in a specific way to the intellectual capital.

The last of the identified clusters of research focuses on the Global Reporting Initiative (GRI) standards. The GRI Standards are the first global standards for sustainability reporting. In reference to mentioned Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014, a company may establish its own rules of reporting or use optional rules (national, EU or international). Entities are required to indicate all of the principles or standards/guidelines they have benefited from by making a statement or separate report on non-financial information. The isolated sub-research confirms the popularity of the standards prepared by the GRI.

## 4. Conclusions

The visual objects presented in article are helpful to assess the results of the analysis. The analysis can help to clarify the issues surrounding CSR reporting and identify relevant areas of interest for authors of publications in the context of the subject matter. With this identification, it is possible to engage in discussions on the current problems of CSR reporting and further discussion of solutions for the development of non-financial information reporting, which has become increasingly important.

The bibliometric analysis undoubtedly does not deplete the issue of identification of research fields in the domain of Corporate Social Responsibility reporting. The analysis is quantitative in nature, and its restriction is associated with a selected bibliography, Web of Science database, without monographs and reports. Another barrier related to the underlying analysis of texts is that they are only accessible in English. In a following step, efforts could be taken relating to the analysis and evaluation of qualitative and substantive contents of retrieved articles.

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