

# Citation Type Analysis for *Zagadnienia Informacji Naukowej – Studia Informacyjne* (2016–2017)<sup>1</sup>

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## Abstract

**Purpose/Thesis:** The article studies the types of citations in research articles published in the journal *Zagadnienia Informacji Naukowej – Studia informacyjne* (ZIN).

**Approach/Methods:** The study applied a method of analysis of citations, supplemented by a typology of citations established by B. Peritz. The research set consisted of 34 research articles published in ZIN in 2016–2017. The study required a manual identification and categorization of the citations which featured in the set, and correlating their types with the location in the article and the type of the article.

**Results and conclusions:** The results of the study showed significant variations in the distribution of the citations in the article, depending on the type of the article. A major part of the identified citations featured in the state of the art, and in general discussions. The authors studied often referred to other works to establish a general critical consensus regarding the research problems they analysed, to support their own hypotheses, or to suggest directions for further research. More than a half of the articles studied made no citations of methodological character.

**Originality/Value:** The article analyses the functions of the citations in the rhetoric structure of a research article concerned with information science, and offers a methodological critique of the research processes and tools.

## Keywords

Citation analysis. Bibliometrics. Citation types. IMRaD. *Zagadnienia Informacji Naukowej*.

*Received: 16 November 2019. Reviewed: 26 November 2019. Accepted: 16 December 2019.*

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## 1. Introduction

Citations in scholarly publications are an exponent of intertextual relations between the citing and cited texts. The basic research method employed in the analysis of such relations is citation analysis, which is defined as a bibliometric research method, “thanks to which, one studies various aspects of the information flow between citing and cited texts” (Żbikowska & Skalska-Zlat, 2017, 152).

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<sup>1</sup> The article uses the research data collected by Aleksandra Wolińska for her Master’s dissertation, *Citation Analysis in the Journal Zagadnienia Informacji Naukowej. Studia informacyjne, 2016–2017* (*Analiza cytowań w czasopiśmie Zagadnienia Informacji Naukowej z lat 2016–2017*), completed in the academic year 2018/2019 under the supervision of prof. dr. hab. Jadwiga Woźniak-Kasperek and dr. Marcin Roszkowski.

The premise of citation analysis is a particular epistemological attitude, which assumes that the number of citations of a given text reflects its influence on a given discipline, or a domain, and thus corresponds to its quality; as such, it allows quantification of many aspects of cognitive and social structure of science (Wade, 1975, 429). This method assumes a possibility of an objective evaluation of a publication's impact on the scientific discourse in a given discipline, based on the assumption that quantity corresponds to quality. Aside from recording the very fact a citation occurred, citation analysis accounts for further variables, such as age, carrier, and type of the cited work, the number and character of which determine the value of this kind of bibliometric research.

If the functionality of citations is considered, they might be seen as tools used in an exploration of information and evaluation of research activity (Di Iorio et al., 2013a). The first view assumes that an analysis of the network emergent in the bibliographic connections between a given article and the works cited is a source of information complementary to databases. This understanding of bibliographic citations imagines the reader following up on the citations with an aim of finding publications with an similar thematic scope. This technique fits within the exploratory model of information seeking termed "berrypicking", proposed by M. Bates (1989). The second view is based on a quantitative attitude, characteristic for bibliometrics. In this case, the citation number of a given publication, the citation number of all works of a given author, or the sum of citation numbers of all articles published in a given journal, is an exponent of their quality, which is expressed with specific bibliometric indicators (e.g. Hirsch index for the authors, and impact factor for the journals). This view also allows a qualitative approach, i.e., basing on the works cited in a given text, one may attempt to establish their significance for a given research issue in relation to the previous codified knowledge in the given research area.

However, the method of citation analysis has its limitations, which come from its premises as an empirical approach based on positivist epistemology. Because the data analysed in such a study may not be complete, or representative, generalizing conclusions should be accepted only with care (Osareh, 1996, 220; Smith, 1981, 93). The crucial issue here is a functional and rhetorical understanding the nature of a bibliographic citation. Linda C. Smith (1981, 87–89) identified five assumptions frequently underlying citation analysis, and which may define its limitations.

**(1) Citation of a document implies use of that document by the citing author.**

According to Smith, this premise comprises two parts: (a) the author cited all, or the most important texts, which they used in the preparation for the writing of their article, and (b), all positions in the attached bibliography were used in the text. Even if the author made no errors in constructing of the bibliographic apparatus in the form of a list of cited texts, it is impossible to determine the influence of a cited work on the author's research without analysing the content of both the citing text, and the cited works.

**(2) Citation of a document (author, journal, etc.) reflects the merit (quality, significance, impact) of that document (author, journal, etc.).**

The premise is based on the previously mentioned assumption that a number citation of a given text corresponds to its status and significance in the scientific discourse. Without an additional insight into the reasons behind the choice to cite a given text, citation number should be understood rather as an orientation point.

**(3) Citations are made to the best possible works.**

According to Smith, if we assume that authors cite the most significant works from a given discipline in their own work, then we should also consider the availability of these works to the author, and its impact on the author's choice of source materials. Furthermore, Smith argues that the availability of source material is as important a factor in the citing author's decision process as their quality. In the time of open sciences and the transfer of information flow online, it seems that physical access to secondary sources should not determine the choice of source materials to such an extent.

**(4) A cited document is related in content to the citing document; if two documents are bibliographically coupled, they are related in content; and if two documents are co-cited, they are related in content.**

Again, there arises a question of reasons for citing a given text and the function of bibliographic citation. Smith proposes various interpretations of thematic overlap based on the relation of citation and co-citation. She refers to the results of research conducted by J. Barlup (1969), who questions scholars about the thematic overlap between their works and the texts alongside which they were cited. Barlup's results indicated that in 72% cases, the authors said that there was a strong thematic overlap, and in 5%, that there was none. Without a qualitative citation analysis, the citing relation might be interpreted only in terms of probability of a thematic overlap between the citing and cited texts, and between the texts cited simultaneously.

**(5) All citations are equal.**

According to Smith, citation analysis accepts the assumption that all citations, aside from self-citations, have the same status within the citing text. However, such an approach to analysis of intellectual influence of the cited works on the citing text is insufficient and too general. We should consider the function the cited texts fulfil in the rhetoric structure of the citing text. Accepting a structure based on the IMRaD model (Introduction, Methods, Results and Discussion), we might pose questions regarding the rhetorical function of citations in relation to these sections. Smith also refers to the construction of the bibliographic citation (a reference to a whole publication, a part of it, or a verbal citation) and the frequency with which a given work is cited within one text, thus suggesting the possibilities for a more concrete understanding of the citations' significance.

The five issues discussed by Smith constitute five research problems related to citation analysis as a research method, which derive from the necessity of qualitative variables to citation analysis. This means that we should ask questions regarding types of citations within a research publication, and the function they fulfil in its rhetoric and discursive construction.

**2. Typologies of bibliographic citations**

The researchers suggested the limitations of citation analysis deriving from its lack of insight into the nature of citing as early as in the 1960s, i.e., since the beginnings of the development of bibliometrics. H. White (2004) argues that the paper *Can Citation Indexing*

*Be Automated* by E. Garfield (1965) constituted first attempt to establish a typology of citations for the purpose of a qualitative analysis. Garfield's typology corresponds to the motivations which might dictate the authors' construction of citations. It was based on the analysis of linguistic means of expressing the context in which the citation occurred. Garfield did not characterize a research sample; he only suggested that he based his research on the publications in the Science Citation Index, i.e., on the works from the exact sciences. Garfield's scheme accounts for 15 types of citations, which feature valorizing attitudes, and pragmatism approaches, instrumental to the use of existing scholarship. Although Garfield's typology was the first attempt to qualitatively systematize bibliographic citations, White (2004, 107) argues that it has never been applied to empirical research.

In 1975, M. J. Moravcsik and P. Murugesan (1975) proposed a multi-dimensional categorization of bibliographic citations for the purpose of citation analysis of the articles from the journal *Physical Review*. Their citation typology was constructed before the empirical research itself. The conceptual core of their typology was formed by four questions posed in citation analysis, which indicated four interpretative dimensions (Moravcsik & Murugesan, 1975, 88; Swales, 1986, 41):

- (1) Is the citation conceptual or operational? Does the citing work refer to another in connection with a concept or theory, or is the citation made in connection with a technique or a method?
- (2) Is the citation organic or perfunctory? In other words, is the referring work built on the foundations provided by the citation, or is it an alternative to it?
- (3) Is the citation evolutionary or juxtapositional? Is the cited work needed for the understanding of the citing work or is it mainly an acknowledgement that some other work in the same general area has been performed?
- (4) Is the citation confirmative or negational? Is there any dispute about the correctness of the findings proposed in the cited work?

In 1977, Ina Spiegel-Rösing (1977) published the results of research which employed citation analysis to study 66 texts published in the journal *Science Studies* in the years 1971–1974. The thematic scope of the journal fit within social sciences, and encompassed the issues of science studies, the organisation and infrastructure of science, as well as science communication. Basing on her empirical research, the author identified 13 types of citations which occurred in the data sample. Spiegel-Rösing's scheme included types of citations which indicated the function which the cited work fulfils in the discursive structure of the article, as well as the author's evaluation of the cited text.

B.C. Pertiz (1983) established a typology of bibliographic citations with an intention to make it adequate to the specifics of the scientific discourse in the disciplines of social sciences, and to allow an easy application to empirical research. The starting point of her work was a categorization of bibliographic citations proposed by T. Hodges (1972). His scheme consisted of eight citation types, which mostly described the functions which the cited work fulfilled in the citing text; their order corresponded to the logic of an argument presented in a scientific publication. The main limitation of Pertiz's typology was the emphasis on the specifics of bibliographic citations in the publications recording the results of empirical research.

Nanba, Kando and Okamura (2000) established a citation typology to meet the needs of an information system for the automatized classification of scientific publications. They

established their own typology, which simplified M. Weinstock's scheme (1971), based on the linguistic analysis of the fragments of publications where the citations featured:

- (1) Type B: citations indicating theories, methods, and concepts of other authors.
- (2) Type C: citations indicating the problems or gaps in related scholarship.
- (3) Type O: citations other than B and C.

The research of Nanba, Kando and Okumura identified the phrases employed by the authors in the citation process, which were then classified according to these types.

This short review of citation typologies should also mention the attempt to formalize the citation types into an ontology. CiTO, Citation Typing Ontology (Shotton, 2010), was established within the framework of semantic publishing, which is an interdisciplinary research area focused on the application of semantic technologies to the information flow in science. CiTO distinguishes 96 types of bibliographic citations, which are classified either as rhetorical or as factual. The first category is further divided into positive, negative, and neutral. CiTO offers a detailed set of citation types, which makes it a very expressive tool, but might be prove challenging when applied in empirical research.

This section discusses only a few significant attempts to determine the nature of bibliographic citation in scientific publications. At least two crucial problems might be identified here: the means of constructing such typologies, and their application in empirical research. The scholars cited here took various approaches to the first problem (empirical, rationalist), and to the specificity of the scientific discourse particular to a given discipline, which impacts the types and functions of bibliographic citations. The second problem is related to conducting the citation analysis using information technologies which would account for qualitative factors. Because manual citation analysis is time-intensive, the researchers direct a large part of their attention and energy towards the automatization of this process.

### 3. The aim and methodology of research

The main aim of the research presented in this study was the characterization of various types of bibliographic citations in the research articles published in the journal *Zagadnienia Informacji Naukowej – Studia Informacyjne (ZIN)* in the years 2016–2017. We studied those texts which presented the results of the authors' own research, published in the section 'Theses'. Our method relied on the application of citation analysis (Smith, 1981), supplemented by a qualitative analysis, i.e., an application of an existing citation typology. For the purposes of this study, we used the typology established by B. Peritz (1983), which emphasizes the functions the citations fulfil in the rhetorical structure of a scientific publication. The Peritz's scheme was established to be easily applicable to a manual citation analysis, mostly in the study of texts from the discipline of social sciences. This scheme consists of eight types of citations:

- C1. Setting the stage for the present study. Citations to texts in order to justify the proposed research aims.
- C2. Background information. Citations to texts presenting general knowledge on the subject of the issues discussed in the citing text, as well as factual information.
- C3. Methodological. Citations of works describing methodological issues featuring in the citing text.

C4. Comparative. Citations to other studies in order to compare the results presented in the citing text.

C5. Argumental, speculative, hypothetical. Citations to other texts in order to support the proposed hypotheses and to suggest directions for further research.

C6. Documentary. Citations to sets of research data, i.e., raw data.

C7. Historical. Citations to the work of other scholars in order to reconstruct the history of research of a given issue or as a sign of respect for their pioneering work in a given area.

C8. Casual. Citations indicating thematically connected works, without the comparative aspect.

Every bibliographic citation in the data sample was manually classified as one of the eight types from Peritz's model. Additionally, its position in the citing text was noted, with the IMRaD model as a starting point. Although the guidelines for the authors publishing in ZIN do not oblige the authors to format their texts according to the IMRaD scheme, they require that the authors prepare a structured abstract referencing the key elements of this model. Therefore, it is likely that the body of an article published in ZIN will contain sections typical for the IMRaD model, even if they will not be explicitly identified as such by their headings. Therefore, we assumed that it is possible to analyze the structure of a research article published in ZIN using the IMRaD model and thus to determine the position of the citation in relation to the model's elements. We also assumed that the type of the research presented in a given article may have an impact on the type of bibliographic citations. To account for this, we employed a simplified typology of research publications, which consists of four types of publications (1) theoretical (presenting theoretical and methodological considerations); (2) empirical (presenting results of the research based on the collected research material); (3) review (presenting results of a study of critical literature); (4) other. The fourth category had a complementary character, and was introduced to close the set.

The accepted two-year long range of the research material was determined by the main research aim, i.e., characterization of functions which the citations fulfilled in the citing texts. Therefore, we resigned from an in-depth quantitative citation analysis, because the narrow time span would not justify a generalization of the results achieved.

The basic metadata regarding the articles and their appended bibliographies was collected from the Central European Journal of Social Sciences and Humanities (CEJSH). Then, a simplified bibliographic record of every article was entered into a spreadsheet, supplemented by the information regarding the bibliographic citations identified in its content. The primary source of the information employed in the citation analysis were the texts of the articles published electronically as pdf files. Each citation was interpreted in the context of its appearance, which necessitated a familiarity with the fragment of the article where it appeared.

An additional research aim was to test the usefulness of Peritz's typology for the empirical research. It also involved the issue of its adequacy to the publications from the discipline of information science, as well as possible interpretative problems in the process of categorizing the citations.

The methodological premises accepted in this study have their limitations. Firstly, subjective factors may influence the process of categorizing bibliographic citations, which was conducted by one person, a student in the second year of Library and Information Science MA at University of Warsaw. There is a possibility that a classification conducted

by a larger number of people would bring different results. Secondly, Pertiz's typology has limitations as well. The author showed that although her typology has a wide application to citation analysis of articles from the generally understood discipline of social sciences, its recommended application is to the texts presenting the results of empirical research, as it is less suitable for the citation analysis of articles concerned with history and methodology alone (Peritz, 1983, 304). Because the types established by Peritz are highly general, and only C6 clearly refers to citing quantitative data, it has a high research value. Therefore, we chose to apply it in our citation analysis.

#### 4. Results

In the years 2016–2017, ZIN published 34 research papers in total, out of which 16 (47%) were classified as presentation of the results of empirical research, 11 (32%) as theoretical reflection, and seven (21%) as a review of scholarship. The authors cited 1022 works in total, with the total number of citations being 1825. It means that certain works were cited more than once in a single text. Therefore, in the further discussion of results we will define the citation number in a given article as a total number of citations in the text, rather than a number of positions in the bibliography. The results of quantitative analysis show that in 71% cases a given work was cited only once, in 13% it was cited twice, in 5% – three times, in 4% – four times, and in 2% – five times. In 54 cases (5%), a text was cited more than five times.

Table 1 presents the interquartile range of the dispersion of the citations per article. This method allows for an analysis of the dispersion of the citations above and below the median value, which equalled 41 citations per article. The lowest number of citations (2) was noted for the article by Mariusz Luterek, *Polish Public Libraries as Intermediaries in Accessing Information and Public Services (e-Government) in the Opinion of Librarians*, which recorded the results of a survey conducted among librarians. The highest number of citations (236) occurred in a text by Łukasz Opaliński, *Bibliometric Methods to Foresee and Assess the Development of Scientific Disciplines. Literature Analysis. Part 2. Comparisons, Hybrid and Statistical Methods, Analysis of Patents and Main Paths of Literature Development and Other Original Approaches in Terms of Predictive Methodology*<sup>2</sup>. The text was an in-depth analysis of the studies on the application of quantitative methods to predicting the development of scientific disciplines.

The data presented in Table 1 indicates that the value of the first quartile was 25, which means that 25% of the texts in the research set, cited 25 or less works. The value of the upper quartile was 62, which means that 75% of the texts in the research set cited 62 articles, or less. The average citation number in the data sample was 53, but the high variance in the number of the works cited (between 2 and 236) and this, a high value of standard deviation (50), does not allow us to use this number to characterize the research set.

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<sup>2</sup> Oryg. *Bibliometryczna metodologia prognozowania i oceny rozwoju dyscyplin naukowych. Analiza piśmiennictwa. Część 2. Badania porównawcze, hybrydowe, statystyczne, analizy dokumentów patentowych, ścieżek rozwoju dyscyplin oraz pozostałe oryginalne podejścia metodologiczne.*

Tab. 1. Statistical dispersion of citations per article

Minimum value	2
Lower quartile (Q1)	25
Median (Q2)	41
Upper quartile (Q3)	62
Maximum value	236

We correlated the number of the citations with the type of the article citing to see the distribution of citations in articles presenting different types of research processes. The results show that the average citation number was highest for the review articles (116), which is an understandable consequence of the method employed in such publications. The average citation number for theoretical texts was 32, and for presentations of results of empirical research was 41. The number for theoretical texts was lower than the median number for the whole data set, while the number for the presentations of results of empirical research was equal to the median.

Another variable we accounted for in our research was the position of the citation relative to the structure of the article. According to the methodological premises presented in the previous section, we accepted the IMRaD model as a starting point. Figure 1 shows the percentage distribution of citations taking into account the types of the articles and location of the citation.

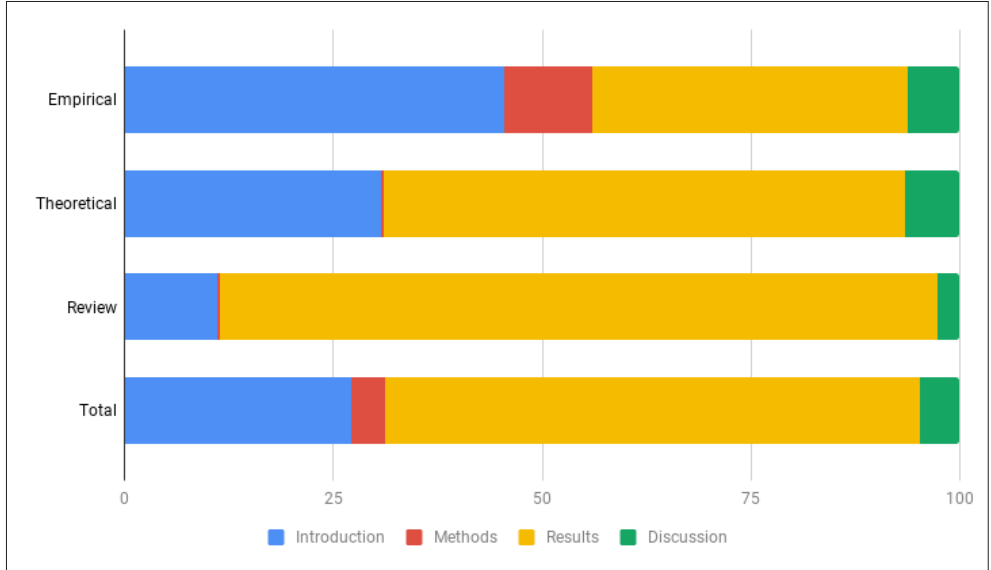


Fig. 1. Percentage distribution of citations taking into account the types of the articles and location of the citation

The analysis of the percentage distribution of citations taking into account the types of the articles and location of the citation shows that 64% of citations occur in the section devoted to the presentation of the results of the conducted research. Almost one third (27%) of the citations to secondary sources occurs in the introduction. A relatively small part of the citations occurs in sections on the methodology (4%) and conclusions drawn from the conducted research (5%). However, this image changes when we correlate the position of the citation with the type of the article. We see significant variations in the distribution of the citations relative to the structure of the article. In review articles, a relatively high proportion of citations (86%) occurs in the section presenting the results of research, which is understandable, as it is the secondary sources which constitute the material for the research presented in these publications. 62% of the citations occur in this section of theoretical text, and 38% in the articles presenting results of empirical research. The section devoted to the presentation of conclusions drawn from the research features the least citations to secondary sources, irregardless of the type of the article.

After analyzing the citations to secondary sources occurring in the body of the citing article, we classified every citation as one of the types identified in the Peritz's typology. Table 2 presents the quantitative and percent distribution of the citation types in the data sample.

Tab. 2. Citation distribution according to the types

Citation type	Number of occurrences	Percentage of occurrences
C1	192	11
C2	129	7
C3	62	3
C4	89	5
C5	148	8
C6	75	4
C7	832	46
C8	269	15

The highest number of citations belongs to the type C7, the category of historical citations, which contribute to a review and discussion of the issues in a given field. They constituted almost a half (46%) of all the citations recorded in the data sample. This citation type indicates that the author considers the cited work as influential for the growth of knowledge in a given area. Peritz (1983, 305) notes that it might be difficult to distinguish between a historical (C7) and a preparatory (C1) citation. She suggests that type C7 is not directly related to the research questions posed in the citing article, which would be characteristic for type C1. The following most dominant citation types were casual citations (C8 – 15%), and preparatory citations (C1 – 11%), which mostly serve to identify and justify the research problem. 8% of the citations belongs to type C5, indicating a citation to secondary sources to support the author's hypotheses and to suggest directions for further research. A relatively small proportion of the citations belongs to type C4 – comparative (5%), C6 – documentary (4%) and C3 – methodological (3%).

It should be mentioned that not all citation types occurred in every article analysed, which might influence the interpretation of the data from Table 2. All types of citations (C1–C8) featured only in two articles. Four was the average number of citation types occurring in a single article. Table 3 shows the distribution of citation types per article.

Tab. 3. Distribution of citation types per article

Citation type	The number of articles where the citation type occurred	The percentage of articles where the citation type occurred
C1	21	62
C2	26	76
C3	14	41
C4	11	32
C5	26	76
C6	18	53
C7	34	100
C8	24	71

The data presented in the Table 3 indicates that only historical citations (C7), contributing to a review and discussion of issues within a given field, occurred in all articles in the research set. The authors often referred to secondary sources to give a view of a general knowledge on the subject of the research problems they studied (C2) and to support their hypotheses and suggest the directions for further research (C5). Surprisingly, more than a half of articles (59%) featured no methodological citations (C3).

To achieve a more in-depth understanding of the distribution of the citation types, we decided to correlate this variable with the type of the publication. Table 4 shows the percent distribution of the citations in the articles of various types.

Tab. 4. Percent distribution of the citation types in the articles of various types

	Empirical	Theoretical	Review
C1	16.25	15.38	4.22
C2	5.94	16.81	3.98
C3	8.28	1.42	0.50
C4	12.50	1.14	0.62
C5	8.91	10.83	6.58
C6	6.88	3.13	2.48
C7	31.41	41.03	60.50
C8	9.84	10.26	21.12

It is evident that the distribution of preparatory citations (C1) varies between review articles, and the empirical and theoretical articles: they constitute a much smaller portion of all citations in review articles. Theoretical texts contain a higher number of citations

presenting general knowledge of the issues they discuss (C2) than other types of the articles. Methodological citations (C3) occur in the empirical articles more often than in others, as do comparative citations (C4). We noted a relatively low variance in the distribution of the argumental citations (C5). Documentary citations (C6) feature in empirical articles more often, which is understandable if we consider the specific methodology of these texts. The specific methodology also explains the prevalence of historical citations (C7) in review articles. The casual citations (C8), indicating citations to thematically similar works, occurs mostly in the review articles.

## 5. Conclusion

The presented results allow us to formulate conclusions of two kinds, firstly those immediately related to the results, and secondly, those related to the methodology.

Despite a small size of the data sample, the achieved results allow us for a certain degree of generalization, which makes it possible to sketch a profile of the articles from the discipline of information science published in *ZIN*, accounting for the functions the citations they feature fulfil. The results of our research show significant variations in the distribution of the citations relative to the structure of the article depending on the type of the article. The citations in the works presenting results of an empirical research are usually concentrated in the introduction and in the discussion of the results, whereas in the review and theoretical articles, they occur in the section presenting the results of the research. We have also noted that only a small portion of all citations occurred in the section concerned with the methodology. The results we achieved are mostly aligned with the citation distribution relative to the sections of IMRaD in scientific publications following the scheme of John Swales (Campbell, 2013; Swales, 2004). On the basis of a study of the genres of scientific publications, Swales concluded that a high number of the citations is characteristic for the introductions, and for the sections presenting the achieved results; a low number – for the section devoted to the methodology, and irregular – for the discussion and results sections. The results of our study showed that Swales' model holds up only for the introductory and methodological sections. Our research showed that the highest portion of citations in the analysed set of the articles occurred in the section presenting the achieved results, and the lowest – in the section devoted to the discussion and conclusions. However, we should be careful with the interpretation of these results. We should bear in mind that the model of an article based on the IMRaD structure was first established in relation to the publications from the disciplines of exact sciences, and is not necessarily the best framework for an approach of rhetorical structure of the publications from the discipline of information science.

With regards to the function the citations fulfil in an article, we may suggest several conclusions. The authors do not always justify their selection of a research question by situating it in the larger context, and do not always indicate the source of their methodological consideration. The methodological citations are particularly marginalized in theoretical and review articles. However, authors often refer to works presenting general knowledge, whether to define the terms they are borrowing, or to refer to scientific laws and theories; they always refer to the historical aspect of the problems they discuss. It is apparent that

they wish to participate in the scientific discourse through a confrontation of their theses with the work of other scholars. However, they rarely compare the results of their research.

As far as the methodology is concerned, we found Pertiz's typology an efficient research tool allowing for a categorization of all the citations found in the articles studied. For the purpose of the current study, we accepted a working uncertainty coefficient. We marked the citations which posed difficulties to an interpretation following Pertiz's model; they constituted 3.5% of all citations identified in the data sample. It shows that Pertiz's typology is a relatively appropriate research tool for the analysis of the types of bibliographic citations. Considering that we noted a small uncertainty while categorizing the citations, we argue that a manual study of citation types requires a several iterations for the identification and elimination of interpretative problems, as suggested earlier by other authors (Di Iorio et. al., 2013a; 2013b).

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## Analiza typów cytowań bibliograficznych w *Zagadnieniach Informacji Naukowej* w latach 2016–2017

### Abstrakt

**Cel/Teza:** Celem artykułu jest zbadanie typów cytowań bibliograficznych w artykułach badawczych opublikowanych w czasopiśmie *Zagadnienia Informacji Naukowej – Studia Informacyjne* (ZIN).

**Koncepcja/Metody:** W badaniach wykorzystano metodę analizy cytowań bibliograficznych rozszerzoną o typologię cytowań opracowaną przez B. Peritz. Przedmiotem badań były 34 artykuły badawcze opublikowane w ZIN w latach 2016–2017. Koncepcja badań zakładała manualną identyfikację i kategoryzację cytowań bibliograficznych, które wystąpiły w zbiorze badawczym oraz korelację typów cytowań z miejscem wystąpienia w strukturze artykułu oraz typem artykułu.

**Wyniki i wnioski:** Wyniki badania pokazały istotne różnice w dystrybucji cytowań w strukturze artykułu naukowego w zależności od jego typu. Dominującym typem cytowań w zbiorze badawczym były odwołania w częściach artykułu stanowiących przegląd piśmiennictwa i omówienie zagadnień. Autorzy często odwoływali się do innych prac w celu wskazania na istniejącą wiedzę ogólną na temat opisywanych problemów badawczych oraz w celu wsparcia stawianych przez siebie hipotez i wyznaczania dalszych kierunków badań. W ponad połowie artykułów nie wystąpiły cytowania o charakterze metodologicznym.

**Oryginalność/Wartość poznawcza:** Wartość poznawczą artykułu stanowi z jednej strony analiza rzeczywistych funkcji, jakie pełnią cytowania w strukturze retorycznej publikacji naukowych z obszaru informatologii, a z drugiej – krytyka metodologiczna zarówno procesu, jak i narzędzia badawczego.

### Słowa kluczowe

Analiza cytowań. Bibliometria. IMRaD. Typy cytowań. *Zagadnienia Informacji Naukowej*.

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osobowych z wykorzystaniem kartoteki VIAF (2016; *published in: J. Woźniak-Kasperek, J. Franke (eds.), Bibliografia – teoria, praktyka, dydaktyka*).

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