

## **Where and how do early career humanists, theologians and scientists-artists search for scholarly information? – a report on the Polish continuation of the Harbingers projects**

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**Abstract:** This analysis deals with the methods of searching for, discovering and accessing scholarly information in a group of early career humanists, theologians and scientists-artists. It is part of the findings of the Polish continuation of an international study that examined scientific communication in the Harbingers cycle, conducted in 2016-2022 among representatives of science, natural sciences and social sciences in eight countries on all continents. The study was conducted using the longitudinal interview method with the same main part of the questionnaire, which allows for various comparative analyses between different time points and between countries. This article presents a qualitative analysis of the responses given by Polish respondents to several questions on the methods of seeking, finding and discovering scholarly information. Young representatives of Polish humanities, theology and art were a diverse group: the information search methods included the use of search engines, alternative services as well as searching the resources of local libraries. It was found that the role of libraries is appreciated and that monographs are highly popular, mainly among the respondents from humanities, theology and art, which distinguishes them from scientists in other fields.

**Keywords:** Early career researchers, searching for information, access to information, humanists, scientists-artists, theologians, libraries

### **1. Introduction**

The scholarly communications attitudes and behaviour of early career researchers have been studied by an international research group headed by Prof. David Nicholas of CIBER Research LTD – an independent research centre. This group includes experienced researchers from the UK, the USA,

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France, Spain, China, Malaysia, Russia and Poland (the author of this paper). The team carried out two projects during the period 2016-2022, i.e. before and during the pandemic, with the abbreviated titles: Harbingers 1 (2016-2019) and Harbingers 2 (2020-2022). They constitute a base for further studies of scholarly communication in these countries, including the National Science Centre project No. 2022/45/B/HS2/00041, which was started in Poland in 2023.

This international research team first analysed the places and the methods used by early career researchers in sciences and social sciences to look for scholarly information. This is the issue dealt with in this paper, which is the first report on the Polish continuation of the two international Harbingers projects. The project carried out in Poland concerns two fields which have not been studied before, i.e., art and humanities.

Since one of the principles of the Polish project is to present the findings against the background of those international analyses, these considerations refer to the sources of information for early career researchers in sciences and social sciences identified in the Harbingers projects.

The search process for scholarly information can be perceived as a multiple stage process, from acquiring bibliographic references to accessing a full text. However, the Harbingers studies found that early career researchers gave up their search quite easily if they failed to get a full text. Moreover, such young researchers were not interested in who or what institution provided them with access to full texts, as long as it was provided, easy and free of charge. These findings were the same regardless of the country in which interviews with early career researchers were conducted, the language of information search on the web or the scientific discipline represented (Nicholas et al., 2017).

Finding, looking for and discovering information is basically the same, and it makes use of various internet resources and social networks. Therefore, it is easier and more difficult at the same time. It seems easier as many global resources are accessible from a home computer desktop, but because the resources are so huge, it is difficult to go through them, and one will always have a feeling of not using everything that has been written on an issue, even during recent years.

According to the literature on the subject (Nicholas et al., 2017; Wolff et al., 2016ab; Borrego and Anglada, 2016; Spezi, 2016), search engines, mainly Google and Google Scholar, dominate as places to start searching for scientific information. Scientific literature databases, such as Web of Science and Scopus (library platforms of online databases), are equally important. Significant methods of searching for scientific information include social media and online communities and, in consequence, smartphones as convenient means of communication. Sometimes, users go to publishers' websites, where they can get access to full texts. Library platforms and other internet services available through local library networks often pass unnoticed, as was found in interviews with early career researchers in sciences and social sciences. Many of the respondents from the eight countries covered in Harbingers projects went through libraries, nearly unaware of the authorised use of other sources, such as Web of Science and Scopus. The names of these two international scientific

databases repeatedly appeared in interviews with respondents from various countries, including Poland (Świgoń, Nicholas, 2017, 2021).

Easy access to full texts is also associated with the increasingly common use of alternative sources of scientific content. In the past, when scientists relied on paper versions of publications, they used library resources and inter-library loans, or they shared copies with others. The development of internet services and the Open Access movement (BOAI20 6, 2022), as well as the pandemic, as shown by the analyses performed by the Harbingers team (Nicholas et al., 2022), increased scientists' expectations regarding instantaneous, preferably free, access to full texts. However, such access was often restricted by subscriptions, fees and embargoes, which resulted in the development of alternative services. These include social networks for scientists, with their best-known examples being Research Gate and Academia.edu and shadow libraries, such as Sci-Hub and LibGen.

The Harbingers study showed that early career researchers were aware of the benefits gained from open access to the scientific literature. They willingly used its free version as users and protested against the high cost of publication as authors. Moreover, ResearchGate was found to enjoy popularity in all the countries studied before the pandemic. The findings of the Harbingers team during the Covid-19 pandemic confirmed these conclusions but also showed that alternative suppliers, i.e., ResearchGate (the popularity of Academia.edu in science was low) and illegal services, such as Sci-Hub, were commonly used by early career researchers in sciences and social sciences. It even seems that both Research Gate and Sci-Hub have won an established position in the process of information search and discovery among researchers in these sciences. There were some differences within individual countries and disciplines, but it was generally found that using these alternative suppliers of scientific content was convenient and it was timesaving, and only in part a consequence of the insufficient offer of libraries at a specific university or a specific country. Anyway, these alternative platforms became part of the scientific panel, if not part of the toolkit of early career researchers in sciences and social sciences (Herman et al., 2023).

## **2. Study design and the respondent group**

The objective of the study whose partial findings are presented in this paper – as was mentioned in the introduction – is to identify the sources of scholarly information used by Polish humanists, theologians and scientist-artists and to refer them to the findings of a similar analysis concerning sciences and social sciences.

The Polish continuation of the Harbingers project uses the same methodology, with longitudinal interviews as its main part, i.e. annual conversations with the same respondents in groups of twenty people in each of the eight countries. This helps to observe changes in the attitudes and behaviour of individual early career researchers and to compare them within countries, sexes, professional status and within time intervals.

The core of the questionnaire used by the Harbingers researchers has actually been the same in eight countries since 2016, and minor modifications have been introduced in response to external factors, such as the Covid-19 pandemic. This questionnaire is described in a different publication (Świgoń, Nicholas 2023), but it is noteworthy that it consists of five main parts: 1) an introduction, with reference to the status and role of the respondents, 2) scientists' reputation, 3) general communication practises, 4) authorship and publishing, and 5) scientific communication transformations (a total of more than 50 questions).

This paper focusses on a fragment of data gathered from the interviews, particularly the third part on methods of searching and discovering scholarly information. A qualitative analysis was performed of the responses given by Polish respondents – humanists, theologians and scientists-artists during the first round of interviews in 2023 (a second round is planned for 2024). Several of the early career researchers' responses were characterised and quoted while maintaining anonymity. The responses concerned:

- searching for scientific publications and other content, materials needed for scientific and artistic activities;
- identifying and overcoming difficulties in access to the scientific literature;
- methods of using a smartphone in communication and in scholarly work.

The group of respondents in the Polish continuation of the international projects (NSC grant No. 2022/45/B/HS2/00041) comprises 25 individuals in 3 areas, i.e., humanities (14 respondents), theology and related sciences (5 respondents) and art (6 respondents). These three areas represent nearly all component disciplines, except two (biblical studies as well as ethnology and cultural anthropology) identified in the Polish science classification (*Rozporządzenie...*) at the end of 2022 (i.e. after the grant application was filed with the NSC).

Thus, the Polish group of humanists includes representatives of linguistics, literary studies, history, archaeology, philosophy, science of culture and religion, science of art, and Polish studies. The absence of ethnology and cultural anthropology on this list is recompensed to some extent by the fact that one of the respondents had just become a master of this branch of humanities. All theologians, including three priests, represented theological sciences. Meanwhile, the field of art included representatives of all three component disciplines, i.e., film and theatre, music arts as well as fine arts and conservation.

The choice of the respondents was random-purposeful because although there were as many component disciplines as possible, only individuals who gave their consent were included in the group. The names of early career researchers were searched for in the RADON database (<https://radon.nauka.gov.pl/dane/nauczyciele-akademiccy-badacze-i-osoby-zaangazowane-w-dzialalnosc-naukowa>), which contains information on doctors and the dates of obtaining the title, as well as on the place of work and on the declared discipline. Subsequently, the email addresses of the individuals meeting the specified criteria (a specific discipline and the doctorate obtained not earlier than seven years before the interviews started) were searched on the web. In addition to the RADON database, respondents were searched on the

websites of specific universities, including their doctoral schools. A similar procedure was applied in the previous Harbingers projects, i.e., respondent groups of over twenty people were formed in each of the eight countries according to the adopted assumptions, i.e. the purposeful choice of the disciplines and the duration of work after the doctorate. The age criterion was of secondary importance. Thus, the group of early career researchers includes individuals in their twenties, thirties and forties.

It appears that the researchers in the Polish continuation of the Harbingers project succeeded in creating a representative group of 25 early career researchers in three fields covered by the NSC project, considering not only the component disciplines but also their sex and status. The respondent group comprises 15 women and ten males from universities throughout the country, including 19 doctors and six people before a doctorate.

The following part presents detailed responses obtained in the first round of interviews conducted in spring 2023 with 25 Polish respondents from the three fields. They are broken down into groups of humanists, theologians and artists to demonstrate similarities and differences in the behaviour of humanists and theologians, who – according to the old Polish classification – were included in one field of humanistic research, and scientist-artists, who are subject to the ministerial and institutional evaluation of their artistic achievements, similar to an evaluation of scientific achievements (score evaluation). The analysis of the findings is qualitative nature, and the responses of the participants were thematically grouped. Numerical (and percentage) data is occasionally provided on the number of mentions of a specific topic (a specific name or term).

First, methods and places are described for searches for scientific publications and other content, materials needed for scientific and artistic activities. The second part of the findings was devoted to the use of smartphones in scholarly communication.

### **3. Study findings**

As in previous studies conducted with researchers in sciences, it was found that humanists, theologians and artists found Google and Google Scholar search engines to be very helpful in searching for scholarly information. These names appeared altogether 25 times in the responses given by 18 participants (72% of the entire group). The humanists also mentioned Google Books, which appeared rather sporadically in responses of researchers in sciences, but it did appear in responses given by early career researchers in social sciences, including young economists and pedagogues. The second place – after Google products – in responses from humanists, theologians and artists was occupied by library catalogues, which were mentioned by 14 respondents (56%).

The following are several responses from **humanists** presenting their search strategies, including Google products.

*When I look for literature, I start with Google – both the search engine and Google Scholar. If I don't find important publications, I use NUKAT (the central catalogue of*

*several dozen Polish libraries). These are my two main sources of scientific information.* [linguistics]

*Google, Google Scholar, and library catalogues. Polish publications are usually available in my university's library.* [archaeology]

*Sometimes I know which book/article will be the starting point for me. If I don't know where to start, I start with Google, followed by Google Scholar.* [science of culture and religion]

Some humanists mentioned various names of bibliographic full-text databases, names of digital libraries and international catalogues. For example, the following names appeared in responses given by historians – both doctors and doctoral students: *Science Direct; WorldCat, SCIRUS; BASE* and Polish names: *Federacja bibliotek Cyfrowych, Polona, Wielkopolska Biblioteka Cyfrowa, szukajwarchiwach.pl*; a philosopher mentioned the Springer base.

Bibliographies and periodicals websites are other important places for humanist information searches.

*I search Polish bibliographies – both electronic and in paper form (Polska Bibliografia Naukowa [Polish Scientific Bibliography], Polska Bibliografia Literacka [Polish Literary Bibliography]).* [literary studies]

*PhilPapers search engine, Archive.org resources, and websites of specific periodicals, which I follow all the time, then I use the bibliographies provided under articles.* [philosophy]

The respondents–humanists also start their search with online versions of specialist encyclopaedias, which were not mentioned by researchers in sciences in earlier Harbingers studies. A Philosophy Doctor mentioned an unspecified encyclopaedia of philosophy, and a Doctor of Art – mentioned an encyclopaedia of theatre, and Wikipedia was also mentioned.

Humanists employ a unique practise of starting their search from libraries, i.e. looking for information in their actual collections, which was mentioned by historians, literary studies experts, and the Polish studies experts mentioned below:

*First, I search archives, for example, the Archive of Modern Records, the National Library archive, and university libraries with manuscript collections. This is what historians do rather than Polish studies experts, but this is a consequence of the subject matter I deal with. I also use Google Scholar and various internet databases, but then I have to go to the archive to collect the materials all the same. And this is good because it allows me to get interesting results.* [Polish studies]

Social media as a starting point or an important place for discovering scientific information appeared three times, twice in the science of culture and religion and once in the science of art. Those references included mentions of Instagram, Facebook and YouTube. One of the respondents added that, being a supervisor of diploma theses, he encourages students to quote video essays if they provide exact bibliographic data.

Early career humanists also mentioned approaching their scientific colleagues or directly asking librarians or archivists for help in searching for literature.

Several people mentioned the unavailability of the materials they needed. An archaeologist mentioned an inter-library loan and “other platforms” as a way to overcome those difficulties. They probably included alternative services, such as

Academia.edu and Research Gate, whose names are mentioned, for example, by a philosopher.

Two individuals mentioned an illegal platform named SciHub.

*If something is difficult to come by, I use SciHub, Libgen, Z library.* [science of culture and religion]

*I use Sci-Hub very often, if it wasn't for this pirate website, I couldn't get access to scientific literature, I wouldn't have a career in science.* [philosophy]

The last of the responses is significant for overcoming barriers to getting access to information in the world of science. The interviews conducted by this author with researchers in science show that they are afraid to admit to using illegal sources, but they mention their names quite often all the same.

This part of the study findings will end with responses given by humanists, which show that there is no problem with access to sources, i.e., that the resources of Polish libraries are sufficient.

*I mainly use Polish scientific literature in my research work. I use foreign literature very rarely. In general, I don't complain about access to the literature; I can find most of it on the internet or in a local library. I encounter problems with the availability of the literature that I need only sporadically.* [linguistics]

*I don't recall a situation in which I couldn't lay my hands on a full text that I'm interested in.* [science of culture and religion]

**Theologians'** responses are close to those given by humanists, probably because of the similarity of the scientific toolkit of those fields of science, which were placed in one area of humanities in the Polish classification of sciences before 2018.

Thus, the theologians participating in the study first mentioned the Google search engine and Google Scholar, followed by library catalogues and online databases accessible at university libraries.

*I search online resources of our university library by subject, i.e. both the library collection catalogue and the databases for which we have a licence. I browse through bibliographies in books.*

One of the priests mentioned other personal resources and trips to libraries in other towns.

The issue of the absence of any problems with accessing the necessary literature also emerged.

*I have never encountered a situation in which I couldn't find the full text that I needed; the collection of our university library is huge.*

The doctor of theology mentioned specific names of databases and websites of foreign publishing houses and libraries: *Scopus, the search engine for Cambridge and Oxford publishers, and library catalogues in various countries.*

It should be noted that this was the only time Scopus was mentioned in any of the 25 interviews. Likewise, the name of the Web of Science was also mentioned only once (by a doctor of linguistics). It is a feature distinguishing Polish humanists, theologians and researchers in art from early career researchers in sciences in the Harbingers projects.

**Researchers in art** obviously also use internet resources, although the name of the Google search engine as the starting point for the scientific literature search appeared only in one response, and the name of Google Scholar did not appear at all.

*Netography used to be treated with reserve (only books counted), but now it's the basic method for searching in my field. When working simultaneously on a book and on an article, I use mainly internet resources and the pdf files that I find there. [film studies]*

*There are many platforms with quality films, websites with film analyses, obviously, books, and articles. [film studies]*

*Google, Wikipedia and references to scientific papers provided there [fine arts]*

Some researchers mentioned bibliographic guidelines taken from published texts.

*Sometimes, inspiration and bibliographic guidelines are provided in one book and references to scientific publications (...) I combined scientific medical literature with the visual work of various artists. [fine arts]*

Other methods of searching for information employed by artists writing scientific texts include *library websites* [music], *full-text databases shared by university libraries*, here, the name of JStor was mentioned [film], *artistic universities' websites* [fine arts], *publishers' websites: Karakter, Phaidon, Taschen* [fine arts].

One respondent artist mentioned the need to pay a fee for accessing the full text of an article:

*When access is difficult, I purchase it with my own money, earlier, for example, from my doctoral scholarship. [fine arts]*

It must be explained at this point that only some artists-researchers write scientific articles and monographs, while others write comments on works of art, which are required for Polish doctorates and habilitations. It so happened that four out of the six artists in the group of respondents were authors of scientific articles and monographs, and they were representatives of the three disciplines of art. However, its representatives are usually given marks for artistic achievements, which are subject to the ministerial score evaluation, such as articles and monographs. Therefore, it is not surprising that only one artist – a representative of film studies – mentioned Research Gate. None of the artists mentioned Sci-Hub.

The responses given by the artists contained proper names of various specialist services and platforms typical of a specific type of art. The following are mentioned: *Grove Music Online, Naxos Music Library* [music studies], *awards and publications Graphis.com, Polish design quarterly 2+3D, design service Behance.net, websites for artists ArtConnect, GraphicCompetitions.com* [fine arts], *Shodeck* [film studies]. Some of them also mentioned popular social media as sources of inspiration and information, e.g. Instagram and Facebook, various art contests and festivals, as well as podcasts about art.

Obviously, *conversations with colleagues from other universities and other countries* [fine arts] and one's own collections can be an important source of information: I have quite a lot of visual materials, which I've been collecting for years, stashed in various folders on my computer. [fine arts]



As noted in the introduction, the interviews conducted for the Harbingers project (since 2016) showed that **smartphones** were used to search for scientific information occasionally, although not by all respondents and with various intensities in different countries.

The Polish continuation of Harbingers projects also contained questions about technical preferences when searching for and reading scientific texts and the mobile applications used for scientific communication. Like in sciences and social sciences, the computer was definitely indicated as the basic tool used in information search, internet browsing and reading full texts in humanities, theology and art – this response was given by 19 out of the 25 respondents (76%).

Examples of young humanist responses are quoted below.

*I definitely (use) a computer. I have no application on my smartphone which I could use to search for or read full scientific texts. [history]*

*I usually use my computer to read full texts because I often deal with old prints and reprints (...) – a smartphone would not be a convenient tool. [literature studies]*

*I read mainly on my computer because a considerable number of the publications that I need have been digitised, but I use paper copies equally often – mainly in the case of dictionaries or monographs. [linguistics]*

The latter quotation mentions using printed versions of monographs. Other respondents – humanists – also stressed that they liked contact with a paper book. They also mentioned restricting their use of a smartphone consciously, even in their free time.

*I rather read on a computer or a tablet. I rarely use a smartphone for this purpose, I try to reduce its use. I like reading paper books best. [Polish studies]*

*I don't use a smartphone to read. I'd rather print the text I'm going to read or read on a computer. I use Google Maps to find a library in a strange town. [philosophy]*

Only one respondent in the humanist group stood out in this respect.

*I have an unbreakable bond with my smartphone, I use it very often, and I use it to read full texts. [science of culture and religion]*

The humanists, when asked about the applications installed on their smartphones, usually mentioned communicators, such as Messenger, WhatsApp and Skype. They mentioned Twitter, FB and Instagram less frequently. When it comes to their teaching work, they mentioned the USOS and MS Teams. Here are some examples.

*I have WhatsApp (...). I also have Teams – I still use it although classes in their traditional form have returned, the university staff portal, teacher's portal. [Polish studies]*

*Web browser, Usos, Skype, Teams, Messenger (not for scientific purposes). [history]*  
*I have the following apps on my smartphone: Outlook, LinkedIn, MS Teams, Messenger, WhatsApp, Instagram, and Facebook. [science of culture and religion]*

*I have the following apps on my smartphone I use for teaching: Google Spreadsheets, Amazon Kindle, Canva, Google Classroom, and Discord, and for learning: Legimi, Teams, Zoom, Powerpoint. Messenger, Twitter, Mastodon and Google Chrome. [science of culture and religion]*

It may be a coincidence that the two quoted researchers (both the doctoral student and the doctor) represented the science of culture and religion, but it may testify to a specific nature of the discipline introduced to the Polish classification of sciences in 2018, in fact by combining typically humanistic disciplines with social sciences, close to medial studies, bibliology and information science.

The **theologians** participating in the study preferred to read full texts on a computer. They also mentioned their passion for paper books. They used mainly communicators on their smartphones, of which WhatsApp was the most frequently mentioned.

*I mainly use my computer, and it's more convenient. On my phone, I use mainly the Google search engine and WhatsApp to communicate with others.*

*I don't use a smartphone to read, I like to print and make notes on the printout, or I read on a computer.*

*Yes, I read full texts on my phone. I have Outlook and Word on my smartphone, which gives me access to my mail and text documents.*

Representatives of different **fields of art**: film, music and fine art mentioned various tools and applications on their phones more frequently than the humanists and theologians quoted above. They used these applications in their everyday work and various professional activities, depending on their specialisation.

*I use my smartphone as an auxiliary work tool. I make artistic notes on it – I take photos and films with it, I write on it a lot, for example, inspirations and texts, and I look for good film frames. On my smartphone, I have a lot of pre-shooting documentation, records of rehearsals, and location documentation. [film studies]*

*Facebook, Messenger, WhatsApp, YouTube, Metronome online. [music studies]*

*Messenger, Teams, Skype, car navigation, Discord, applications with AI, sound players, video. [fine arts]*

The specific nature of artistic activity requires proper applications on the telephone. Respondents-artists willingly described appliances on their smartphones.

*There are many smartphone applications which are used as tools in our specialisation, for example, Sun Seeker (it imposes the sun's trajectory on an image from the smartphone camera, taking into account a possible date change, which makes it possible to plan the scene lighting for many months ahead), Artemis Pro, an example "viewfinder", which is a tool used for selecting the focal distance for an objective. [film studies]*

*Applications on my smartphone include: Messenger, WhatsApp, Instagram, Facebook, Teams, camera. (...) The street is an important place for my observations, and I watch artistic works on a computer. The smartphone is too small. [fine arts]*

*Actually, on my smartphone, I have all the tools that I use. These are tools and applications that I use during rehearsals in the music group and in classes with students. These include a dictation device, metronome, tuner (for tuning instruments), and a collection of real books (recorded chords and form of music pieces, no notes).*

*Everyone brings their smartphone to the jam session, enters the standard, and we play. [music studies]*

It was typical for artists, like humanists and theologians, that they mentioned printing texts for reading.

#### **4. Discussion**

It was observed in the representative sample in Poland that humanists and theologians basically used the same starting points for their search for the literature on the subject as the representatives of sciences and social sciences. Google and Google Scholar appear to occupy the top place on the list of information sources in many areas. This is mainly about sharing pdf files, irrespective of the place where a text has been indexed. The respondents – researchers in sciences also pointed to giving the numbers of citations of various indexed documents. In this context, it is noteworthy that the Polish humanists, theologians and artists did not mention the citations but only the convenience of using Google tools.

The respondents mentioned library catalogues and various (bibliographic and full-text) online databases frequently shared on university library websites. The names of Web of Science/Scopus were mentioned only sporadically, whereas the respondents from sciences and social sciences talked about them widely and regarded them as the most important places for discovering scholarly information.

According to the findings of the Harbingers projects, what distinguishes humanists and theologians from other scientists is that they start their searches with traditional library collections and the catalogues of their university library. Moreover, this library sometimes satisfies all the needs of humanists and theologians, which was never the case among representatives of sciences or social sciences.

In light of earlier international analyses, the role of libraries in providing resources was slightly complicated – they appeared invisible in the responses of researchers in sciences. Polish humanists and theologians appreciate the importance of libraries and archives in scientific communication more than representatives of other fields of science. Library and archive searches are one of the basic sources of scientific information for them.

Polish university libraries are often responsible for creating repositories at a specific school. Thus, some humanists and theologians pointed to so-called knowledge databases in their universities. Sometimes, these are only bibliographic databases containing publications of the specific university's staff, but some Polish universities boast full-text repositories. However, it is significant that our respondents in all fields of art, i.e. in the present and previous Harbingers projects, mentioned repositories mainly in response to direct questions.

If the Polish respondents encountered problems with access to full texts, which was not a common thing, like with sciences, then they mainly used alternative sources (Academia.edu, Research Gate), including illegal ones (Sci-Hub). The findings of earlier studies of the Harbingers team proved the popularity and widespread use of alternative services among young researchers in the sciences and social sciences, including Polish ones. Obviously, the Covid-19 pandemic contributed to the propagation of these services (Herman et al., 2023; Nicholas et al., 2022), although it had also been used in these circles before the pandemic (Nicholas et al., 2017, 2019). Searching Sci-Hub was mentioned during the

pandemic in over 70% of the responses given by Polish representatives of sciences and social sciences, and the Research Gate – in over 42 responses, which (combined) was proof of the considerable popularity of these alternative services in these circles.

Although the Polish humanists mentioned Sci-Hub rarely, a statement of one of the respondents (that it is not possible to be successful in science without this tool) makes one reflect and encourages further studies in this regard.

Scientists-artists used the term “internet resources” rather than “Google”, and the name “Google Scholar” was not mentioned even once. This shows the specificity of a field of art and the fact that publications in it are rather rare, although some respondents could boast the authorship of articles and scientific monographs.

The latter is of special importance among humanists, theologians and scientists-artists. Most of all, they are the main effects of scientific, and sometimes scientific-artistic, activities, often more important than scientific articles. One of the humanists summarised this with these words: a book is a book. Moreover, monographs provide inspiration for further studies, and the bibliographic references provided in them are often good starting points for searching for the literature on the subject.

In nearly all the responses, the humanists, theologians and artists expressed their preference for reading full texts on a computer rather than on a smartphone. This specific group of respondents liked to read paper copies not only of books but also of scientific articles. They often mentioned printing a text for reading.

Given the findings of the earlier Harbingers projects, smartphones were used less frequently than expected and primarily for communication with popular communicators. Of the seven countries, they were used the most frequently in China – for searching for and reading articles. Overall, half of the total number of respondents from various countries searched for information on their smartphones (Nicholas et al., 2017). Similarly low indices were observed among Polish respondents before the pandemic (Świgoń, Nicholas, 2021). A considerable increase in smartphone use for scientific purposes was not observed until the pandemic, which was confirmed in the international Harbingers 2 project (Jamali et al., 2023).

Polish research also showed that scientists-artists stand out among representatives of other fields, not only humanists and theologians, regarding the number and diversity of applications on their smartphones. Depending on their field of art, they use many tools available in modern smartphones in their everyday creative work with sound, image or film.

## **5. Conclusions**

This paper presents methods and places for scholarly information search by Polish researchers in three fields: humanities, theology and art, which were not analysed in the previous Harbingers projects in eight countries. The group of researchers in these fields proved to be highly diverse in terms of their information-related attitudes and behaviours. They include individuals who avoid social media and those for whom these services provide daily inspiration

in their creative work. Some researchers are satisfied with the collection of their local library, and there are others who could not follow their career path without access to Sci-Hub. Some researchers use only the literature in Polish, while others only read foreign publications. For some, a smartphone is a necessary tool in their daily professional activity, while others use it only for communication. Nevertheless, a monograph as an effect of scientific considerations is highly valued in all three fields, which distinguishes this group from the representatives of other sciences who were questioned earlier. Appreciation of libraries in scientific communication, which was nearly absent among researchers in science, is another determinant.

The most important limitation of the study is not a very large research sample and coming from only one country. It would be desirable if other countries could join this analysis. Nevertheless this analysis provides a general orientation in consideration of the methods and places for information search by beginner researchers in three fields: humanities, theology and art. The group of Polish respondents is too small to extrapolate the findings to the whole population of representatives of several disciplines in the country, let alone the global population of humanists and scientists-artists. However, these results are of extrapolatory value and they may be helpful in designing future international analyses performed by researchers other than the Harbingers research team.

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### **Open Data**

Świgoń, Marzena (2023). Poszukiwanie i odkrywanie informacji naukowej przez badaczy na wczesnym etapie kariery w naukach humanistycznych, teologicznych i artystycznych, <https://doi.org/10.18150/7PML9C>, RepOD.

### **References**

- BOAI20 6. The Budapest Open Access Initiative: 20th anniversary recommendations. Access date 22.06.2023 available at <https://www.budapestopenaccessinitiative.org/boai20/>
- Borrego, Á., Anglada, L. (2016). Faculty information behaviour in the electronic environment: Attitudes towards searching, publishing and libraries. *New Library World*, 117(3/4): 173– 185. doi:<http://dx.doi.org/10.1108/NLW-11-2015-008>
- Herman, E.; Nicholas, D.; Clark, D.; Boukacem-Zeghmouri, Ch.; Rodríguez Bravo, B.; Abrizah, A.; Sims, D.; Watkinson, A.; Xu, J.; Serbina, G.; Świgoń, M.; Jamali, H. R.; Tenopir, C. Allard, S. (2023). Outside the library: early career researchers and use of alternative information sources in pandemic times, *Learned Publishing* early view: <http://doi.org/10.1002/leap.1522>

- Jamali, H. R.; Nicholas, D.; Sims, D.; Watkinson, A.; Herman, E.; Boukacem-Zeghmouri, Ch.; Rodríguez-Bravo, B.; Świgoń, M.; Abrizah, A.; Xu, J.; Tenopir, C.; Allard, S. (2023). The pandemic and changes in early career researchers' career prospects, research and publishing practices. *PLoS ONE*, 18(2): e0281058. <https://doi.org/10.1371/journal.pone.0281058>
- Nicholas, D., Boukacem-Zeghmouri, Ch., Rodríguez-Bravo, B., Xu, J., Watkinson, A., Abrizah, A., Herman, E., Świgoń, M. (2017). Where and how early career researchers find scholarly information. *Learned Publishing*, 30(1): 19-29.
- Nicholas, D.; Boukacem-Zeghmouri, Ch.; Xu, J.; Herman, E.; Clark, D.; Abrizah, A.; Rodríguez Bravo, B.; Świgoń, M. (2019). Sci-Hub: The new and ultimate disruptor? View from the front. *Learned Publishing*, 32(2): 147-153.
- Nicholas, D.; Herman, E.; Boukacem-Zeghmouri, Ch.; Watkinson, A.; Sims, D.; Rodríguez Bravo, B.; Świgoń, M.; Abrizah, A.; Xu, J.; Serbina, G.; Jamali, H. R.; Tenopir, C.; Allard, S. (2022). Early career researchers in the pandemic-fashioned 'new scholarly normality': voices from the research frontline. *Profesional de la información*, 31(5)5, e310510. <https://doi.org/10.3145/epi.2022.sep.10>
- Rozporządzenie Ministra Edukacji i Nauki z dnia 11 października 2022 r. w sprawie dziedzin nauki i dyscyplin naukowych oraz dyscyplin artystycznych [Ordinance of the Minister of Education and Science of October 11, 2022 on scientific fields and disciplines and artistic disciplines] <https://isap.sejm.gov.pl/isap.nsf/download.xsp/WDU20220002202/O/D20222202.pdf>
- Spezi, V. (2016). Is information-seeking behavior of doctoral students changing? A review of the literature (2010–2015). *New Review of Academic Librarianship*, 22(1): 78– 106. doi:<http://dx.doi.org/10.1080/13614533.2015.1127831>
- Świgoń M.; Nicholas D. (2021). Komunikacja naukowa w oczach polskich młodych naukowców w świetle międzynarodowych badań ankietowych z 2019 roku. *Media – Kultura – Komunikacja społeczna*, 17: 11-25.
- Świgoń M.; Nicholas D. (2023, *in press in both: Polish and English*), Komunikacja naukowa badaczy na wczesnym etapie kariery – organizacja międzynarodowych badań z udziałem Polaków oraz ich polskiej kontynuacji. / Scholarly communication of early career researchers – organisation of international research with the participation of Poles and its Polish follow-up. *Media – Kultura – Komunikacja społeczna*, 19.
- Świgoń, M.; Nicholas D. (2017). Postawy i zachowania młodych naukowców – doniesienie z pierwszego etapu badań międzynarodowych, ze szczególnym uwzględnieniem polskich respondentów, *Zagadnienia Informacji Naukowej - Studia Informacyjne*, 10.36702/zin.371, 55, 2(110): 156-170.
- Wolff, C., Rod, A. B.; Schonfeld, R. C. (2016a). Ithaka S+R US faculty survey 2015. New York, NY: Ithaka S+R. Retrieved from <http://sr.ithaka.org/?p=277685>
- Wolff, C., Rod, A. B.; Schonfeld, R. C. (2016b). UK survey of academics 2015: Ithaka S+R|Jisc|RLUK. Retrieved from <http://www.sr.ithaka.org/publications/uk-survey-of-academics-2015>.