The Canadian Journal of Information and Library Science
La Revue canadienne des sciences de l'information et de bibliothéconomie

An Investigation of Current Research Support Services in Hungarian Academic Libraries

Habtamu Dessa ⓘD et Erzsébet Dani ⓘD

Citer cet article

Résumé de l'article

Traditionally, librarians were more concerned with issues such as the acquisition and organization of library collections, as well as searching and retrieving information for researchers. However, since the introduction of the Internet in the 1990s and advance in ICT, academic library became more concerned with scholarly communication, than searching and retrieval services. This study explores the current practices of research support related to open access, bibliometric and research data management services offered in Hungarian academic libraries. The study applied both qualitative and quantitative research method. Primarily, we analysed websites of ten selected Hungarian academic libraries and detail content analysis of the websites was conducted from 1 July to 30 October 2023. Our investigation shows that, Hungarian university libraries are currently offering broad range of research support services to academic community beyond the traditional research support. Mainly, Hungarian academic libraries have strong culture of open access support to facilitate knowledge transfer. However, from library home page of respective universities, we observe that the practice of bibliometric and research data management services is at its infancy. From website analysis, currently very few of Hungarian university libraries were offering bibliometric and research data management services to academic community.

An Investigation of Current Research Support Services in Hungarian Academic Libraries

Habtamu Dessa [iD] and Erzsébet Dani [iD]
University of Debrecen, Hungary

Traditionally, librarians were more concerned with issues such as acquiring and organizing library collections and searching and retrieving information for researchers. However, since the introduction of the Internet in the 1990s and advances in ICT, the academic library has become more concerned with scholarly communication than searching and retrieval services. This study explores the current practices of research support related to open access, bibliometric, and research data management services offered in Hungarian academic libraries. The study applied both qualitative and quantitative research methods. Primarily, we analyzed the websites of ten selected Hungarian academic libraries, and a detailed content analysis of the websites was conducted from 1 July to 30 October 2023. Our investigation shows that Hungarian university libraries offer a broad range of research support services to the academic community beyond traditional research support. Mainly, Hungarian academic libraries have a strong culture of open access support to facilitate knowledge transfer. However, from the library home pages of respective universities, we observed that the practice of bibliometrics and research data management services is in its infancy. According to website analysis, currently, few Hungarian university libraries are offering bibliometric and research data management services to the academic community.

Keywords: academic Library, Open Access, bibliometric service, research data management

Introduction

Traditionally, librarians were more concerned with issues such as acquiring and organizing library collections and searching and retrieving information for researchers (Åström & Hansson, 2013; Forsman et al., 2003). The introduction of the Internet in the 1990s and advances in Information Communication Technology (ICT) brought new trends and a new model of scholarly communication that engaged academic libraries beyond traditional roles in research support (Forsman et al., 2012). Nowadays, academic libraries are offering numerous research supports in scholarly communication beyond the traditional searching and retrieving services (Åström & Hansson, 2013; Corrall et al., 2013; Tenopir et al., 2013). Literature reveals that, in the last two decades, academic libraries in Europe, the UK, Australia (Corrall et al., 2013) and North America Fu 2020; Tenopir et al., 2013) are offering research support services such as open access, institutional repository, bibliometric (Ball & Tunger 2006; Åström & Hansson, 2013) and research data management service to the academic community(Perrier and Barnes 2018; Tenopir et al. 2013b; Cox and Pinfield 2013). With the advances in ICT and the Internet, several factors forced academic libraries to move beyond traditional research support services (Forsman et al., 2003).

First, the growth of scientific literature (Larsen & von Ins, 2010) and everchanging scholarly communication challenged academic libraries to find new approaches to fulfill the information needs of researchers (Corrall et al., 2013). Since the birth of modern scholarly communications, the number of publications and journals has grown increasingly, and prices of journal subscriptions also increased more rapidly than library budgets (Prosser, 2004a). Due to this, academic libraries could no longer afford to purchase core journals researchers need. This led to a decline in journal subscriptions followed by continued increased prices from commercial publishers eventually leading to more cancellations (Prosser 2004). Then the "birth of Open Access" become a turning point in scholarly communication(Guerrero 2008). Open access (OA) has become more popular in scientific publications than traditional ones (Cullen & Chawner, 2011). For detail, we referred reader (Prosser 2004) "how open access repositories and journals will transform scholarly communications".

Second, the increasing importance of research evaluation which emerged as a trend since the beginning of 2000 (Tavernier & Jamieson, 2022; Bladek, 2014; Ball & Tunger, 2006). Study shows that universities, research institutions, and research funding bodies are speculating to recognize the impact of their fellow researchers using quantitative analysis.

With the ever-changing scholarly communication landscape, the notion of research evaluation using bibliometric analysis has become a new role in academic libraries (Bladek, 2014; Ball & Tunger, 2006). For the past several decades, the application of bibliometrics was limited to library collection development mainly the selection of journals for subscription. However, in the last two decades, bibliometrics has become an important tool for evaluating the research performance of individual researchers(Abernethy & Holderied, 2018), research units, or institutions (González Alcaide & Gorraiz, 2018).

Thirdly, the increasing demand for research data management plans to fulfill funding bodies and publisher requirements (Perrier & Barnes, 2018; Xu, 2022; Cox & Pinfield, 2013; Corrall et al., 2013) is another factor for the development of new research support services in academic libraries. Research funding bodies have recognized the importance of infrastructure and services to organize and preserve research data (Kaiponen 2016), and academic libraries have been identified as locations on which to base these research data services (RDS) (Tenopir et al., 2013a). Currently, measuring research on social media coverage is also attracting the attention of researchers in Library and Information Science (Erdt et al. 2016).

Literature shows that investigation of current research support in academic libraries has been done in North America, the UK, Australia, and other European countries (Corrall et al., 2013; Drummond & Wartho, 2016; Gumpenberger et al., 2012; Leiß, 2017). The result shows that research support related to OA, bibliometrics, and research data management services are offered in several academic libraries in the above-mentioned countries (Powell and Elder 2019). Hence, this study investigates the current research support services offered in Hungarian academic libraries. Based on a review of related literature, we primarily analyzed the websites of selected Hungarian University libraries about the current research support offered to the academic community. The following are the research objectives that the study is going to achieve:

1. Explore the library homepages of selected universities to see if they contain substantial information about OA, bibliometric services, and research data management services.

2. Examine details and clear guidance about current research support offered to researchers and visitors to the website.

3. Identify which research support services are broadly offered across Hungarian academic libraries.

4. Suggest further study that fills the gap and strengthens the provision of contemporary research support offered in academic libraries.

Literature Review

Research support related to OA and institutional repositories (Crow, 2002; Cullen & Chawner, 2011; Prosser, 2004; Chan & Martens, 2007; Guerrero, 2008), Bibliometrics (Ball & Tunger, 2006; Bladek, 2014; Leiß, 2017b; Abernethy & Holderied, 2018; Forsman et al., 2003) and Research Data Management services (Corrall et al., 2013; Cox & Pinfield, 2013; Bishop et al.,, 2022; Ashiq et al., 2022; Fu, 2020; Tenopir et al., 2013), offered in academics were discussed for the last two decades. Most recently, the practices of bibliometrics and research data management services in academic libraries have attracted the attention of Library and Information Science professionals and practitioners. In this section, we will review related literature on OA, bibliometrics, and research data management services concerning academic libraries.

(Cullen & Chawner, 2011) studied Institutional Repositories, OA, and Scholarly Communication: 'A Study of Conflicting Paradigms'. The paper discussed the OA movement of the first decade of the 21st century (Guerrero, 2008) and institutional repositories developed by universities and academic libraries as a part of that movement, which has openly challenged the traditional scholarly communication system (Cullen & Chawner, 2011). The study described the survey findings from eight New Zealand universities and some larger polytechnics and technical institutes, which highlights the conflict between the principles and rewards of the traditional scholarly communication system and the benefits of OA (Cullen & Chawner, 2011). The authors also examined the growth of institutional repositories worldwide and summarized a growing body of evidence of the response of academics to institutional repositories. Finally, the study suggested ways academic libraries can alleviate the conflict between these two paradigms(Cullen & Chawner, 2011). For details on OA and Institutional Repositories (Cullen & Chawner, 2011; Prosser, 2004; Chan & Martens, 2007; Crow, 2002).

Corrall et al. (2013) conducted a study to investigate and illuminate issues surrounding the development of research services related to bibliometric support and research data management in the academic libraries of Australia, New Zealand, Ireland, and the United Kingdom. Regarding bibliometrics, researchers identified types of bibliometrics services such as training/bibliometrics literacy, citation reports, calculations of research impact, grant application support, evaluation of candidates for recruitment, promotion, or tenure, disciplinary research trend reports, and h-index calculations (Corrall et al., 2013). Finally, in their finding, most university libraries in each country offer some bibliometrics services like bibliometrics training or literacy, followed by citation reports and calculation of research impact. However, evaluation of candidates for recruitment, promotion, or tenure and disciplinary research trend reports were services less frequently offered

during the study period. As to Research Data Management (RDM) service, researchers also identified a broad range of RDM services, including data literacy education and/or training, assistance to use available technology, guidance on the management of research data, support for data deposit in an institutional repository, support for data deposit in external repositories or data archives, finding relevant external data sets, technical aspects of digital curation, developing data management plans, developing tools to assist researchers manage their data and development of institutional policy to manage data (Corrall et al., 2013). The study showed that fewer libraries in specified countries were offered RDM services. However, U.K. libraries offered support assistance with technology, infrastructure, and tools and finding external datasets offered more strongly with a higher proportion than other countries during the study period. Finally, Corrall et al. (2013) identified that RDM services represent a relatively new development in library service offerings, which is evident in the high proportion of libraries in the process of planning to offer RDM support. Whereas, in the case of bibliometrics, most libraries in all four countries offered bibliometric services (Corrall et al., 2013).

Drummond & Wartho (2016) studied a topic focused on bibliometric service in academic libraries, particularly at the University of New South Wales (UNSW). The researchers emphasized bibliometrics as a new support service to measure the impact of publications, authors, and departments at the University of New South Wales UNSW). The researchers discussed the restructuring of the UNSW Library and adopting a business model (Drummond & Wartho, 2016). The purpose of the restructuring was to increase the flexibility of service development and delivery and then improve research support offered to researchers. The focus of bibliometric services discussed in (Drummond & Wartho, 2016) was to provide valuable information for individual promotion, grant application statements, and institutional comparison.

Leiß (2017) also conducted research entitled 'Engaging in Performance Measurement: Introducing bibliometric Services at the Technical University of Munich (TUM)'. As discussed in the study, bibliometric service was introduced at TUM Library in October 2015 to support researchers, university administration, and university leadership (Leiß, 2017). The researchers outlined the major Library's bibliometric service portfolio at TUM consists of training on visibility and impact of research, bibliometric analyses on request, and bibliometrics and impact consultation service. The author further elaborated that seventeen months later, in the bibliometrics service at TUM, more than 95% of requests came from almost all departments (Leiß, 2017). Similarly, work on bibliometric services in academic libraries has been conducted by LIS professionals and practitioners (Abernethy & Holderied, 2018; Gumpenberger et al., 2012; Bladek, 2014; Sun, 2015). Cox & Pinfield (2013) reported the results of a survey covering

higher education libraries in Australia, Canada, Germany, Ireland, the Netherlands, New Zealand, and the UK. The study aimed to understand research data service developments and their maturity in academic libraries (Cox & Pinfield, 2013). The results showed that libraries in surveyed countries had provided leadership in RDM, mainly in advocacy and policy development (Cox & Pinfield, 2013). Service development was limited to advisory and consultancy services (such as data management planning support and data-related training) rather than technical services (such as the provision of a data catalogue and curation of active data) (Cox & Pinfield, 2013).

Xu (2022) conducted a scoping review which examines research data management best practices and empirical studies in academic libraries between 2010 and 2021. The researcher identified 101 articles that discussed the research data management service. Most of the studies were from the United States of America (69.31%), followed by Australia (5.94%) and the UK (4.95%). The scoping review shows that among the 101 articles included, approximately 26.73% covered data sharing, including data curation, data preservation, and data repositories, 6.93% of articles addressed data management plans, 3.96% of articles researched RDM tools and technologies, 1.98% of articles discuss data visualization and analysis, and article studied data collections account 0.99%. The remaining 59.41% of articles studied mixed aspects of RDM (Xu, 2022). Finally, the researcher identified that the demand for RDM training increased significantly since 2011. Research about RDM training spread across countries and continents, including North America, Europe, and Asia Pacific countries (Xu, 2022).

From the review of related literature, we examined that, studies on research support related to OA, bibliometrics, and research data management services are perpetuating within the scope of academic and research libraries. In this everchanging scholarly communication and remote access to knowledge products, we believe that the academic library should thrive for better contemporary and emerging research support for the academic community. In this regard, the dedicated library website, which contains important information about research support services, can significantly help researchers be more informed about what service their library is offering. Based on existing literature, the current study thoroughly examines the website of the Hungarian University Library within the scope of contemporary research support and its visibility to researchers and library users.
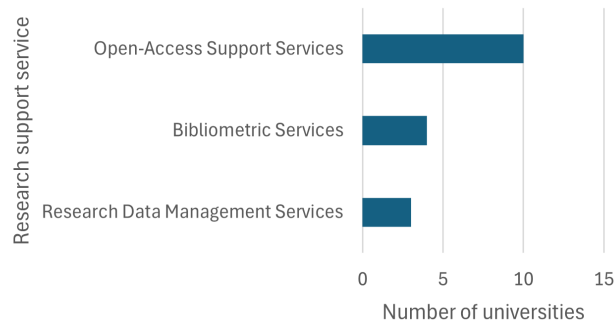
Methodology

This paper explores the research support related to OA, bibliometric, and research data management services offered in Hungarian academic libraries. The study used a descriptive survey research approach. The researchers primarily analyzed the websites of selected Hungarian university libraries based on related literature. A detailed analysis

of the websites was conducted from July 1 to October 30, 2023. We purposely selected ten Hungarian universities to examine the current practices of research support offered in academic libraries. Accordingly, Eötvös Loránd University (ELTE), Budapest University of Technology and Economics, University of Szeged, University of Debrecen, University of Pécs, Széchenyi István University, Corvinus University of Budapest, Óbuda University, Semmelweis University and Budapest Business University of Applied Science have selected for this study.

Individual libraries' homepages were carefully analyzed under 'Research Support', 'Research and Publication', 'Open Access publishing support', 'On-line Electronic Scientific Resource', 'All databases', 'Bibliometrics Services', and 'Research Data Management Services'. We analyzed the essential guidance about OA, bibliometric, and research data management offered to researchers and website visitors.

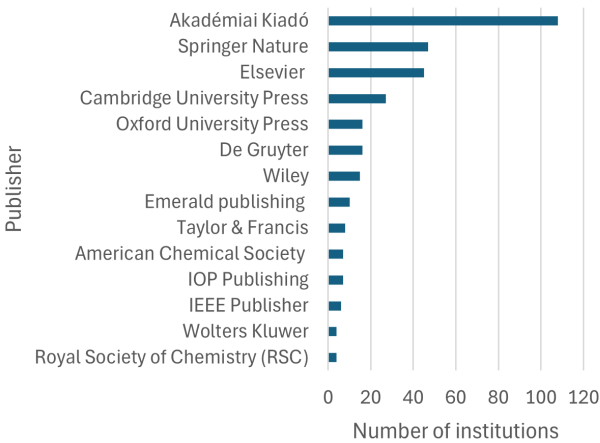## Figure 1

Major current research support services

Results

Currently, open-access support is broadly offered in all selected Hungarian University Libraries. Open-access publishing is mainly supported in the framework of a library consortium called Electronic Information Services (EIS) under the Hungarian Academy of Science. However, most libraries' websites did not mention bibliometrics and research data management (RDM). Over 70% of the libraries did not mention the current RDM services. A few libraries mentioned some RDM services on their library websites.
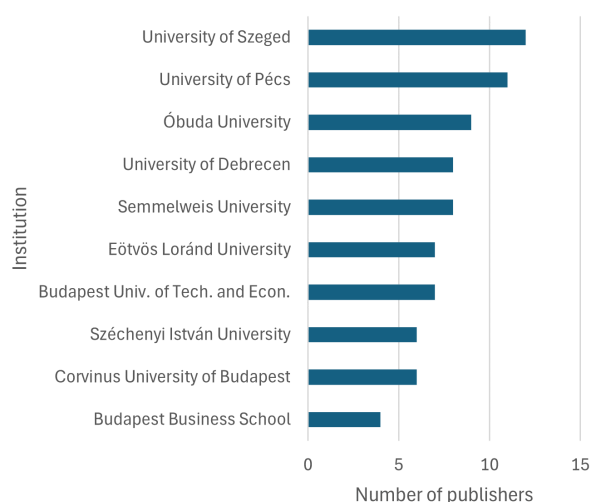
Open-Access Publishing Support

Figure 2

OA publishing agreements between EISZ consortium and publishers (2023).

Accordingly, the OA support was examined based on OA publishing support, OA route or path (golden, hybrid), availability of Open Journal System (OJS), DOI request, access to an institutional repository, link to publisher's website, link to Hungarian Scientific bibliographic database (MTMT) and access to online resources or databases that are free, and subscription-based. Regarding bibliometric services, we examine the library's website based on bibliometric training, faculty member research performance evaluation, citation reports, research impact analysis, disciplinary research trend reports, grant applications Support, Institutional comparison or benchmarking, and journal Ranking. Finally, RDM services were analyzed based on whether the library website describes a data management plan (storage, preservation, and security of research data, choosing appropriate data repositories) and options related to the re-use of data (repositories, copyright issues, and licensing. Furthermore, we examined whether data management training was offered as well as designated personnel or data stewards with detailed contact information provided on the website of the respective university library.
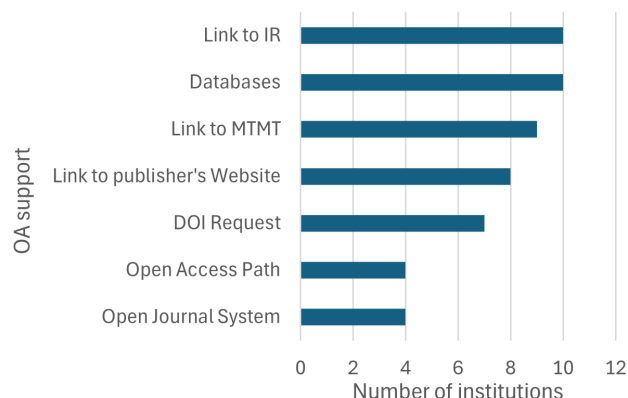
In this section, we examine the open-access support of respective university libraries about consortia participation to support open-access publishing. Within the framework of the consortium of the Electronic Information Service (EISZ), researchers from member institutions of the EISZ consortium can publish their research work on OA journals without paying APCs. Based on the read-and-publish agreements between the Hungarian Electronic Information Service National Programme and world-renowned publishers (see Figure 2), author from participating institutes (higher education institutes, Research Network, and government institutions) can publish their research work in open-access journals. A source from Electronic Information Service National Programme (EISZ) website indicated, currently there are 169 participating institutions, of which 59 (35%) are higher education institutes, 20(11.8%) Hungarian Research Network, 6 (3.5%) government institutions, 12(7%) healthcare Institutions, 15 (8.8%) Museum, 31(18.3%) public libraries, 10 (6%) research centres, 14(8.3%) special library and 2(1%)

Figure 3

Participation in read-and-publish agreements (2023).

Figure 4

Library websites with substantial and visible OA information.

Currently, most publishers, which account for 9 (64%), allow researchers from member institutions of the Hungarian Electronic Information Service (EISZ) to publish in hybrid and gold journals, except Oxford University Press, De Gruyter, and Taylor & Francis, which support only hybrid journals. Regarding copyright, most publishers grant the CC-BY license to the publication which facilitates knowledge transfer with less restriction.

The Visibility of OA Support from the University Library's Website

From the library websites of individual universities, we examined the visibility of information about OA path, access to institution repository, access to databases, availability of Open Journal System, DOI request, link to publisher's website, and link to Hungarian Bibliographic Database or MTMT for long term preservation. Some university library websites easily depicted detailed information related to open-access publishing support to researchers and website visitors. For instance, looking at the University of Debrecen Library website (DEENK https://lib.unideb.hu/en), visitors can easily find OA support under the 'research and publication' menu. Moreover, a detailed guide and conditions of support were explicitly offered to website visitors. The same applies to the university repositories, the databases that the university makes available free, and a link to MTMT registration is also included on the university library website. This way, DEENK offers all requirements about OA support with a detailed and all-inclusive information service provided on the library website.

Most selected Hungarian university libraries incorporated the essential information about OA support into their website. Researchers can easily search and retrieve literature from databases or institutional repositories with the link provided. As illustrated in Figure 4, currently, more than 7 (70%) of Hungarian Libraries offer Digital Object Identifier (DOI) requests, which are assigned by the Crossref agency. DOI helps to ensure long-term access to digital content regardless of changes in its storage location. Moreover, 8 (80%) libraries provide a link to the publisher's website to facilitate scholarly publication within the scope of the read-and-publish agreement. Link to the publisher's website allows research to identify the available open-access journals option (gold or hybrid), type of articles supported, and copyright provided. Furthermore, almost all university library libraries' websites have a link to the Hungarian Science Bibliography (MTMT) database of scholarly publications for easy storage and preservation of research work. However, only four libraries currently indicate the OA path and availability of an open journal system on their website.

Access to On-Line Electronic Scientific Resources

To support the research and teaching activities, Hungarian university libraries have subscribed to several database providers through EISZ as well as their means. A dedicated menu containing 'All databases' from individual university libraries is easily accessible to every website visitor. Users can get access to rich online resources from well-recognized database providers through the university network. Libraries also offer some freely accessible online resources to any users without restriction. However, as we can observe from Table 2, most databases are restricted and require a username and password to access the content. This is because of the license agreement between EISZ and database providers. Commonly, through all databases, Hungarian university libraries

[1]https://eisz.mtak.hu/index.php/en/

Table 1

OA publishing support for researchers within the framework of Hungarian Electronic Information Service (EISZ).

Publisher	OA Path	Article type supported	Copyright license
kadémiai Kiadó	hybrid and gold	original research papers, review article, book review	CC-BY
American Chemical Society	hybrid and gold	original research papers	CC-BY
Cambridge University Press	hybrid and gold	original research papers, review article, case report, brief report, rapid communications	CC-BY, CC-BY-NC-SA and CC-BY-NC-ND
De Gruyter	hybrid	original article, original research, research paper, review article, brief communication (letter), continuing education, case reports	CC-BY and CC-BY-NC
Elsevier	hybrid and gold	case reports, data in briefs, full-length articles, micro-articles, original software publications, practice guidelines, protocols, review articles, replication studies, short communications, short surveys, video articles	CC-BY and CC-BY-NC-ND
Emerald Publishing	hybrid and gold	original research papers	CC-BY
IEEE Publisher	hybrid and gold	original research papers	CC-BY and CC-BY-NC
IOP Publishing	hybrid and gold	research papers, special issue papers, letters, review	CC-BY
Wolters Kluwer	all publisher journals	original research papers	CC-BY
Oxford University Press	hybrid	research article, review article, case report, brief report	CC or equivalent licenses
Royal Society of Chemistry	hybrid and gold	original research papers	CC-BY and CC-BY-NC
Springer Nature	hybrid and gold	original articles, review articles, brief communication, continuing education.	CC-BY
Taylor & Francis	hybrid	original and review papers	CC-BY and CC-BY-NC
Wiley	hybrid and gold	case study, commentary, data article, education, lecture, method and protocol, perspective, practice and policy, rapid publication, research article, review article, short communication, technical note	CC-BY, CC-BY-NC, CC-BY-ND, and CC-BY-NC-ND

offer access to online electronic resources such as electronic libraries, e-books, online journals, and institutional repositories to researchers and the academic community.

Overall, the library with the largest number of databases is currently the University of Szeged, with more than 397 (36%) databases, followed by the University of Debrecen 178 (16%) for the year 2023, then Eötvös Loránd University with 151 (14%), Semmelweis University 103 (9%), University of Pécs 98 (8%), Budapest University of Technology and Economics23(2%), Széchenyi István University(4%), Corvinus University of Budapest, Óbuda University (2%), and Budapest Business School-University of Applied Sciences(2%). Major subscribed databases are illustrated in Figure 5. Many Hungarian university libraries subscribe to Akadémiai Kiadó,

Table 2

OA publishing support for researchers within the framework of Hungarian Electronic Information Service (EISZ).

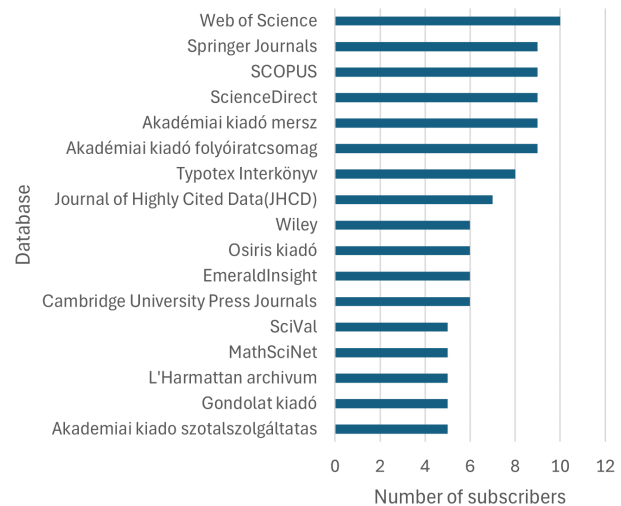| University	Databases	n OA	pct. OA
Budapest Business School	37	15	40.5
Budapest University of Technology and Economics	23	-	-
Corvinus University of Budapest	55	10	18.2
Eötvös Loránd University	151	94	62.3
Óbuda University	24	2	8.3
Semmelweis University	103	45	43.7
Széchenyi István University	47	32	68.1
University of Debrecen	178	60	33.7
University of Pécs	94	34	36.2
University Szeged	397	17	4.3

Web of Science, Scopus, Springer Journal, and ScienceDirect. Access to the Scientific databases is also provided within the subscription-based system in cooperation with the Hungarian university libraries and the Electronic Information Service National Programme-EISZ.

The journal collection of Akadémiai Kiadó covers the area of sciences, technology, and social sciences with international and Hungarian journals that are accessible to library users. The Cambridge University Press, EmeraldInsight, and Wiley databases provide full-text access to thousands of scientific journals in multidisciplinary areas. Scopus and Web of Science are the two leading bibliographic and citation databases that provide data for the bibliometric analysis of authors, research groups, and institutes based on publication metadata. SciVal is a research analytical tool that offers comprehensive access to the research performance of over 14,000 research institutions and their associated researchers from 230 nations worldwide currently subscribed by five Hungarian university Libraries. Journal of Highly Cited Data (JHCD) is a database owned by Clarivate Analytics, which is a platform for Journal Citation Reports (JCR) and Essential Science Indicators (ESI). JHCD database, which gives access to the Impact Factor of journals for library users, is also one of the most subscribed online resources.

Figure 5

Most subscribed databases by Hungarian University Libraries.

Bibliometric Support Services

Based on the review literature and analysis of each library website, we examined bibliometric support services offered by Hungarian academic libraries. From the analysis of each university library's websites, we observed that bibliometric services are not common practice in most selected libraries. Few libraries indicated information about bibliometric services offered to researchers. Some libraries indicate they conduct a bibliometric analysis of the faculty member-based number of scholarly output and citations received from the Hungarian national bibliographic database (MTMT). Moreover, from a few libraries' websites, we noticed that journal ranking and evaluation were less often conducted based on the Journal Impact Factor. For instance, Corvinus University of Budapest conducted journal ranking- based on Eigenfactor(EF), Article Influence (AI), and the related Article Influence Percentile (AI) until 2015 and scientific and educational publications of faculty members between 2014 and 2020. Similarly, the Budapest University of Technology and Economics analyzed Impact Factor (IF) data of Periodica Polytechnica's journals in 2022.

Only Semmelweis University library offers relatively provided full-fledge bibliometrics service to the library website visitor. The homepage of Semmelweis University has detailed information about authors, department ranking, and top papers of the university in SJR Q1 and Q2 journals. Authors were ranked based on their number of highly cited papers, their citation counts for papers published in the last 5 years (MTMT I-IV), H-index from MTMT, numbers of

Table 3

Visibility of bibliometric services from the libraries' website.

Bibliometric services	Number of libraries
Individual research evaluation	1
Bibliometrics training/literacy	-
Citation reports	1
Research impact analysis	-
Disciplinary research trend reports	1
Grant applications support	1
Institutional research evaluation	-
Metric-based journal ranking	3

Table 4

Visibility of RDM services from the library website.

Bibliometric services	Number of libraries
RDM plan development	3
Training/literacy	1
Consultation	3
Support for data deposit in institutional repository	1
Research data stewardship and contact	3

citations than the average number of citations of the papers published in the same subject area and year could be viewed from the library website.

Research Data Management Services

From our observation, like bibliometric services, RDM services were also not often mentioned on the majority of the library's website. However, we noticed that the Corvinus University of Budapest Library, the University of Debrecen Library, and the University of Szeged Library website mentioned research data management services offered to researchers. Corvinus University of Budapest Library provides organized research data management services for professors, researchers, and PhD students. Its research data services cover major areas of RDM including consultation, training, developing an institution-wide FAIR data management policy and strategy, awareness raising and support for FAIR data sharing, data reuse, and data archiving. Another University that mentioned the provision of RDM service on the library website is the University of Debrecen. Under the 'Research and Publication' menu, a brief description of research data, research data management, research data management plan, data storage, sharing research data, handling personal data, and encryption methods were explicitly mentioned. Similarly, the University of Szeged Klebelsberg Library currently helps researchers organize research data, create metadata, align research data with the FAIR principles, and choose the most appropriate repository for managing research data. Moreover, Klebelsberg Library offers data management plan consultation and data repository recommendations with detailed metadata elements. Generally, we confirmed that Corvinus University of Budapest, University of Debrecen, and Szeged Klebelsberg Library assigned a dedicated research data steward with a contact detail of the data steward.

citations in WoS, and publication indexed in international databases. Similarly, departments were ranked Based on papers published in the last 5 complete years (2018-2022) with several metrics such as number of scholarly communication, publication (article, review) indexed in international databases, publication (article, review) in SJR Q1 and Q2 journals, citation received to publications indexed in international databases, relative citation ratio (WoS), average citation per paper (WoS), number of papers published in SJR D1 category journal are some parameters in which departments have been ranked.

Research papers were ranked as top papers if published in an internationally reputable journal that is indexed in the WoS, the authors contributed as the first or the corresponding author, and the author is affiliated with Semmelweis University. Moreover, information about top paper ranking by assessing bibliographic data found in the Hungarian Scientific Bibliography (MTMT) and the Web of Science databases for the year 2020-2021 was described on the library website. Papers were included in the list of outstanding publications of Semmelweis University based on journal prestige and number of citations received. Papers published in scientific journals with high prestige in each subject area (SJR TOP 2% and has an impact factor) were considered outstanding papers. Papers published in 2019-2020 that were listed in the top 2% of the journals on Scimago Journal Ranking and have Impact Factor value could be accessible from the library website. At the same time, papers with outstanding scientific impact assessed by top citation rates (highly cited) 2017-2018, which are listed in Web of Science and have at least three times more

Conclusion

As one of the central knowledge gateways, academic libraries should utilize the advantage of ever-changing information technology that enhances knowledge transfer. Because of advances in information technologies and the ubiquitous of digital devices, the information-seeking behaviors' of researchers have significantly changed. Nowadays, academic libraries are offering more research support on scholarly communication than traditional searching and retrieving services. In this study, based on website analysis, we identified that the libraries of selected Hungarian universities are currently offering research support on open-access publication and access to online electronic scientific resources. Most libraries' homepages have a dedicated menu, 'Research Support', containing open-access publishing support and databases that allow researchers to access online scientific resources from world-leading publishers and database providers. In this regard, the cooperation of the consortium of the Electronic Information Service (EISZ)and Hungarian university libraries played a significant role. However, from the current layout of most libraries' homepages, the practice of bibliometrics and research data management services is rarely indicated.

At present, many libraries' websites, bibliometric and research data management services are not stated and are less visible to website visitors. To make library research support more visible to researchers and other website visitors, bibliometric and research data management services must also be included as a research support service with essential information that helps researchers publish their research work. For instance, from the point of research performance evaluation and disciplinary research trend, the benefit of bibliometric analysis is very enormous in making libraries more visible to the academic community. Faculty members can easily understand the publication trends and the global visibility of the research output of their institution and individual researchers. Moreover, bibliometric analysis helps the library make good decisions in selecting new subscriptions, benchmark with peer institutions, and support competitive intelligence. Especially academic libraries that have access to international bibliographic and citation databases such as Scopus of Elsevier and Web of Science Clarivate must utilize the benefits of bibliometric analysis for their institution. Similarly, in the case of research data management services, libraries must use the full potential of their institutional repositories in the storage, curation, and preservation of research data for long-term use.

In this paper, an investigation of current research support was thoroughly conducted based on an analysis of individual library websites of ten Hungarian-selected universities. Because of limited time and other factors, the current study has methodological limitations, especially in collecting essential data from librarians and library users. We suggest further study investigating the reasons behind the lag of some Hun-garian university libraries in offering well-established bibliometric and research data management services that can easily be searchable on library websites.

References

Abernethy, T., & Holderied, A. (2018). Implementing New Bibliometric Services at EPA-RTP Library. *Serials Review*, *44*(3), 204–210. https://doi.org/10.1080/00987913.2018.1549695

Ashiq, M., Usmani, M. H., & Naeem, M. (2022). A systematic literature review on research data management practices and services. *Global Knowledge, Memory and Communication*, *71*(8/9), 649–671. https://doi.org/10.1108/GKMC-07-2020-0103

Åström, F., & Hansson, J. (2013). How implementation of bibliometric practice affects the role of academic libraries. *Journal of Librarianship and Information Science*, *45*(4), 316–322. https://doi.org/10.1177/0961000612456867

Ball, R., & Tunger, D. (2006). Bibliometric analysis—A new business area for information professionals in libraries?: Support for scientific research by perception and trend analysis. *Scientometrics*, *66*(3), 561–577. https://doi.org/10.1007/s11192-006-0041-0

Bishop, B. W., Orehek, A. M., Eaker, C., & Smith, P. L. (2022). Data Services Librarians' Responsibilities and Perspectives on Research Data Management. *Journal of eScience Librarianship*, *11*(1), 1226. https://doi.org/10.7191/jeslib.2022.1226

Bladek, M. (2014). Bibilometrics Services and the Academic Library: Meeting the Emerging Needs of the Campus Community. *College & Undergraduate Libraries*, *21*(3–4), 330–344. https://doi.org/10.1080/10691316.2014.929066

Chan, L., & Martens, B. (2007). *Openness in Digital Publishing: Awareness, Discovery and Access - Proceedings of the 11th International Conference on Electronic Publishing held in Vienna - ELPUB 2007, Vienna, Austria, June 13-15, 2007. Proceedings*. https://doi.org/10.13140/2.1.4998.9927

Corrall, S., Kennan, M. A., & Afzal, W. (2013). Bibliometrics and Research Data Management Services: Emerging Trends in Library Support for Research. *Library Trends*, *61*(3), 636–674. https://doi.org/10.1353/lib.2013.0005

Cox, A. M., & Pinfield, S. (2014). Research data management and libraries: Current activities and future priorities. *Journal of Librarianship and Information Science*, *46*(4), 299–316. https://doi.org/10.1177/0961000613492542

Crow, R. (2002). *The Case for Institutional Repositories: A SPARC Position Paper*. The Scholarly Publishing & Academic Resources Coalition (SPARC).

Cullen, R., & Chawner, B. (2011). Institutional Repositories, Open Access, and Scholarly Communication: A Study of Conflicting Paradigms. *The*

Journal of Academic Librarianship, *37*(6), 460–470. https://doi.org/10.1016/j.acalib.2011.07.002

Drummond, R., & Wartho, R. (2016). Rims: The Research Impact Measurement Service At The University Of New South Wales. *Australian Academic & Research Libraries*, *47*(4), 270–281. https://doi.org/10.1080/00048623.2016.1253427

Erdt, M., Nagarajan, A., Sin, S.-C. J., & Theng, Y.-L. (2016). Altmetrics: An analysis of the state-of-the-art in measuring research impact on social media. *Scientometrics*, *109*(2), 1117–1166. https://doi.org/10.1007/s11192-016-2077-0

Forsman, M., Ndinoshiho, J., & Poteri, E. (2012). Research support services of University Libraries. In M. Iivonen, P. Helminen, J. Ndinoshiho, & O. Sisättö (Eds.), *Empowering People: Collaboration between Finnish and Namibian University Libraries* (pp. 180–200). Tampere University Press. https://trepo.tuni.fi/handle/10024/68089

Fu, P. (2020). Research Data Service: Current State and Future Plan for CWU. *Library Scholarship*. https://digitalcommons.cwu.edu/libraryfac/82

González Alcaide, G., & Gorraiz, J. I. (2018). Assessment of Researchers Through Bibliometric Indicators: The Area of Information and Library Science in Spain as a Case Study (2001–2015). *Frontiers in Research Metrics and Analytics*, *3*, 15. https://doi.org/10.3389/frma.2018.00015

Guerrero, R., & Piqueras, M. (2004). Open access. A turning point in scientific publication. *International Microbiology: The Official Journal of the Spanish Society for Microbiology*, *7*(3), 157–161.

Gumpenberger, C., Wieland, M., & Gorraiz, J. (2012). Bibliometric practices and activities at the University of Vienna. *Library Management*, *33*(3), 174–183. https://doi.org/10.1108/01435121211217199

Kaiponen, P. M., & Nykyri, S. (2016). *Research Support Services at Helsinki University Library*. https://trepo.tuni.fi/handle/10024/141346

Larsen, P. O., & Von Ins, M. (2010). The rate of growth in scientific publication and the decline in coverage provided by Science Citation Index. *Scientometrics*, *84*(3), 575–603. https://doi.org/10.1007/s11192-010-0202-z

Leiß, C. (2018). Engaging in Performance Measurement: Introducing Bibliometric Services. *Proceedings of the IATUL Conferences*. https://docs.lib.purdue.edu/iatul/2017/analytics/4

Perrier, L., & Barnes, L. (2018). Developing Research Data Management Services and Support for Researchers: A Mixed Methods Study. *Partnership: The Canadian Journal of Library and Information Practice and Research*, *13*(1). https://doi.org/10.21083/partnership.v13i1.4115

Powell, K. R., & Elder, J. J. (2019). A bibliometric services workshop for subject librarians. *Library Management*, *40*(5), 305–312. https://doi.org/10.1108/LM-03-2018-0014

Prosser, D. (2003). The Next Information Revolution—How Open Access repositories and Journals will Transform Scholarly Communications. *LIBER Quarterly: The Journal of the Association of European Research Libraries*, *14*(1). https://doi.org/10.18352/lq.7755

Sun, H. (2015). *New Type of Library Service Items——Research on Service based on Bibliometrics:* 2015 International Conference on Education Technology, Management and Humanities Science (ETMHS 2015), Shaanxi, China. https://doi.org/10.2991/etmhs-15.2015.62

Tavernier, W. & Jamieson, L.M. (2022). Value Added: A Case Study of Research Impact Services. *Portal: Libraries and the Academy, 22*(4), 919–42.

Tenopir, C., Sandusky, R. J., Allard, S., & Birch, B. (2013). Academic librarians and research data services: Preparation and attitudes. *IFLA Journal*, *39*(1), 70–78. https://doi.org/10.1177/0340035212473089

Xu, Z. (2022). Research Data Management Training in Academic Libraries: A Scoping Review. *Journal of Librarianship and Scholarly Communication*, *10*(1). https://doi.org/10.31274/jlsc.13700