

Students' Information Seeking Behavior and Information Needs

A Case Study of "Babeş-Bolyai" University

Gabriela Florescu

The Doctoral School Communication, Public Relations, and Advertising from the Faculty of Political, Administrative, and Communication Science

[E-mail gabriela.florescu@ubbcluj.ro](mailto:gabriela.florescu@ubbcluj.ro)

Abstract:

All around the world, universities and university libraries have faced the decline in the importance as a physical entity. This decline has multiple causes, such as the change of users' expectations and needs, the universities switch from exclusively on-site work and teaching to remote or more flexible schedules, the availability of alternative sources of information, the use of new technologies (social networks, mobile technologies), the preference for anytime and remote access from personal devices, the demand for greater compatibility and interoperability of systems, and the transformation of library user from consumer into content creator. Thus, this research aims to study the information-seeking behavior of college students in the context of traditional and electronic resources). Urquhart and Rowley's model of information-seeking behavior will be applied along with Wilson's model, to identify the factors that influence information-seeking behavior: the design of information resources, the educational infrastructure, the organizational culture, the availability and access constraints, the information culture, the search strategy, the support and training, the pedagogy, the behavior of teachers regarding information, and the study discipline and curriculum. Nonetheless, the article will explore information literacy skills and the barriers to accessing and using them: cultural aspects related to teaching and learning styles, language proficiency and digital culture.

Keywords: *Information-seeking behavior, Academic libraries, Information literacy, Literacy*

1. Introduction

In the academic environment, electronic resources have become the primary medium in which information seeking behavior occurs. Consequently, the relationship between the information seeker and digital resources must be constantly evolving (Wilson, 2006). With the beginning of the third millennium, research in the academic environment began to be increasingly based on technology. Faculty members, researchers, and students have access to dynamic and interactive digital facilities that constantly provide instant connectivity via university computer networks. They have the possibility to choose from several information delivery systems and from a wide range of sources and channels of information. Information can now be obtained anytime and anywhere. However, easy access does not imply that the information retrieved will be both relevant and

reliable for users. Given the variety of information resources and the technological progress, it is important for libraries to understand how students and academics navigate through information environment, in order to effectively design the systems and services they provide to users (Wilson, 2008).

The aim of this research is to examine the information seeking behavior of students at Babeş-Bolyai University, and to identify the factors that influence their information seeking behavior. The goals refer to:

1. Identifying the users (students) information needs, necessary to fulfill their academic goals.
2. Exploring the level of awareness and knowledge of available information sources, especially the online ones.
3. Identifying students' perceptions of their skills related to information literacy.
4. Exploring users' awareness of library resources and their ability to use them in order to accomplish their tasks.
5. Exploring the factors (both hindering and facilitating) that influence how users seek information to meet their research and learning needs.
6. Identifying the influence that teachers and librarians have on students' information-seeking behavior.
7. To make recommendations regarding the diversification of library services to meet the users' information needs.

Research Questions:

1. What are the characteristics of the information-seeking behavior of Babeş-Bolyai University students?
2. To what extent are they aware of the information sources available online for their areas of interest?
4. What are the most important factors influencing information-seeking behavior (role-driven, psychological, demographic, environmental).
5. What impact do teachers have on students' information-seeking behavior?
6. How can the role of libraries and librarians be increased to meet the users' information needs?

2. Definitions

Information-seeking behavior: Case (2016) defines information-seeking behavior as a persons' "conscious effort" to obtain information in response to a need or lack of expertise. For Wilson (1999) information-seeking behavior is an "activity" pursued by a person in order to search, identify, use and communicate information that he considers relevant in a certain context.

Information literacy: CILIP (the Chartered Institute of Library and Information Professionals) defines information literacy as "knowing when and why you need information, where to find it and how to evaluate it, how to use it and communicate it in an ethical manner" (Law, 2008). Due to the development of technology, information literacy has become equally important as computer literacy, critical thinking, and library skills (Schroth, 2022). In this paper,

information literacy is defined as: “the set of skills needed by individuals to recognize when information is needed and to have the ability to find, evaluate and effectively use the desired information” (Association of College and Research Libraries ACRL, 2000). ACRL has established 5 standards that determine the level of students’ information literacy. According to these standards, students can (a) determine the nature and amount of information they need, (b) can access information effectively and efficiently, (c) can critically evaluate sources and information they find, (d) can understand and use information for the achievement of a specific task, and (e) use information respecting the legal limits and ethical standards of academic research (Repanovici, 2012).

Information need: As Case (2016) stated, information is needed in order to reduce uncertainty. He defined information need as the awareness of a certain person that he has insufficient knowledge about a certain subject to be able to achieve his goal.

Information use: in this paper information use is consistent with the definition of Hughes (2005) who claims that it is a complex experience that involves context, needs, actions (information seeking behaviors), responses, influences (cognitive, affective, cultural and linguistic) and results (understanding, knowledge development).

3. The conceptual framework

In order to achieve the goals and objectives of this research, it had been proposed Wilson’s (1999) information-seeking behavior theoretical model. According to Wilson, information-seeking behavior occurs as a consequence of a need perceived by an individual, and in order to satisfy that need, he uses formal or informal sources of information, which result in success or failure in finding relevant information. If he is satisfied, the individual uses or forwards the information and if he is not satisfied, he resumes the search process. Wilson's model is based on two main statements: first, that the need for information is not a primary need, but a secondary need, which derives from basic needs (physiological, cognitive or affective); second, in the effort to discover information to satisfy a need, the seeker will encounter barriers of various kinds. Wilson argues that the individual himself, the roles he fulfills in his personal life or at work, and the environment in which he operates are the contexts of emergence and manifestation of these needs. The barriers to information seeking will appear within the same set of contexts.

The theoretical model would serve as a framework for building research tools, formulating hypotheses, collecting data, analyzing results and formulating conclusions. This model of information behavior would also guide the study, based on the set of mediating variables identified by Wilson as affecting the information-seeking process: psychological, demographic, role-related, environmental, and resources characteristics. Since Wilson's model is a general one and the present research requires the identification of a specific set of factors that would allow hypotheses to be formulated, a set of factors identified by Urquhart and Rowley in a study conducted in Great Britain, would be integrated within Wilson's model. Urquhart and Rowley (2007) identified two categories of factors, macro factors and micro factors, with direct (micro) and indirect (macro) influence on information seeking behavior. The associations between these factors can be tested, and this fact is consistent with the objectives of identifying the key factors influencing information-seeking behavior of this research. In addition, Urquhart and Rowley's study established a set of variables analyzing electronic information-seeking behavior in academic environment. These factors are: design of information resources, educational infrastructure, leadership and organizational culture, availability and constraints related to access, information literacy, search

strategy, support and training, pedagogy, behavior of teaching staff regarding information, discipline and curriculum.

This research focuses on exploring students' patterns of information-seeking behavior, and identifying factors that influence the information-seeking process. These patterns include:

- The place where the search is carried out: at home, in the library or in an office;
- Usage of library resources, electronic journals, search engines, and personal contacts to find the necessary information;
- Problems related to access or computer usage while conducting the search;
- Asking for help if needed.

4. Methodology

Based on the conceptual framework and research questions, hypotheses had been formulated in order to test whether certain factors influence the information-seeking behavior. These hypotheses are as follows:

1. There is a significant correlation between students' information-seeking behavior patterns and (a) reading habits; (b) confidence in one's own information literacy skills and (c) level of knowledge of a foreign language.
2. There is a significant correlation between students' information-seeking behavior patterns and (a) gender; (b) environment of residence and (c) age.
3. There is a significant correlation between students' information-seeking behavior patterns and (a) college; (b) level of study and (c) frequency (full time or distance learning).
4. There is a significant correlation between students' information-seeking behavior patterns and (a) teachers' demands; (b) teaching style.

The hypotheses had been tested using a survey which had been constructed by adapting several scales: a scale measuring information literacy, validated in the study of Kurbanoglu, Akkoyunlu and Umay (2006) and another designed by Baker (1997) that measures students' use of library services and resources.

Method

The study was conducted using a survey. The sample (N=54), contained 24.1% men and 74.1 % women, with ages varying from 18-25 (%) to 26-35 (%) and over 36 (%). Regarding the college where they are enrolled, 22.2% attend a college in the field of humanities, 64.8% in the field of social sciences, and 13% either did not answer the question or indicated the Babeş-Bolyai University instead of their college. The data collection was done between May-June 2022.

Instrument

An online questionnaire was applied. It has been constructed by adapting several scales: a scale measuring information literacy, validated in the study of Kurbanoglu, Akkoyunlu and Umay (2006) and another designed by Baker (1997) that measures students' use of library services and resources.

The questionnaire contained 5 parts plus the introductions, as explained below.

Introduction

The introduction of the survey is a paragraph explaining the purpose of the research, ensuring the confidentiality of the collected data and providing the contact details of the researcher.

Part I: Information seeking

This section aims to obtain information related to the use of information sources in particular situations. The critical incident must be an assignment related to writing a seminar paper, a scientific article, a thesis or dissertation, etc.

Part II: Information literacy

This section contains a series of questions that examine the respondents' levels of confidence in their information literacy skills. The questions in this section are presented as statements to be answered using a five-point Likert scale. The statements cover the following aspects: information need, search strategy, locating and accessing resources, evaluating the relevance of information, interpreting, synthesizing and using information, communicating information, and evaluating resources.

Part III. Teaching method

This section is intended to investigate the role of teachers in influencing students' information-seeking behavior, and the teaching styles adopted within different disciplines.

Part IV. Perception regarding the role of the library

Using a 5-point Likert scale, this section intends to measure students' attitudes toward the use of the library, and their perception regarding library's role in the academic community.

Part V: Demographics

This section of the survey contains closed questions regarding gender, age, residence, college, level of study (bachelor or master) and frequency (full-time or distance learning). Respondents are also asked to rate their level of proficiency in a foreign language.

5. Results

75,9% of the respondents rated their level of proficiency in a foreign language as *Independent* (B2) or *Proficient User* (C1, C2) and only 9,3% as *Basic User* (A1/A2). Regarding the confidence in their information literacy skills, 98% claim that they like to do research and that they do so for projects or seminar assignments (90.8%), 79.6% know what need to be done to get the information they need, 79.6% know how to narrow their search by subject, language and publication date, and 66.7% know how to use Boolean operators. Likewise, 75.9% know how to determine whether a source is reliable, 87% know how to select the most relevant information for their field of interest, and 75.9% know how to compile bibliographic references for all types of documents (books, book chapters, articles, web pages, etc.). 66.7% of respondents claim that they ask teachers for help when researching for an assignment or project, 68.5% use the Google search engine, 42.6% ask their friends or colleagues and only 22.2% ask a librarian for help. When asked to express their preference for the format of the documents they use as a source of information, 72.2% of respondents claim that they prefer documents in electronic format because they can use keywords in the research process (63%), they can search inside documents (64.8%), and 35.8% appreciate the fact that electronic documents can be inserted into automatic translation software. Also, 90.8% prefer books over journals (38.9%).

Regarding the library usage, 51.9% of the respondents claim that they have never been to the Central Library or the faculty library (68.5%), while 14.8% visited the Central Library and 9.3% the faculty library, at least once a week. Regarding the role of the library within the academic community, 46.3% of the interviewed believe that the library helps to stimulate creativity among members of the academic community, while 26% neither agree nor disagree with this statement; 60% believed that the library helps promote a sense of community between members of different groups, 54% believe that the library creates educational opportunities for all audiences, while 54% agree that the library provides a neutral space that serves as a place for meeting and debate on various topics and a hangout place for the academic community (48.1%).

When asked *what the library should do to better serve its patrons*, 65% believe that it should have more comfortable spaces for reading, research and relaxation, 62% want more reading rooms, IT areas, work spaces for small groups; 85% want training courses for the use of new technologies, digital skills or academic writing (46.3%) and 39% believe that the library should borrow technology: laptops, tablets, VR headsets, studios portable photo. 9% of respondents suggested purchasing more copies of the most requested publications, making the web page more public-friendly and the library opening hours should be extended after 8 p.m. Also, for the library to promote its services as well as possible, the respondents suggested organizing events to attract students to the library, workshops, tutorials, the promotion of services on social media and through teaching staff, and the improvement of the attitude of some librarians.

5.1. Hypothesis testing

Regarding hypothesis one, that there is a significant correlation between students' information-seeking behavior patterns and (a) reading habits, (b) confidence in their information literacy skills, and (c) level of proficiency of a foreign language, the data collected revealed that there was no significant correlation between the location of the search, the level of proficiency of foreign languages or the reading habits of the students. However, there is a significant positive correlation between where the search is done and confidence in certain information literacy skills. This means that students who have a higher level of confidence in their information literacy skills seek information from the library or IT lab. Confidence in one's own information literacy skills is also correlated with the use of diverse information sources, which could suggest that students who are more confident in their information literacy skills use more different information sources.

Tab.1 Correlation between the location of the search and information literacy

	In the library	In the IT lab
I like to do research	,422**	0,218
I usually do research for projects or seminar assignments	,330*	0,093
I know how to narrow searches by subject, language, and date	0,173	,280*
I know how to use keywords and boolean operators	0,167	,295*
I like to use printed information sources	,415**	,284*
I know how to locate documents in the library using the online catalog	,423**	0,225
I know how to design a research project	,407**	0,251
I know how to reference different types of documents	,291*	0,237

*p<0.05; **p<0.01

Confidence in one's own information literacy skills is also correlated with the use of diverse information sources, which could suggest that students who are more confident in their information literacy skills use more different information sources.

Tab. 2 Correlation between information literacy and the use of information sources

Search Electroni Databases Online Piracy

	engines	c journals	catalogs	websites	
I like to do research	0,073	,536**	0,174	0,267	-0,045
I usually do research for projects or seminar assignments	0,137	,323*	0,206	0,244	-0,074
I know what to do to get the information I need	-0,025	0,207	,313*	,278*	0,058
I know how to narrow searches by subject, language, and date	0,131	,299*	0,239	0,156	0,266
I like to use different sources of information	-0,036	0,151	,277*	,411**	-,303*
I know how to locate documents in the library using the online catalog	-0,052	-0,066	0,201	,541**	-0,191
I know how to determine if a source of information is reliable	0,041	0,198	0,221	,306*	0,153
I know how to select the most relevant information for my field of interest	0,036	,339*	0,177	,324*	0,089
I know how to desig a research project	-0,037	0,101	0,209	,318*	0,087

*p<0.05; **p<0.01

Quite surprising is the correlation between confidence in information literacy skills and asking a librarian for help. This could indicate either that less experienced students feel anxious about librarians, or that students with more developed information literacy skills have acquired these skills from librarians, which is why they seek their help when they need guidance. Whereas, few data were collected, one can only speculate on this topic. The data collected does not reveal any correlation, however, between the psychological characteristics of the respondents and problems regarding access or computer usage while researching.

Tab. 3 Correlation between asking for help and information literacy

	Librarian	Friend	Wikipedia	Google
I like to do research	,328*	0,097	0,056	0,232
I like to use printed information sources	,608**	-0,12	-0,112	-0,038
I know how to locate documents in the library using the online catalog	,358**	-0,105	-0,081	-0,065
I know how to desig a research project	,332*	0,047	-0,06	-0,007

*p<0.05; **p<0.01

Hypothesis two, which claims that there is a significant correlation between students' information-seeking behavior patterns and demographic characteristics (gender, residence and age) did not find significant correlations, except for where the search took place and gender or residence of the person in question. Thus, the data show that women seek more information from home, but this may be the result of the disproportionate representation of gender in the sample (74.1%

women). As for residence, the data show that those from urban area do their research more often in the library than those from rural area. One explanation could be that library usage is a skill they have practiced since high school. We also found correlations between student age and the resources they use. Data indicates that students aged 18-25 are more likely to use e-journals and pirate sites, while students aged 26-35 and over 35 use the library's online catalog.

Tab. 4 Correlation between age and the use of information sources

	Search engines	Electronic journals	Database s	Online catalogs	Piracy websites
Age	-0,095	-0,255	-0,11	,382**	-,348**

*p<0.05; **p<0.01

The third hypothesis has not been validated. There is no significant correlation between students' information-seeking behavior patterns and role-related variables (faculty, level of study, and frequency).

Regarding hypothesis four, that there is a significant correlation between students' information-seeking behavior patterns and environmental factors (teacher demands and teaching style), data show that students who rate the teaching style of the college they attend as being based on lectures or a combination of lectures and tutorials are prone to search for information in the library space or the IT laboratory and use the library's online catalog. There is no correlation between problems of access or computer usage, and teaching style or teacher demands.

Tab. 5 Correlation between teachers' demands and the location for information search

	The teacher guided me on how to use information sources	The professor laid the foundation for my research activity	The teacher provided me with/recommended articles and scientific research	The teacher gave us assignments or projects that require the use resources available in the library	The teacher guided me in doing literature research
Library	0,235	,292*	0,173	,387**	0,23
IT lab	0,09	0,213	,328*	0,263	,329*
Home	-0,011	0,053	0,237	-0,011	0,223
Other	-0,075	-,331*	-0,142	0,042	-0,087

*p<0.05; **p<0.01

Teaching method or teaching style refer to the emphasis on problem-based learning or information-based learning. The lecture-based teaching style and the high demands of the teaching staff also correlate with asking a librarian for help if needed during information searching process.

Tab. 6 Correlation between asking for help and teaching style

Who do you ask for help when researching for a project or assignment	Combination of lectures and tutorials	Based on critical thinking	Based on individual work	Based on team work	Based on experiments	Based on lectures
Teacher	-0,029	0,042	0,072	0,205	0,25	,281*
Librarian	,320*	0,236	0,206	0,14	0,206	,508**
Friends	0,015	0,066	-,311*	0,163	-0,063	-0,002

*p<0.05; **p<0.01

Teachers' demands establish expectations regarding the search for information and are related to the area of study and how knowledge and skill development are structured within the learning experience. As data show, those who consider that the demands of teaching staff are higher in terms of the elaboration of scientific papers, tend to ask a librarian for help.

Tab. 7 Correlation between asking for help and teacher demands

	Librarian	Friends	Wikipedia	Google
The teacher guided me on how to use information sources	0,248	0,049	-0,103	-0,182
The professor laid the foundation for my research activity	0,242	0,124	-0,051	-0,096
The teacher provided me with/recommended articles and scientific research	,326*	0,258	0,175	0,09
The teacher gave us assignments or projects that require the use resources available in the library	,386**	0,016	-0,064	0,089
The teacher guided me in doing literature research	,341*	0,195	-0,108	0,106

*p<0.05; **p<0.01

6. Conclusions and further research

This research is consistent with studies regarding information need and information-seeking behavior of university students (Chlomoudis, 2022; Dahlqvist, 2021; Haider, 2021; Baba, 2019) and with studies investigating the role of library in student academic success (Mayer, 2020). There are several studies conducted in Romania which investigate patrons' satisfaction with library services (Olariu, 2010; Landoy and Repanovici, 2019; Nealcoş and Chevul, 2016).

The aim of this research is to examine the information seeking behavior of Babeş-Bolyai University students and to identify, in particular, the factors influencing information seeking behavior. The present research is ongoing, which is why it is based on limited data collected from a very small number of subjects compared to the total student population of Babeş-Bolyai University (48,520 students according to the Rector's Report on the State of the University Babeş-Bolyai at the beginning of the academic year 2021-2022). For this reason, only a few conclusions can be drawn as to what the library should do to improve its relationship with students and better respond to their information needs. First of all, The Central University Library needs a wide campaign to promote its services, especially on the social media used by students (Facebook, Instagram and Tik-Tok), because half of the respondents who took part in this study have never visited the Central University Library or the faculty library, although 63% of them are graduate students. Also, a much better collaboration between teachers and librarians is needed, with the aim of improving students' information literacy skills and increasing their autonomy in the information search process.

As previously argued, this research aims to investigate the relationship between a number of variables and students' information-seeking behavior. Cultural aspects related to teaching and learning styles, language proficiency, and digital culture are some of the factors that may influence information-seeking behavior. Thus, it is preferable for them to be analyzed in specific contexts. In this sense, it is necessary to collect data through the survey from as many students as possible, from all levels of study (bachelor, master, doctorate) and from all 21 faculties of the Babeş-Bolyai University. It is also needed to apply semi-structured interviews to teaching staff of Babeş-Bolyai University and to academic librarians, who have been carrying out public relations activities for at least 10 years. These semi-structured interviews will allow for the collection of detailed information about teachers' and librarians' perceptions on students' information skills when carrying out assignments or research projects for academic activities. They could also reveal academic librarians' and teaching staff expectations, suggestions and recommendations on how to improve students' information literacy. Focus group interviews with students could be another way of obtaining detailed information about how students search for information and the problems they face when using electronic resources.

7. References

- Baker, R.K. (1997) 'Faculty perceptions towards student library use in a large urban community college', *Journal of Academic Librarianship*, 23(3), p. 177. doi:10.1016/S0099-1333(97)90096-3.
- Case, D. O. and Given, L. M. (2016) *Looking for Information: A Survey of Research on Information Seeking, Needs, and Behavior*. Bingley, UK: Emerald Group Publishing Limited (Studies in Information).

- Chlomoudis, C. et al. (2022) 'Information needs and information-seeking behaviour of maritime students: a systematic literature review using the PRISMA method', *Library Management*, 43(5), pp. 353–369. doi:10.1108/LM-11-2021-0105.
- Dahlqvist, C. 1974 (2021) 'Information-seeking behaviours of teacher students: A systematic review of qualitative methods literature', *Education for Information*, 37(3), pp. 287–312. doi:10.3233/EFI-200448.
- Haider, M.S. and Ya, C. (2021) 'Assessment of information literacy skills and information-seeking behavior of medical students in the age of technology: a study of Pakistan', *Information Discovery and Delivery*, 49(1), pp. 84–94. doi:10.1108/IDD-07-2020-0083.
- Hughes, H. (2005) 'Actions and Reactions: Exploring International Students' Use of Online Information Resources', *Australian Academic & Research Libraries*, 36(4), pp. 169–179. doi:10.1080/00048623.2005.10755308.
- Kurbanoglu, S.S., Akkoyunlu, B. and Umay, A. (2006) 'Developing the information literacy self-efficacy scale', *Journal of Documentation*, 62(6), pp. 730-743–743. doi:10.1108/00220410610714949.
- Law, D. (2008). *CILIP: The Chartered Institute of Library and Information Professionals: Yearbook, 2007-2008*, *Library Review*, 57(9), pp. 730-31. doi:10.1108/00242530810911833.
- Landoy, A and Repanovici A. (2019) 'How to Explore Trends and Challenges for Building Future Libraries', *Revista Română de Biblioteconomie și Știința Informării*, 15(1), pp. 1–7. doi:10.26660/rrbsi.2019.15.1.1
- Mayer, J. et al. (2020) 'Undergraduate Student Success and Library Use: A Multimethod Approach', *College & Research Libraries*, 81(3), pp. 378–398.
- Nealcoș, A. and Chevul, T. (2016) 'Satisfacția utilizatorului de bibliotecă. Sondaj de opinie realizat la Biblioteca de Științe Economice și Gestiunea Afacerilor „Prof. Aurel Negucioiu” -- filială a B.C.U. „Lucian Blaga”. (Romanian)', *Romanian Journal of Library & Information Science / Revista Româna de Biblioteconomie si Stiinta Informarii*, 12(3/4), pp. 45–81.
- Olariu, I. (2010) 'Information science specialists face to face with library users and electronic resources: are we good enough?', *Romanian Journal of Library & Information Science / Revista Româna de Biblioteconomie si Stiinta Informarii*, 6(4), pp. 39–47
- Repanovici, A. (2012). *Ghid de cultura informației*, București: Editura ABR, 2012
- Schroth, S.T., PhD (2022) 'Information literacy', *Salem Press Encyclopedia* [Preprint].
- Schutt, R. (2006). *Investigating the social world: the process and practice of research*. Thousand Oaks: Calif.

Urquhart, C. and Rowley, J. (2007) 'Understanding student information behavior in relation to electronic information services: Lessons from longitudinal monitoring and evaluation, Part 2', *Journal of the American Society for Information Science & Technology*, 58(8), pp. 1188–1197. doi:10.1002/asi.20562.

Wilson, T.D. (2006) 'On user studies and information needs', *Journal of Documentation*, 62(6), pp. 658–670. doi:10.1108/00220410610714895.

Wilson, T. (2008). The information user: past, present and future. *Journal of information Science*, 34(4), 457-464.

Wilson, T.D. (1999) 'Models in information behavior research', *Journal of Documentation*, 55(3), pp. 249–270. doi:10.1108/EUM0000000007145.