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The conditions of academic education and the methodological preferences of young scientists: A systematic literature review

Abstract

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This systematic literature review (SLR) collects and analyses publications on methodological preferences from almost the last 50 years. The aim of the review is to diagnose the state of knowledge as well as to integrate and synthesize the existing literature in the field of methodological preferences. This review concerns 73 texts that have been qualified for the study. The SLR reveals the need to reconstruct a semantic web, in which the notion of methodological preferences is embedded. Thus, it indicates the need to introduce a definition of methodological preferences, as well as to propose a model of this feature. Furthermore, some implications for future research are presented, along with the limitations of the systematic review of the literature.

Keywords

methodological preferences; research methods; academic education; research methodology; systematic literature review

Introduction

In the discourse surrounding research undertaken within a given scientific discipline, it is important not only what researchers do (research problems), but also how they do it (research methods). When planning and preparing a research project, as well as during its implementation, the researcher faces numerous method-

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ological choices regarding such issues as the theories and methods for data collection and analysis. The researcher's decisions are regulated in the form of specific rules and procedures that make up the theory of scientific methods. It should be noted that an important factor guiding scientific research is also the researcher's methodological preferences (Szmatka et al., 1996, p. 55), which, as Van de Walle (2017, p. 461) writes, influence the substantive research choices. Issues related to the research methodology are in fact an element that determines the direction of the research worker's search (Szmatka et al., 1996, pp. 56–57). Researchers tend to become attached to a particular method and become its advocates, which suggests that methodological preferences play a significant role in organizing knowledge in the field of particular scientific disciplines (Szmatka et al., 1996, pp. 56–57).

As Szmatka et al. (1996, p. 71) mention, methodological preferences may be a consequence of university education, with the conditions of education being an important element determining the methodological preferences of young scientists. An example may be a variable associated with the supervisor who acts as an expert and mentor for the doctoral student, e.g., in the area of research methodology. Due to the young researcher's low level of knowledge and skills in conducting scientific research, the promoter supports them in making decisions related to the choice of data collection or analysis methods, which is of particular importance for the doctoral student's entire research project (Sułkowski & Lenart-Gansiniec, 2021, p. 134). In the process of shaping methodological preferences, an important place is also occupied by research orientations dominant in a given academic centre, which may be expressed in the so-called 'hidden education programmes' at doctoral schools. In order to gain the acceptance of the scientific community in which they find themselves, young researchers with as yet undeveloped research competences may adopt methodological orientations popular among senior researchers. From the point of view of the doctoral student's position in the world of science, their decisions made may serve to maximize the expected value of the utility function (Suchecka & Nieszporska, 2015).

Academic education occupies a special place in the acquisition of knowledge and skills in the field of research methodology. According to research (Papanastasiou & Papanastasiou, 2004), its quality has a significant direct impact on the formation of attitudes towards science. The discussion about the model of doctoral education is an important element of safeguarding the quality of science practised around the world (Mikołajczyk & Naskręcki, 2017, p. 107). Young scientists make an appreciable contribution to the development of scientific research, thus constituting a significant element of the entire science system (Majewski, 2010). For this reason, attention should be paid to the relationship between the conditions of academic education and methodological preferences.

Methodological considerations

At first glance, the issue of methodological preferences is rarely addressed in comprehensive studies. In order to fully explore this issue and better understand its essence, it was decided to conduct a systematic literature review (SLR). There are perceptible advantages provided by this particular method, which other review methods, including traditional literature reviews, do not possess.

Traditional literature review procedures are burdened with errors (Czakon, 2011, pp. 57–58). Firstly, there is no methodological rigour in such a process. As a result, works devoted to literature research conducted in this way resemble an essay rather than an objective research article. Secondly, traditional reviews tend to be fragmentary. This is because the scope of searching for literature items is incomplete, since it does not cover all available items potentially relevant to a given issue. Thirdly, the description of the procedure for conducting a traditional review does not include the inclusion and exclusion criteria for individual source materials. It is not disclosed on what basis the author decided to include some of the items in the review and rejected others. Fourthly, the traditional literature review does not focus on the methodological quality of other studies' results. Thus, a literature review in its traditional form does not contribute to reducing biases potentially held by the researcher who conducts it. The author may or may not be aware of these prejudices, which may significantly affect the final shape of review papers (Petticrew & Roberts, 2006, pp. 4–5). Factors related to research funders who have expectations about their results or the need for a scientist to make positive discoveries in order to publish them make it difficult to conduct a literature review (Petticrew & Roberts, 2006, p. 5). Thanks to their advantages, systematic literature reviews minimize the bias that scientists may show towards the inclusion or exclusion of certain publications from their analyses.

The main advantage of a SLR is the ability to reliably summarize the existing knowledge on a given topic (Mazur & Orłowska, 2018, p. 236). This reliability is expressed in the following issues (Hensel, 2020, p. 7):

a) taking into account all sources devoted to a given issue (according to the adopted criteria),
b) not omitting research results that are not consistent with the views or do not correspond to the researcher's intentions,
c) verifying the accuracy of the review is possible thanks to the option of its replication.

Moreover, a SLR allows researchers to identify learning gaps. These gaps, also called cognitive gaps, are areas of ignorance (Czakon, 2011, p. 60), where the

level of information gathered so far is low or unsatisfactory. Cognitive gaps may stem from insufficient research on a given issue conducted or from a complete lack of such research. Thanks to a systematic literature review, it is also possible to identify areas of spurious certainty. These are areas where scientists may think have extensive knowledge, but in fact there is little convincing evidence to support their position (Petticrew & Roberts, 2006, p. 2). Thus, the results and conclusions from the SLR may clearly indicate the need and direction for further research.

The number of literature sources that scientists can use is constantly increasing. For this reason, a SLR is also of increasing importance. As Hensel points out, "The systematic conduct of a literature review becomes more important with each passing year. Twenty or thirty years ago, a researcher could keep track of all important publications and thus base his research on intuitive recognition of literature" (Hensel, 2020, p. 8). At the moment, it is no longer possible to orientate oneself in each position separately. Thus, it was considered justified to use a systematic review of the literature to explore the issue of methodological preferences.

Method

The research question that defined the framework of the systematic review of the literature was as follows: What is the current state of knowledge in the social sciences about methodological preferences and conditions of academic education? The aim of the systematic literature review was to diagnose the state of knowledge as well as to integrate and synthesize the existing literature in terms of methodological preferences and conditions of academic education. The focus was also on setting directions for further research on the above-mentioned issue.

Further reference was made to the procedure of SLR, which includes three main stages (Czakon, 2011, p. 59):

1. Isolation of databases and a collection of publications;
2. Selection of publications and development of a database;
3. Bibliometric analysis, content analysis, and verification of the usefulness of the results obtained for further research.

Bearing in mind the above-mentioned phases of the procedure, in the first stage, databases were selected, which were later analysed. This step, in accordance with the methodology of SLR, is identified as the selection of the subject of research (Klimas, 2011, p. 172). Due to the desire for detailed searches, two international databases were selected: Web of Science and Scopus. These biblio-

graphic and abstract databases are popular in the general academic community. They also have access to many sources. Web of Science includes over 20,000 peer-reviewed journals from more than 250 disciplines. Scopus, on the other hand, is a comprehensive database of abstracts and citations with over 23,000 peer-reviewed journals. In order to support the literature review, it was decided to use the AlmaStart search engine. This tool provides an integrated search for documents available in the library or online at the University of Bologna. The use of the AlmaStart search engine was possible due to foreign cooperation established with the University of Bologna as part of the PROM programme, which the Polish National Agency for Academic Exchange (pol. *Narodowa Agencja Wymiany Akademickiej*, NAWA) manages for PhD students. Thanks to the funding obtained, a library query was carried out using the resources of the host institution, i.e., the University of Bologna, Europe's oldest university, with rich library resources. As a supplement to the review of Polish-language literature, the Google Scholar (scholar.google.com) search engine dedicated to academic applications was also included. The filtering criteria were the following terms: [methodological preferences] or, in the case of Google Scholar, [preferencje metodologiczne]. As a result of searching selected databases and search engines, a total of over 1,104 publications were obtained (Table 1).

During the second stage, the focus was on the selection of the publications by imposing restrictions on them, i.e., inclusion and exclusion criteria for further analysis. The following inclusion criteria were defined:

a) subject – publications should contain the following words in their title, abstract, keywords or content: methodological preferences, preferences, methodology, methods,
b) language – only publications written in English or Polish were included,
c) publication status – texts available only in open access are included,
d) field of science – the focus was on sources that were located in the area of social sciences.

Exclusion criteria such as type of publication were also applied. This means that the focus was only on scientific articles, while post-conference materials, reviews, book chapters, and doctoral theses were not included in the literature review. Also, those texts that did not concern strictly methodological preferences and did not bring the author closer to achieving the established goal of the review were also rejected. Duplicate publications were also eliminated, both in individual databases or search engines and between them. The 74 publications obtained in this way were subject to further analysis in subsequent stages (see Table 1).

The year of publication was not taken into account. It was found that the number of publications is small and further narrowing would be detrimental to the purpose of the SLR. For the same reason, both empirical (all research projects were acceptable) and conceptual works were included in the review. Other literature reviews were also qualified, although they were aware of the risk of such actions in the form of double inclusion of studies (Lenart-Gansiniec, 2020, p. 177).

Table 1

Publications section of the systematic literature review

Criteria	Databases, search engines			
	English-language			Polish-language
	AlmaStart	Scopus	Web of Science	Google Schoolar
Total number of publications on methodological preferences	875	96	66	67
After applying the inclusion and exclusion criteria	42	34	27	18
After removing duplicate items		55		18
Qualified for further analysis		**73**		

Note. Source: own study.

The in-depth analysis covered the third stage of the review. It concerned 55 publications extracted from English-language databases and search engines and 18 publications extracted from Polish-language databases. Quantitative methods were used for the analysis, including bibliometric analysis and frequency analysis. Qualitative analyses were also carried out, including content analysis.

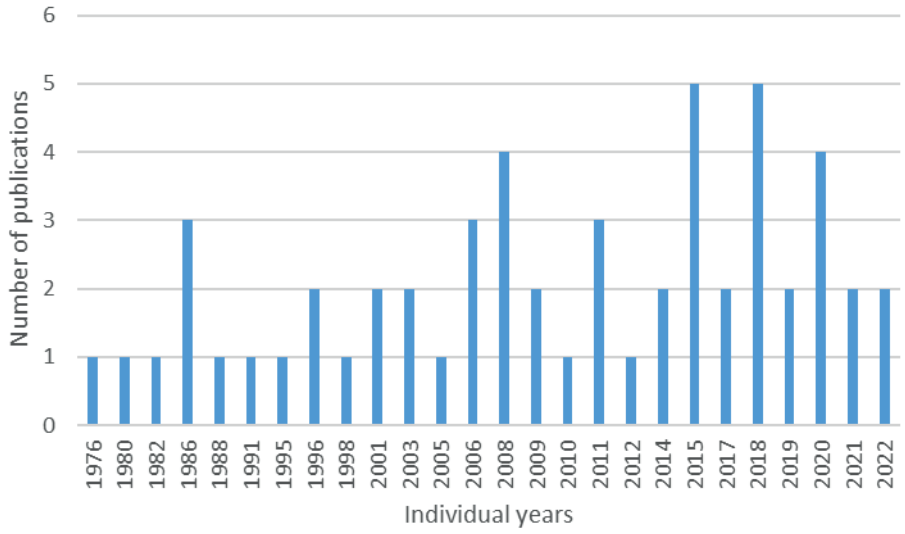
Bibliometric analysis

As part of the systematic literature review methodology, the number of publications in particular years was analysed, broken down into English (Chart 1) and Polish (Chart 2). The earliest English-language text on methodological preferences appeared in 1976 in the journal *East Central Europe*. It is entitled *The Study of the DDR in the USA*, and its author is Melvin Croan. However, when it comes to Polish, the first article is a study by Nosal entitled *Indywidualne style poznawcze a pref-*

erencje metodologiczne badaczy [Engl. Individual cognitive styles and methodological preferences of researchers], published in 1986 in the quarterly *Zagadnienia Naukoznawstwa*. The analysis of the number of publications devoted to methodological preferences allows us to conclude that this subject is not of particular interest among scientists. Moreover, no upward or downward trend was observed in terms of the frequency of English- or Polish-language texts.

Chart 1

Number of publications in English-language databases and search engines

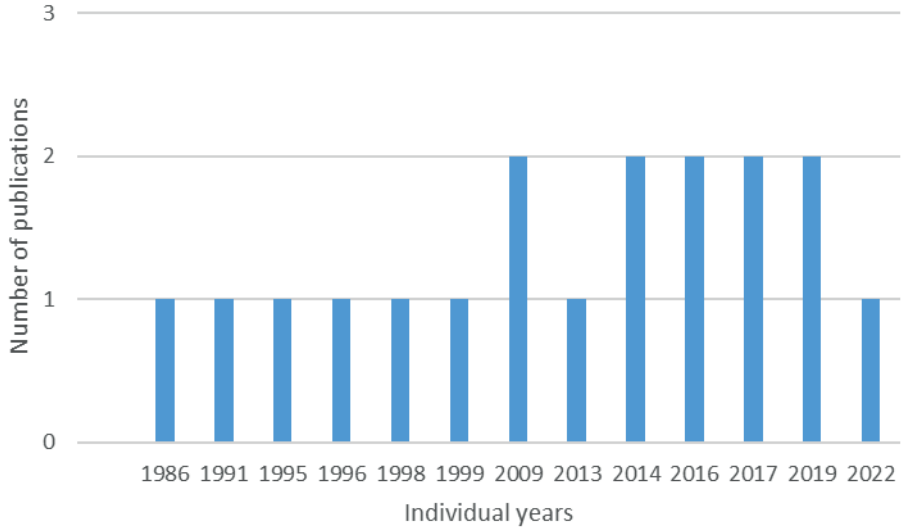


Note. Source: Own study.

However, a much smaller number of Polish-language texts dealing with the issue of methodological preferences were noted than similar English-language studies. Furthermore, in the Polish literature, greater breaks in the publication of publications devoted to this subject were noticed. Between 1969 and 1985 (a 16-year period), there was no article of significance in the understanding of the literature review concerning methodological preferences. Similarly, in the period 2000–2008 (8 years), there were no such large gaps in foreign journals.

Chart 2

Number of publications in the Polish-language Google Scholar search engine



Note. Source: Own study.

In accordance with the accepted standard of a systematic literature review, the subsequent citation analysis made it possible to assess the impact of individual publications on further research and scientific considerations. The most popular, both in terms of citations and references, is the work by Hertwig and Ortmann entitled *Experimental practices in economics: A methodological challenge for psychologists?* This took first place in both the Scopus (Table 2) and Web of Science (Table 3) databases. It should be noted, however, that the article itself is not a breakthrough when it comes to the area of methodological preferences. The text is not a comprehensive study. The authors focused primarily on another issue, i.e., experimental practices in economics. Nevertheless, the work valuable for its contribution to the literature review. It raises interesting points, such as why changing the specific methodological practices of scientists can be a challenge. Hertwig and Ortmann (2001) write thus: "... our methodical habits, rituals, and perhaps even quasi-religious attitudes ... are deeply ingrained in our daily routine as scientists and therefore often not the subject of reflection" (p. 383).

Table 2

The most cited publications on Scopus methodological preferences

No.	Title of the article	Author/Authors	Source	Date	Citations
1	Experimental practices in economics: A methodological challenge for psychologists?	Hertwig, R., Ortmann, A.	*The Behavioral and Brain Sciences*, *24*(3), pp. 383–451	2001	532
2	A review of social networking service (SNS) research in communication journals from 2006 to 2011	Zhang, Y., Leung, L.	*New Media & Society*, *17*(7), pp. 1007–1024	2015	114
3	What is the use of a single-case study in management research?	Mariotto, F.L., Zanni, P.P., de Moraes, G.H.S.M.	*RAE – Revista de Administração de Empresas*, *54*(4), pp. 358–369	2014	69
4	Data envelopment analysis in financial services: a citations network analysis of banks, insurance companies and money market funds	Kaffash, S., Marra, M.	*Annals of Operations Research*, *253*(1), pp. 307–344	2017	68
5	Getting inside the head of the management researcher one more time: Context-free and context-specific orientations in research	Blair, J.D., Hunt, J.G.	*Journal of Management*, *12*(2), pp. 147–166	1986	54
6	Sex bias in clinical judgment: Later empirical returns	Davidson, C.V., Abramowitz, S.I.	*Psychology of Women Quarterly*, *4*(3), pp. 377–395	1980	46
7	Internet marketing research in hospitality and tourism: a review and journal preferences	Leung, X.Y., Xue, L.; Bai, B.	*International Journal of Contemporary Hospitality Management*, *27*(7), pp. 1556–1572	2015	39
8	"Talk and social structure" and "studies of work"	Psathas, G.	*Human Studies*, *18*, pp. 139–155	1995	38

Tab. 2 cont.

9	The social-mediated crisis communication research: Revisiting dialogue between organizations and publics in crises of China	Cheng, Y.	*Public Relations Review*, *46*(1), 101769	2020	37
10	Subnational governance approaches on the rise – reviewing a decade of Eastern European regionalization research	Pitschel, D., Bauer, M.W.	*Regional & Federal Studies*, *19*(3), pp. 327–347	2009	32

Note. Source: Own study based on Scopus: https://www.scopus.com/. Number of citations as of date on which the database was accessed: 30 May 2023.

Table 3

The most cited publications on Web of Science's methodological preferences

No.	Title of the article	Author/Authors	Source	Date	Citations	Appeals
1	Experimental practices in economics: A methodological challenge for psychologists?	Hertwig, R., Ortmann, A.	*The Behavioral and Brain Sciences*, *24*(3), pp. 383–451	2001	466	218
2	A review of social networking service (SNS) research in communication journals from 2006 to 2011	Zhang, Y., Leung, L.	*New Media & Society*, *17*(7), pp. 1007–1024	2015	175	63
3	Methodological orientations of articles appearing in criminal justice's top journals: Who publishes what and where	Tewksbury, R., DeMichele, M.T., Miller, J.M.	*Journal of Criminal Justice Education*, *16*(2), pp. 265–279	2005	61	26
4	What is the use of a single-case study in management research?	Mariotto, F.L., Zanni, P.P., de Moraes, G.H.S.M.	*RAE – Revista de Administração de Empresas*, *54*(4), pp. 358–369	2014	49	49
5	Internet marketing research in hospitality and tourism: a review and journal preferences	Leung, X.Y., Xue, L., Bai, B.	*International Journal of Contemporary Hospitality Management*, *27*(7), pp. 1556–1572	2015	34	23

6	Subnational governance approaches on the rise – reviewing a decade of Eastern European regionalization research	Pitschel, D., Bauer, M.W.	*Regional & Federal Studies*, *19*(3), pp. 327–347	2009	28	125
7	Qualitative research meets the ghost of Pythagoras	Michell, J.	*Theory & Psychology*, *21*(2), pp. 241–259	2011	28	79
8	The social-mediated crisis communication research: Revisiting dialogue between organizations and publics in crises of China	Cheng, Y.	*Public Relations Review*, *46*(1), 101769	2020	29	73
9	Entrepreneurial intentions and gender: Pathways to start-up	Nikou, S., Brännback, M., Carsrud, A.L., Brush, C.G.	*International Journal of Gender and Entrepreneurship*, *11*(3), pp. 348–372	2019	23	110
10	Are the h-index and some of its alternatives discriminatory of epistemological beliefs and methodological preferences of faculty members? The case of social scientists in Quebec	Ouimet, M., Bédard, P.O., Gélineau, F.	*Scientometrics*, *88*(1), pp. 91–106	2011	19	20

Note. Source: Own elaboration based on Web of Science: www.webofscience.com. Number of citations as of date on which the database was accessed: 30 May 2023.

Frequency analysis

Keywords are an important part of a publication and should be selected by the authors with due care. They make it possible to find an article quickly in databases but also present the specificity of a scientific text. They are closely related to the content of the work.

The keywords of publications selected in the earlier, second stage of the literature review were subjected to frequency analysis. Unfortunately, not all studies contain keywords. In the case of English-language databases and search engines, 24 articles were not described using them. This represents 44% of all English-language articles included in the review. The collected keywords were analysed quantitatively. A visualization (Figure 1) of attendance was generated using the Wordle

software (wordle.net). This way of presenting the results of the analysis is called a "word cloud". The frequency of a word is determined by the size and boldness of the font used. The more times a word is repeated in the whole set of words that is analysed, the more visible it is in the graphic.

Figure 1

Keyword frequency analysis

Note. Source: own study using Wordle software.

The most frequently appearing keywords in publications selected from English-language databases and search engines are: research (13), method (10), analysis (8), qualitative (7), methodology (7), science (5), review (4), publication (4), political (4), social (4).

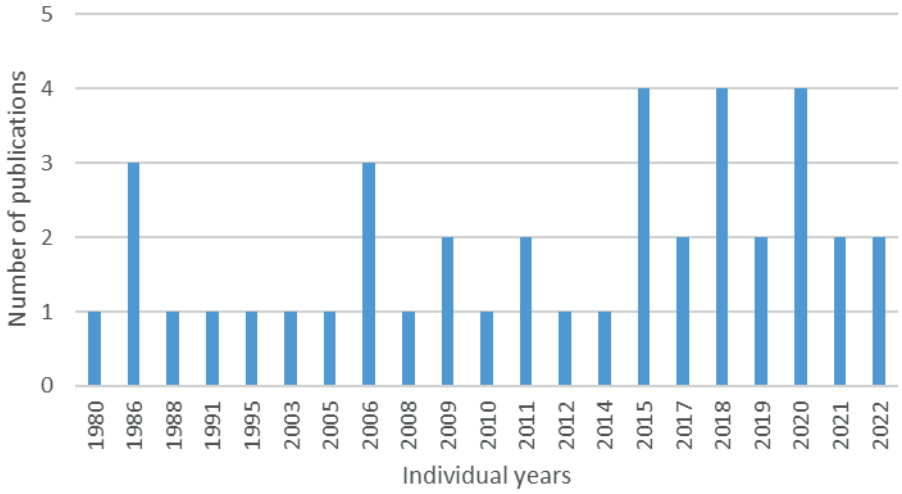
In the case of the Polish-language search engine (Google Schoolar), 11 articles out of 18 do not have keywords, which is 61%. The collected keywords were analysed quantitatively. The most frequently appearing keywords are: psychology (4), research (4), methodology (4), mixed (2), scientific (2), social (2), social (2), research (2), awareness (2), sciences (2). Due to the small number of keywords in Polish that were analysed, the graphical presentation using the Wordle software was abandoned.

In the next step, the focus was on determining the type of articles that were analysed. It was found that most of the publications were of an empirical nature, i.e., 40 texts. It should be emphasized that this group also includes literature reviews, which constituted a significant part of the studies. The remaining 33 articles were classified as conceptual (theoretical) papers. There was no significant difference

between the number of empirical articles published over the years (Chart 3) and the number of conceptual texts (Chart 4).

Chart 3

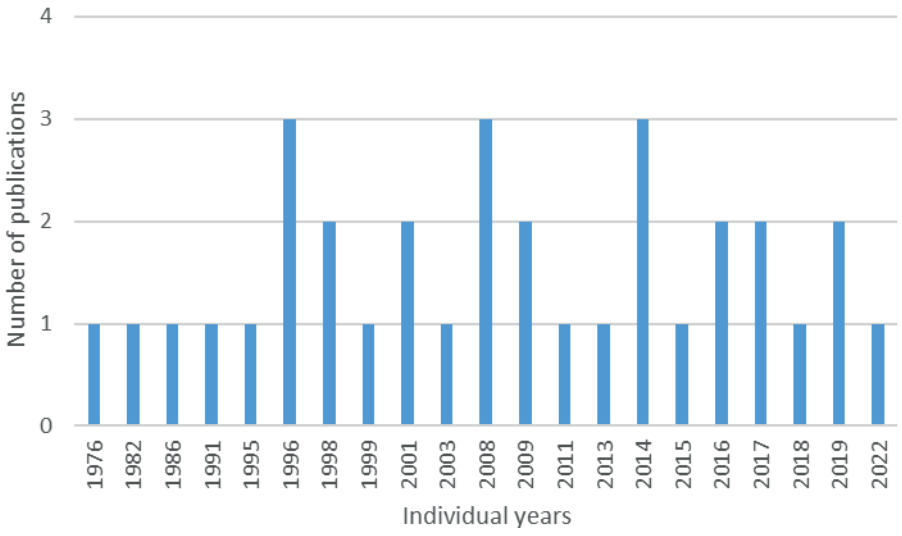
Empirical articles in particular years of publication



Note. Source: own study.

Chart 4

Conceptual articles in particular years of publication



Note. Source: own study.

However, attention was paid to Polish-language studies and the disproportion among them. Of the 18 articles that were analysed, 14 were conceptual works, while 4 were characterized as empirical.

Content analysis

It has already been emphasized that in the collection of empirical texts, a significant proportion of the studies were reviews of publications. This method is often used, e.g., to map methodological preferences. This mapping may concern the research methods chosen by particular authors of a given journal. An example of such a report is the text entitled *Three decades of the International Political Science Review (IPSR): A map of the methodological preferences in IPSR articles* by Lima, Morschbacher and Peres (2018). This study aimed to present the methodological approaches used by political scientists. This concept also made it possible to determine which approaches are regarded as acceptable scientific methods of knowledge creation (in the context of political scientists). In this context, the role of editors was emphasized, who, through their actions (and omissions), determine which of the papers will be published, thus setting the direction for further research within a given discipline (Lima et al., 2018, p. 682). Another of the intentions of this article was to understand the changes taking place in the field of thematic, epistemological, and methodological preferences in political science. The mapping consisted of specifying the methodological approaches (step 1) and techniques or methods (step 2) used in reference to the gender and country of origin of the authors.

Preference mapping can also be performed with reference to more journals. An article entitled *Research and knowledge building in management studies: An analysis of methodological preferences* by Karami, Rowley and Analoui (2006) is based on twenty leading management journals. Its general aim is to examine the methodology used in research reports published in these journals, which can contribute to understanding aspects of creating management knowledge. The study assumes that the methodological approaches adopted by management researchers have significant implications for the accepted nature of knowledge and its importance in management science (Karami et al., 2006, p. 44). Articles published in leading journals set the standards for subsequent scientific work. They present an example of what is perceived as reliable and relevant knowledge in the field of management. According to the authors Karami et al. (2006, p. 44), the research approach also affects:

- how students are adapt to understand the nature of management knowledge,
- possibility and mechanisms of applying theory to practice,

– the shape that teaching takes in modules on research methodology in studies (bachelor, master, doctoral), i.e., curricula and priorities adopted in them.

The articles that questioned the significant role of methodological preferences in the research project were also qualified for the literature review. Among the analysed publications, one study of this nature, authored by Michell, was identified. *Qualitative research meets the ghost of Pythagoras* states that it is the nature of the researched phenomenon that determines the methods that will be used to explore it, not the researcher's methodological preferences (Michell, 2011, p. 241). Thus, Michell rules out any significance of methodological preferences for the research process. It is likely that more scientists identify with Michell's view. However, due to the limitations of the SLR (which will be indicated), other works in this area have not been disclosed.

A counterargument to Michell can be found in Lange's study entitled *Interactions between disciplines and countries in methodical preferences for empirical research* (1986). The article presents the results of research on journals in the fields of psychology, psychiatry, and sociology that concerned the analysis of the methodological preferences of scientists from different countries. On the basis of this research project, Lange (1986) concluded that "Scientists' choice of empirical methods is not solely determined by the subject of research or theory. The use of methods is also influenced by social and historical conditions …" (p. 281). It directly signals the importance of scientists' methodological preferences. It also highlights the interaction between disciplinary and national factors influencing the choice of research method.

On the basis of the analysed articles, it was noticed that the authors use the term methodological preferences freely, seemingly noncommittally. In one work, this term is used synonymously with others. For example: predilection (Marginson, 1998); research style, research patterns (Adams & Rice-Lively, 2009); methodological focus, methodological orientation (Szulevicz et al., 2022; Tewksbury et al., 2005); methodological beliefs (Sheehan & Johnson, 2012); methodological tendencies, methodological bias (Bond, 2018).

This phenomenon may be a consequence of the lack of a definition of methodological preferences accepted in the scientific community, which would be widely presented in the literature on the subject. The authors whose articles were included in the SLR did not cite, either in empirical or conceptual works, the approach to methodological preferences adopted for a given study. They also did not attempt to construct, even for the needs of a specific text, their own definition. This may be the reason for the previously mentioned conceptual chaos expressed in the syn-

onymous use of many terms in one work. The closest to what is called definition formulation were Mounteney and Berg (2008), who, in one of the paragraphs of their article entitled *Methodological preferences* describe the preference principle. They define the principle of preference as the researcher's tendency to use methods that favour and disregard those they find unfavourable (Mounteney & Berg, 2008, p. 230). This explanation should be classified as a general and non-exhaustive issue of methodological preferences.

The lack of a generally accepted (or even published) definition of "methodological preferences" leads to varied interpretations of this concept. This phenomenon is particularly evident in empirical works, though it is still possible to identify what scientists actually study when they address signal the issue of methodological preferences in their publications. For example, Zhang and Leung (2015) associate methodological preferences with specific features of articles over social networking services (SNS) that they included in their literature review. These properties are presented in the table below (Table 4).

Table 4

Identifying methodological preferences with specific features of scientific articles

Property	Featured categories
Analytic approach	a) quantitative b) qualitative c) combine d) critical e) conceptual/review
Main method applied	a) survey b) experiment c) content analysis d) interview e) Ethnography/participation observation f) textual/thematic analysis g) not applicable cases
Observation	a) cross–sectional b) longitudinal c) not applicable cases

Note. Source: own elaboration based on Zhang and Leung, 2015, p. 1011.

Szulevicz et al. (2022), when interpreting methodological preferences, limit themselves to what Zhang and Leung distinguished as an analytical approach, though adding more categories. Thus, they equate methodological preferences with methodological approaches such as mixed-method, qualitative, quantitative, systematic review, theoretical, discourse, and non-identified.

In contrast, Cheng (2020) understands methodological preferences as research methods adopted in the individual articles that he analysed in his work. He distinguishes:

- quantitative methods, including surveys, content analysis and experiments,
- qualitative methods, including case studies, interviews/focus groups, literature reviews, discourse analysis,
- quantitative and qualitative mixed methods.

The most general approach to methodological preferences is presented by Sheehan and Johnson (2012), who only refer to quantitative methods, qualitative methods, and mixed methods without further elaboration.

The above juxtapositions illustrate the previously stated fact of conceptual chaos that prevails in articles dealing with the methodological preferences of various authors.

Summary

The SLR indicated a clear need to reconstruct the semantic network in which this concept of methodological preferences is embedded. Moreover, the term 'methodological preference' should be defined, and a model of this feature should be proposed. These activities will make it possible to fill the existing gap in the knowledge about this phenomenon that has been identified. In addition, it will provide a basis for developing research on methodological preferences and introduce terminological order.

According to the information collected during the systematic review of the literature, no article has been published so far in which the author's attention focuses on the relationship between the conditions of academic education and the methodological preferences of young scientists.

The tools prepared for measuring methodological preferences will provide the basis for diagnosing them and assessing their possible educational conditions, including those related to the inter-centre diversity of education. This may result in the optimization of education in the field of methods of scientific cognition on the basis of recognized educational deficits and excesses. The terms stimulant and destimulant of education used in relation to methodological preferences could be employed to revise the place and content of academic courses in the field of research methodology. In addition, disseminating information on the characteristics of methodological preferences and the conditions for shaping them will provide students with an opportunity to make more informed decisions regarding their further educational path.

Moreover, the existence of instruments for recognizing methodological preferences will make it possible to make intergroup comparisons, also with regard to the represented scientific discipline. This is also interesting from the point of view of the psychosocial determinants of the condition of science and its disciplines.

It is necessary to highlight the limitations of the systematic review of the literature. An undoubted weakness is its focus solely on articles from scientific journals: non-serial publications (books) were not taken into account. Grey literature, including government, academic and business documents that are not commercially published, is also not included. The systematic literature review included only open-access publications in the two aforementioned databases: Scopus and Web of Science, as well as the search engines: Google Scholar and AlmaStart, which were selected arbitrarily. Moreover, the criteria for including or excluding publications from the review can also be considered as its limitations. For this reason, other literature reviews dealing with methodological preferences may be an additional source of information on this issue.

However, it is important to mention publications relevant to the issue of methodological preferences that were not included in the literature review due to the adopted inclusion or exclusion criteria.

An important article is by Pasikowski (2019), titled *Individual methodological orientations – theoretical background and a model of the phenomenon*. This article addresses individual methodological orientations, which are also associated with methodological preferences. Another noteworthy work is Gnitecki's (2006) *Orientacje metodologiczne we współczesnej pedagogice* [Engl. Methodological orientations in contemporary pedagogy]. The concept of methodological preferences can also be considered in reference to Obuchowski's theory of orientation codes (1982), presented in his book titled *Kody orientacji i struktura procesów emocjonalnych* [Engl. Orientation codes and the structure of emotional processes].

Additionally, a publication from the 1980s by Nosal (1986) deserves mention. In his article *Indywidualne style poznawcze a preferencje metodologiczne badaczy* [Engl. Individual cognitive styles and methodological preferences of researchers], Nosal reports the results of his research. To collect data, Nosal developed a test called the Researcher's Individual Preference Profile (PIPB-80) (Nosal, 1986, cited in: Pasikowski, 2019). Although the research did not confirm the hypotheses (Nosal, 1986, cited in: Flakus, 2014), this publication makes a significant contribution to the development of the concept of methodological preferences.

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