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What We Are Learning About the Diverse Backgrounds of Academic Library Users: An Overview of Research Designs and Methods in Information Behaviour Studies

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What We Are Learning About the Diverse Backgrounds of Academic Library Users: An Overview of Research Designs and Methods in Information Behaviour Studies

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Abstract:

Academic libraries increasingly serve a more diverse population of users not only in regard to race and ethnicity, but also to age, gender, language, sexual orientation, and national and cultural backgrounds. This paper reports the findings of the study that explored information behaviour research as a potential source of information about diversity of academic library users and examined the relationship between the use of different research designs and data collection methods and the information gathered about users' diverse backgrounds. The study found that information behaviour research offers limited insight into the diversity of academic library users. The choice of a research design was not critical but the use of multiple data collection played a role in gathering information about culturally diverse users.

Keywords: Diversity, academic library users, research designs, data collection methods

Introduction

Academic libraries increasingly serve diverse groups of users not only in regard to race and ethnicity, but also to age, gender, language, sexual orientation, and national and cultural backgrounds. The student population became more diversified as more women, non-white, and older students began to attend college in the last several decades. The globalization of higher education has also contributed to the growing number of international students on American campuses and U.S. students studying abroad (ACRL, 2011). The Association of College and Research Libraries continues to recognize the changing demographics and the increasing diversity of students as the most important trends in higher education (ACRL, 2011; 2013). Academic library services have been evolving in response to the changing student population, but in order to create more inclusive communities libraries need to understand their users better and explore the research studies on cultural diversity and student backgrounds (Welburn, 2010).

College students represent one of the most extensively studied user groups in information behaviour research (Julien, Pecoskie, and Reed, 2011; McKechnie, et al., 2002). Students' information needs and information-seeking skills in the context of academic activities

constitute the main areas of focus. Diversity is not a frequent research construct, but empirical studies of information behaviour in an academic environment capture data about students' personal and educational backgrounds. Researchers examining the trends in information behaviour studies note a variety of research methods employed in empirical studies that can potentially yield rich data about students' diverse needs and backgrounds in the context of information-seeking activities. This paper examines the use of different research methods in the studies of students' information behaviour and explores the relationship between the research methods and the data gathered about students' diversity.

Understanding of Student Diversity

The understanding of diversity in the library and information science (LIS) research and academic library practice has traditionally been concerned with racial and ethnic issues, but several authors propose expanding the concept to include students from other underrepresented, underserved and non-traditional populations (Jaeger, et al., 2011, Switzer, 2008). Jaeger, et al. (2011) acknowledge that the approach focusing on race and ethnicity made sense in its historical context but with the changing student population the understanding of diversity needs to shift from the focus on simple demographics to groups that are disadvantaged and underserved in terms of access to information.

Switzer (2008) posits that diversity must be redefined to include "non-traditional" users who face educational barriers due to their abilities, age, gender or sexuality, nationality or ethnicity, and locale. She proposes a broader understanding of diversity that encompasses the traditional minority populations as well as the groups that come from the non-traditional sector, such as international students; returning, and transfer students; distance learners; at-risk students; and lesbian, gay, bisexual, and transgender students. The author persuasively argues that an all-encompassing concept of diversity is necessary to address the needs of students and to design broader diversity initiatives in academic libraries.

Jaeger, et al. (2011) proposes a concept of diversity that encompasses populations that have traditionally been mistreated and marginalized in relation to information needs and information behaviour. The proposed definition includes legally protected populations based on race, ethnicity, gender, and disability as well as groups that face access challenges related to literacy, poverty, language, sexual orientation, and age. The emphasis here is on user groups that experience barriers in access to information with the implications that information professionals should provide truly inclusive services and focus their efforts on bridging gaps and lifting access barriers.

The concept of the "non-traditional" student has been used in higher education and academic library practice to describe any student who differs from a "typical" college student; typical or traditional meaning white, middle-class, and 18-22 years old. As an umbrella term, "non-traditional" has served to capture student different characteristics with regard to age, abilities, gender/sexuality, and socio-economic background. Some authors, however, argue that the notion of the non-traditional student should be abandoned because there is no such thing as a "typical" student and the term can imply privileging "traditional" students (Budd, 2012). The student population on most campuses is overwhelmingly diverse and "everyone is a non-traditional student" (Staley and Malenfont, 2010).

The broader understanding of diversity is evident in recent publications and the position of the library professional organizations. In analysing the U.S. perspective in diversity research and library practice, Gulati (2010) notes that diversity can be defined in many different ways.

It is seen as a commitment to recognizing the variety of characteristics that make individuals unique in an atmosphere that promotes and celebrates individual and collective achievement. The Association of College and Research Libraries, in its recent publication of the diversity standards and cultural competencies for academic libraries, simply defines diversity as the “state or fact of being diverse; different characteristics and experiences that define individuals” (*Diversity Standards*, 2012). This broad understanding of diversity serves as a guiding principle for this study with diversity criteria including age, disability, ethnicity, gender, language, race, sexual orientation, and national and cultural backgrounds. The notion of underserved populations in terms of information access is particularly important as this study examines diversity in the context of students’ information behaviour.

Research Design

The Problem Statement and Research Questions

The increasing diversity of student population poses new challenges and opportunities for academic libraries in assessing students’ information needs and, consequently, in providing adequate services and creating a welcoming environment. Students arrive at university campuses not only with different backgrounds and information-seeking skills, but also with various levels of understanding of academic library services. Different cultural contexts, languages, and perceptions of libraries can create barriers to access, but also a new potential for designing a richer, more diverse library environment. Understanding students’ unique needs and information behaviours can contribute to the development of collections and services for diverse communities and in creating a more inclusive library environment.

The information behaviour research provides a rich body of empirical studies that can offer a useful insight into students’ diverse backgrounds in the context of their information-seeking activities. This study explores the following research questions: 1.) what types of research design and methods help in gaining insight into the diverse backgrounds of academic library users, and 2.) what we are learning about the diversity of users through information behaviour studies. In order to address the research questions, the author analysed publications reporting empirical research focused on the information behaviour of academic library users. The selection was limited to the publications published in library and information science literature between 2006 and 2012.

Methodology

This study consisted of two major stages: 1.) the identification of empirical studies that report research on the information behaviour of academic library users; 2.) content analysis of the sample using the following variables: demographics and diversity, research design, and data collection methods. The core list of publications was identified through a series of structured queries conducted in the Library, Information Science & Technology Abstracts (LISTA) database. A combination of subject field descriptors was used to identify the initial pool of publications. The terms “information needs,” “information-seeking behaviour,” and “information-seeking strategies” were combined with “academic libraries,” “college students,” or undergraduates. In addition, a series of Web searches were conducted to collect a sample of white papers and institutional reports that are not indexed in the LISTA database.

The initial list of results was reviewed and filtered using the following criteria: 1.) publication date between 2006 and 2012; 2.) focus on various aspects of information behaviour; 3.) academic users as study participants, and 4.) empirical studies that involve research with users and a description of the research method. The review and filtering process yielded a

total of 46 empirical studies. The final sample consisted of 44 journal articles published in research and professional journals and two white papers. The list is not comprehensive as the initial pool was derived from the publications indexed only in one database (LISTA); the other library and information science databases, such as Library and Information Science Abstracts (LISA) and Library Literature & Information Science (LLIS) were not examined. The sample represents a snapshot of information behaviour research of academic library users.

The selected publications were analysed systematically for the methodological approaches in research design, the use of data collection methods, and reporting of data on users' backgrounds and diversity. The typology of research designs (qualitative, quantitative, and mixed-method) was based on the methodology research in the library and information science (LIS) field (Pickard, 2007; Fidel, 2008; Heider and Pymm, 2008). The classification of research strategies as qualitative and quantitative is well established in the LIS field. However, the recognition of the mixed-method design is relatively new (Fidel, 2008). The mixed-method strategy implies not only a mixture of qualitative and quantitative instruments in a data collection, but also an integration of two approaches in data analysis and interpretation (Fidel, 2008).

The diversity criteria were derived from the discussion in the LIS literature, especially from the broad definitions proposed by Switzer (2008) and Jaeger, et al. (2011). The diversity criteria that were considered in the content analysis include: age, disability, gender, language, race/ethnicity, sexual orientation, international student status, student status (undergraduate vs. graduate; graduate part-time vs. full-time student), and social-economic status. Based on the publications in the sample, the last category was broken down into sub-categories, such as urban vs. suburban students; students residing on campus vs. commuters, students holding full-time jobs, and parents with young children. These specific criteria reveal information about students who in addition to attending college need to balance family and job responsibilities.

Findings

Research Designs and Data Collection Methods

The studies analysed in the sample represented the three research designs: qualitative, quantitative, and mixed-method. As Figure 1 demonstrates, slightly more than half (52%) of the studies in the sample ($N=46$) were conducted using qualitative methodology, 35% were quantitative, and a smaller number of studies (13%) undertook a mixed-method approach.

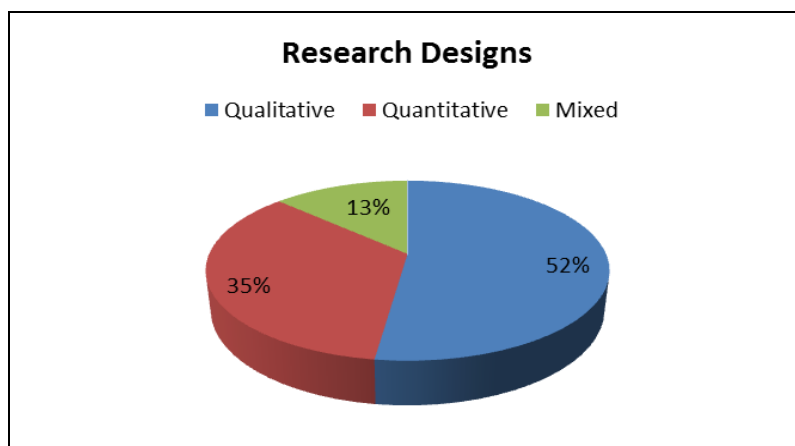


FIG. 1. Research strategies adopted in the examined studies.

The classification of research designs was challenging at times because the authors rarely discussed research paradigms or explicitly stated their positions. Thus, types of data collection techniques, approaches to data analysis, and reporting of results were considered in classifying studies as qualitative, quantitative, or mixed. On the other hand, the identification of specific data collection techniques was easier as all researchers identified the methods used in the studies. The terms for data collection methods, such as questionnaires, interviews, focus groups, etc. are used based on the terminology reported in the analysed publications.

The studies employed an array of data collection techniques with surveys/questionnaires and interviews as the most popular instruments (see Table 1). The terms questionnaire and survey were used interchangeably by researchers in the sample and this nomenclature was retained in this study. Questionnaires were used primarily in quantitative and mixed-method studies. They were also used in a few studies as a supplemental method to capture basic demographic data. Interviews were the second popular method. They were mostly used in qualitative studies to gain insight into user needs or information behaviours in libraries and were often combined with another method, such as an observation. The mixed-method studies typically combined surveys with focus groups or semi-structured interviews. One mixed-method case augmented the results from the online survey with qualitative analysis of student essays.

Table 1
Specific data collection methods used

Data Collection Methods	No.
Surveys/Questionnaires	23
Interviews	16
Focus groups	13
Observations	9
Cultural probes	3
Photo diaries	3
Thinking aloud	2
Student essays	2
Search diaries	1
Transaction logs	1
Total	73

Qualitative studies demonstrated a greater variety of data collection techniques. A combination of semi-structured interviews and observations or focus groups and observations were used in qualitative studies that examined user needs or interactions with information systems and resources. Case studies in specific institutional settings or studies that were identified as action research also used a combination of data collection methods, such as focus group interviews, observations, and questionnaires. The ethnographic studies of user behaviours and needs included a few innovative methods, such as cultural probes or photo diaries.

The analysis of publications in the sample demonstrates a wide range of methods, but that does not necessarily mean the use of multiple techniques or a combination of quantitative and

qualitative approaches. The analysis of single method vs. multiple methods shows that a surprisingly high number of studies (25 representing 54 % of the sample) employed only one data collection method (see Figure 2). The use of the single data collection method was prevalent in quantitative studies with surveys distributed online to larger populations. However, a number of qualitative studies also relied on a single data collection method, such as observations, focus groups, or interviews. Studies that employed two methods represent 33% of the sample, while 13% of the studies used three or four data collection techniques. The use of three or four methods was found in six studies, represented by four qualitative and two mixed-method studies.

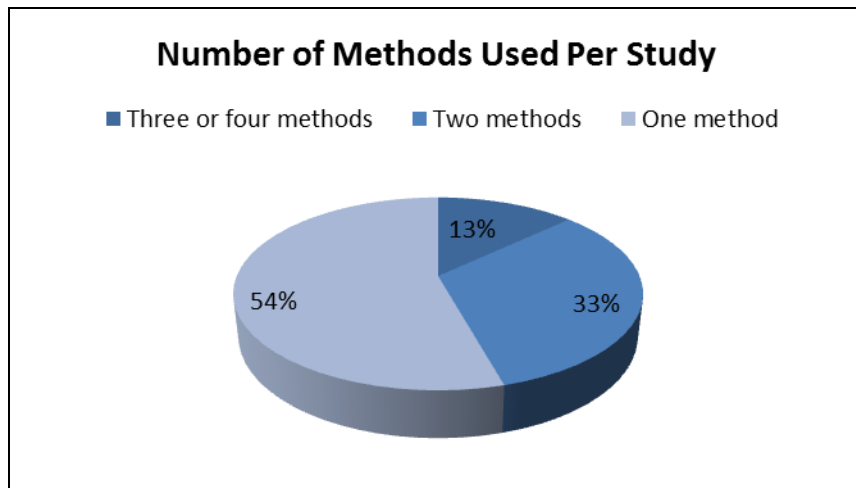


FIG. 2. Number of data collection methods used per study.

Demographic Data and Diversity Criteria

Demographic data and diversity criteria represent the second major area of content analysis of this study. The body of research in the sample was selected because of its focus on academic users, so the fact that almost all studies, 45 out of 46 in the sample, reported data on academic status of participants, did not come as a surprise. Only one study in the sample did not report any data on the academic status of the studied population. That study was undertaken as an ethnographic observation of academic library users and was not supplemented by another data collection method.

Academic Status of User Groups

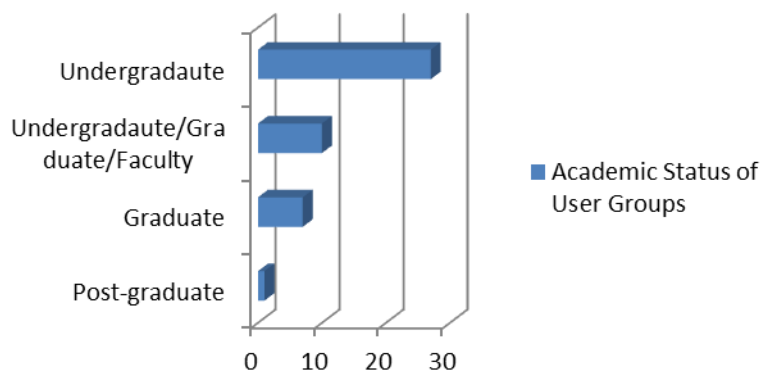


FIG.3. Academic status of user groups.

As demonstrated in Figure 3, a large number of the studies, 27 in the sample ($N=46$) focused on information needs and behaviours of undergraduate students, 10 studies examined a mixed user populations of undergraduate, graduates, and faculty, while 8 studies concentrated exclusively on graduate students. One study investigated the information behaviour of post-graduate researchers. None of the studies in the sample focused on faculty as a separate user group.

In addition to reporting the academic status, 31 studies (67%) recorded data about participant backgrounds or considered diversity as a major factor in analysing user information behaviour. However, 15 studies (33%) did not provide any other information besides identifying participants as undergraduates or graduates. As demonstrated in Figure 4, gender was recorded in 16 studies, age in 11, race/ethnicity in 10, language in 10, and international student status in 8. Students' socio-economic background was noted in a small number of studies. Employment and student full-time or part-time status were considered in two studies. The researchers in two studies reported data about students' family responsibilities, specifically asking participants whether they were parents with young children. One study looked at students' residence (urban/suburban); the other asked whether students were commuting or living on campus. One study considered sexual orientation in examining students' needs and perceptions of library services.

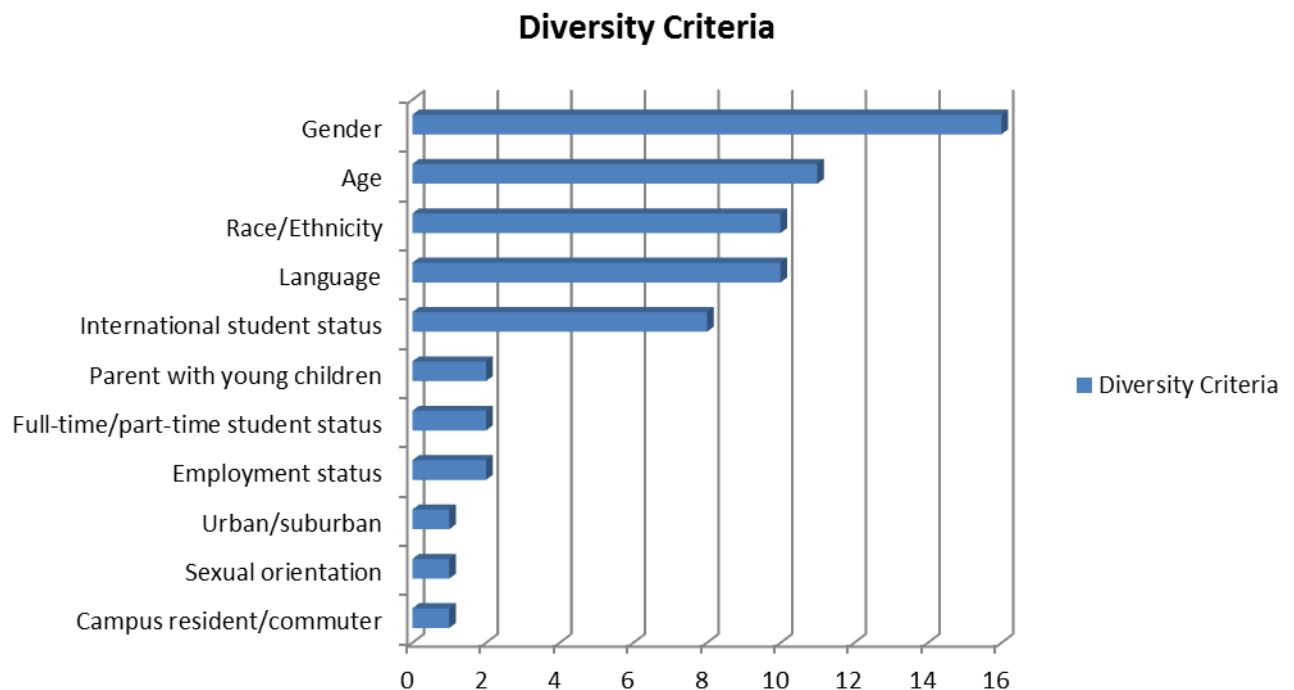


FIG. 4. Diversity criteria identified in the sample.

The demographic and diversity categories were rarely recorded as single data points. Multiple user characteristics, such as age, gender, and ethnicity would often be collected in a single study. The basic demographic data represented a common combination although the types of recorded data, the level, and consistency of reporting varied from publication to publication. The other clusters of multiple criteria included ethnicity and language, international student status and language, or ethnicity and gender. Demographic data were usually recorded on a minimum level to describe user populations under study and were rarely related to other variables or observed behaviours.

In a few studies, however, the researchers related demographic factors to the findings on user information needs or patterns in information seeking. Whitmire (2006) recorded observations on the information behaviour of African-American students and noticed the gender differences in the use of academic libraries. Rowlands and Nicholas (2008) investigated the relationship between age, gender, academic status and strategies in searching for books and found significant differences between participants. Yi (2007) examined information needs of international students and whether age, gender, and academic status affected their use of information sources at academic libraries. The study found no statistically significant relationship between the library use by international student and the demographic variables of gender and age, but the students' academic status and level of education did matter.

A small group of studies (12 representing 26% of the sample) was devoted to investigating information needs and behaviours of diverse student populations characterized by race/ethnicity (Adkins and Hussey, 2006; Haras, Lopez, and Ferry, 2008; Hudson, 2008; Shachaf and Snyder, 2007; Whitmire, 2006) international student status (Ganster, 2011; Knight, Hight, and Polfer, 2010; Liao, Finn, and Lu, 2007; Yi, 2007; Zhuo, Emanuel, and Shuqin, 2007), sexual orientation (Lupien, 2007), or urban commuter status (Brown-Sica, 2012). Adkins and Hussey (2006) and Haras, et al. (2008) examined the needs and the use of libraries by Latino students, while Shachaf and Snyder (2007) and Whitmire (2006) focused on information behaviours of African-American students.

Shachaf and Snyder (2007) conducted a study comparing information behaviour of African-American and Caucasian students in online reference interactions and discovered the differences in the type of questions asked and the follow-up interactions. Another study compared international graduate students and American graduate students and found no major differences in information-seeking strategies between the two groups (Liao, et al., 2007). However, international students, although not familiar with library services at first, tended to use libraries more often. The studies in this group represented qualitative, quantitative, and mixed-method approaches in research design and implemented surveys, observations, interviews, and focus groups as data collection techniques.

This study examined the relationship between research designs and data captured about participants' diversity, but found no significant correlation between the choice of a research strategy and the presence of diversity criteria and the extent of gathered data. The sample included the examples of both qualitative and quantitative research with no information about the participants as well as the cases with rich information about diversity. The quantitative studies, though, reported more correlation between user characteristics and information behaviour patterns. The studies undertaken with mixed-method approach tended to provide more information about user diverse backgrounds, but the sample was too small (6 studies) to make any generalizations.

Discussion

This study is inconclusive about the choice of research designs for the purpose of learning about diversity of academic users. Qualitative studies provided rich descriptions of user populations in the context of their information activities and benefitted from the investigator's direct involvement, but were usually focused on small groups. The researchers sometimes didn't have a chance to collect data on user characteristics in a systematic way if they conducted observations or ethnographic research. Quantitative studies surveyed larger populations and provide an opportunity for the correlation of demographic data and

information behaviour patterns, but were often limited to a single data collection method. The mixed-method design offered the strengths of both approaches, but its use was low in the examined sample. This finding echoes the results of Fidel's research (2008) who found the low rate of adoption of mixed-method designs in the LIS field.

The choice of data collection methods and the use of multiple methods seem to play a more important role than the qualitative vs. quantitative dilemma. The high use of questionnaires and interviews found in this study is consistent with the findings of other studies analysing information behaviour research (Julien, et al., 2011; McKechnie, et al., 2002). Questionnaires remain a popular data collection method in information behaviour research since they allow collecting data in a systematic way and reaching larger populations. On the other hand, questionnaires are limited as a research tool because of the self-reported nature of data and the lack of the context of user natural environment. Researchers also point out the limitations of using questionnaires with diverse user populations due to the cultural and gender differences in how people express their opinions (Esson, et al., 2012; Rowlands and Nicholas, 2008). Focus group discussions may work better in cultures where an emphasis is placed on collective voice rather than on an individual opinion.

Focus groups, interviews, and observations offer an opportunity to engage with users and collect rich data on their behaviours and the context of information use but are problematic in regard to capturing demographic data. The practice of investigators recording data about users' characteristics during observations is not only questionable from the point of research rigor but also poses ethical questions. Study participants should be offered a choice to identify themselves in regard to age, ethnicity, gender, and sexual orientation.

The use of multiple data collection methods offers a better opportunity to capture rich data about users and their behaviours. Using questionnaires in conjunction with observations or focus groups or supplementing interviews with questionnaires helps to address the limitations of the methods and to strengthen the results of the research. The studies in the analysed sample that used more than one method tended to report richer data about diversity of their users. However, 54 % of the studies employed a single method and that perhaps explains the limited data on the background of the studied populations.

In response to the second question posed for this study, what we are learning about the diversity of users through information behaviour studies, content analysis of the selected publications does not offer a very encouraging answer. With the exception of the studies dedicated to research of diverse groups, information behaviour studies analysed in the sample offered limited data about culturally diverse students. College students are treated as a very generic group and the studies that relate the patterns of information seeking to demographic variables are notable exceptions. As Adkins and Hussey (2006) point out, using an academic library for students from diverse cultures is not just about "finding information but also about navigating culture." As the comparative studies demonstrated, international students or students of different ethnic backgrounds might have information-seeking skills similar to their American or Caucasian colleagues, but had different understanding of library services and asked questions in a different way (Liao, et al., 2007; Shachaf and Snyder; 2007).

Understanding user different information needs and perceptions of libraries is a prerequisite to the design of library services and creating a more inclusive environment. Information behaviour research offers limited insight into the diversity of academic library users, perhaps due to a weak connection between research to professional practice (Julien, et al., 2011;

Wilson, 2008). The studies that investigated information behaviour of diverse user groups or related demographic data to user searching behaviours provided very useful findings to library practitioners. However, the number of those studies in the examined sample was low.

Conclusion

This study explored information behaviour research as a potential source of information about diversity of academic library users and examined the relationship between the use of different research designs and data collection methods and the information gathered about users' diverse backgrounds. The findings of this study indicate that empirical studies of information behaviour do not always report data on users' backgrounds or relate it to the information-seeking patterns. The studies that considered diversity as the major criterion or related demographic data to information behaviour patterns proved to be very useful in understanding the differences in user needs and behaviours. The choice of a research design does not seem to be critical. What is more important is a genuine need and interest in investigating diversity, the rigor in conducting research, and the use of multiple data collection methods.

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