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How Library and Information Science Faculty Perceive and Engage with Open Access

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How library and information science faculty perceive and engage with open access

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Abstract

This paper presents the inferential analysis of a systematic survey of North American library and information science (LIS) faculty awareness of, attitudes towards and experience with open-access scholarly publishing. The study reveals that engagement with open access is related to faculty rank and perceptions about tenure and promotion committee assessments of open-access publications. The perceived constraints of the tenure and promotion system within the academy impact LIS faculty engagement with open-access publishing in ways found in other academic disciplines. However, those who themselves engage with open access tend to assess publications in such venues more favourably than those without such publishing experience and are similarly more predisposed to believe that tenure and promotion committees would evaluate such publications favourably. Nonetheless, while in general it is clear that experience with open access reduces some of the concerns about the effects of this type of scholarly publishing on career opportunities, there remains a substantial amount of equivocacy among LIS faculty about open access.

Keywords

Faculty authors; journals; library and information science faculty; open access; open-access publishing; scholarly communication

1. Introduction

As is no doubt relatively well known among readers of this journal, sustained annual growth in the number of journals and articles over the last five or so decades, accompanied by more recent aggressive merger and acquisition activity among the major publishing conglomerates, has resulted in a contemporary multibillion dollar scholarly publishing industry dominated by a handful of commercial behemoths that extract immense resources from institutions of higher education. Industry consolidation, working in tandem with the captured demand side of the market, gave rise to what is commonly referred to as a ‘serials crisis’, which is shorthand for a double-pronged dilemma faced by academic libraries beginning in the 1990s: skyrocketing journal prices coupled with static or declining library budgets.

Partly in response to these trends in the academic publishing industry, a sustained movement has emerged over the last decade and a half that advocates for and develops open-access models for academic research. For example, the Santa Fe Convention in 1999 gave birth to the Open Archives Initiative, which was tasked originally with developing a ‘low-barrier interoperability framework’ that would facilitate access to e-print archives.¹ Soon thereafter, in December 2001, the Open Society Institute convened a conference in Budapest to interrogate issues around open access to scholarly research. This conference, which laid the foundation for the subsequent Budapest Open Access Initiative (BOAI), was one of the defining moments of the then nascent open-access movement. Indeed, the BOAI was the first internationally focused, formal statement to articulate a commitment to open access, which is defined as follows:

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By 'open access' ..., we mean its [scholarly literature] free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited. [1: para. 3]

Within a couple of years, additional international statements in support of open access emerged across a range of disciplines. For example, the Bethesda Statement on Open Access Publishing was drafted in April 2003 by a group of scientists and representatives from universities and medical institutions, funding agencies, libraries and publishers. Specific to biomedical research, this statement affirms a commitment to open-access publishing and deposit of all published work and supplemental materials in electronic repositories that ensure open access, unrestricted distribution, interoperability and long-term archiving (e.g. PubMed Central for biomedical research). At a meeting in October 2003 in Berlin, a very similar statement was adopted for sciences and humanities research (Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities).

Despite the growing awareness within universities of the increasingly unaffordable prices of journal subscriptions, faculty were slow to avail themselves of publishing opportunities in open-access venues. In order to understand why academic authors would or would not publish in open-access journals, a number of researchers began investigating faculty engagement with open access across a range of disciplines in the social sciences, humanities and natural sciences, as well as among academic librarians. Other studies sought evidence that might suggest strategies of which publishers of open-access journals could avail themselves to improve the perceptions of such journals and thus their uptake within academia. Although Library and Information Science/Studies (LIS) faculty members and a few academic librarians have participated in and undertaken some of this work, no research that focuses exclusively on LIS faculty has been conducted. This represents a significant gap in the extant literature, particularly given that access is a major fundament of both the discipline and the profession.

In an attempt to bridge this gap, this article reports the findings from a comprehensive online survey that sought to systematically ascertain North American LIS faculty awareness of, assessment of and experience with open-access scholarly publishing. Despite some notable exceptions [2–7], the majority of analyses of faculty attitudes towards open access have been limited to descriptive statistics. In order to provide a deeper analysis of LIS faculty engagement with open access, we sought to explore whether attitudes towards and experience with open-access publishing differ across respondents based on faculty rank and tenure status, beliefs about how tenure and promotion committees would assess open-access publications, experience publishing in open-access journals, knowledgeability of open access and likelihood of publishing an article in an open-access journal within a year. We also tested whether perceptions of open access accord with actual experience with open-access publishing.

Before presenting the major findings from the survey analysis, attention first turns to setting the context for the present study by selectively reviewing the work of previous researchers who have examined academic librarian and faculty attitudes towards open access across a range of disciplines. This review is followed by a brief outline of the methods employed to collect and analyze the data. With this contextual and methodological foundation established, the subsequent section of the article provides a detailed analysis of North American LIS faculty perceptions of and engagement with open-access publishing. The penultimate section of the article offers a discussion of the most relevant findings. Given the difficulties of comparing results from different surveys administered across multiple temporal and spatial spans, drawing direct comparisons between LIS and other faculty is impossible. However, where possible the discussions in these latter two sections will highlight areas of commonality and difference between LIS and other faculty in respect of scholarly communication in general and open access, in particular.

2. Literature review

Rather than engage with the full range of research that has been conducted in respect of faculty and academic librarian attitudes towards and experience with open-access publishing, this section selectively reviews those studies that are most relevant for establishing the context within which to situate the findings of the present work.

2.1. Awareness of open access

According to Xia [8], since 1994 surveys about authors' attitudes towards and experience with open-access publishing have been administered every year to academics across a wide range of disciplines and countries. Unsurprisingly, awareness of open-access journal publishing has increased substantially since the mid-1990s from around 50% to 85% by

2007. Indeed, even among those authors who had never availed themselves of open-access publishing venues, Swan and Brown [9] determined that awareness of open access was quite high (almost two-thirds of respondents). Similarly, over the last decade and a half there has been a gradual increase in the number of academics publishing in open-access journals, which, as Xia [8] points out, may be a consequence of the proliferation of open-access journals across many disciplines, as well as expanding awareness among academics of the existence of such journals. This increase in the number of authors availing themselves of open-access publication venues notwithstanding, Xia [8] argues that the rate of this form of academic publishing has yet to reach a high overall level. Although he points out that methodological and corresponding analytical challenges for comparing different surveys across time render definitive conclusions problematic, one explanation may be that scholars' support for open-access publishing may still be honoured more in theory than in practice. Indeed, as the following subsection reveals, a number of researchers have noted a disjuncture between rhetoric and practice when it comes to open-access publishing.

2.2. Attitudes towards vs actual practice with open access

A survey conducted by the University of California Office of Scholarly Communication in 2006 among a little over half of the system's faculty revealed a serious disconnect between purported attitudes and actual behaviour in respect of scholarly publishing. Although substantial numbers of respondents indicated the need for changes to the current scholarly communication system, in practice the majority of faculty members conformed to the traditional model that relies on publication in peer-reviewed, subscription-based journals [10]. Although about two-thirds of respondents claimed to be aware of or knowledgeable about Gold and Green open-access models,² only 21% had published in open-access journals and even fewer (14%) had deposited an article in an electronic subject or institutional repository [10].

Researchers who surveyed Canadian scholars in the natural sciences and engineering found that, although the principle of open access enjoys widespread support (83%), the availability of open-access options is not a driving factor among respondents when deciding on possible journals for publishing their work. In fact, an open-access option was found to be 8 times less important than impact factor and 13 times less important than journal reputation as a decision criterion for selecting a publication venue [11]. Moreover, support in principle for open access is not reflected in actual publishing practices, as demonstrated by the fact that only 25% of respondents' research had been published in an open-access or hybrid journal in the previous 2 years (although 43% of survey participants reported publishing at least one piece of research in one of these venues in the previous 2 years). Similarly, only 28% of the research produced by survey participants had been deposited in electronic repositories.

Research on behalf of the Taylor & Francis Research and Business Intelligence Department determined that, although 66% of respondents agreed to some extent that all research outputs should be available for free online and slightly more (67%) agreed that the dissemination of research should not be monetized in any way, only 40% of respondents actively chose to publish in open-access journals; 22 and 34%, respectively, rarely or never actively published in open-access journals [12]. Similarly, Dalton [13] found that open-access options (both Green and Gold) ranked relatively low among the factors LIS practitioner and academic authors consider when contemplating publication venues.

These findings align with those of Carter et al. [7], who determined that there is a disconnect between the levels of open-access advocacy and actual self-archiving practices among faculty librarians. Only 12% of their respondents had self-archived any of their publications, which, the authors point out, compares unfavourably with levels of self-archiving reported by survey participants in a major international study undertaken by Rowlands et al. [14]. The Carter et al. study [7], which is one of the few to engage in inferential statistical analyses, found no significant differences in publishing activity between tenure-track and tenured faculty librarians. Ultimately, these researchers concluded that faculty librarian practices as authors fail to live up to the exhortations about open access articulated by faculty librarians as practitioners [7].

Mercer [15] has also investigated the actual practices of academic librarians in respect of open-access publishing and self-archiving. Based on an analysis of LIS peer-reviewed articles published in English in 2008, Mercer [15] asserts that academic librarians are not maximising their use of electronic repositories. For example, 49% of the articles published by academic librarians in 2008 were available open access, which is higher than the rate of open access for articles written by other LIS authors (37%). Nonetheless, just over 58% of the articles written by academic librarians would have been eligible for open access at the time of publication. This divergence between what is made available open access and what would be permissible under publisher policies was even higher for other LIS authors (73% of the articles surveyed could have been made open access at the time of publication) [15].

Xia et al. [5] examined electronic availability of articles from 20 top-ranked LIS journals in 2006 to determine whether there are differences in self-archiving practices between librarians and LIS faculty. Employing logistic regression, these authors were unable to detect any statistically significant difference between librarian and faculty authors in

making their research open access through self-archiving. Moreover, Xia et al. [5] maintain that librarians have not noticeably expanded their engagement with self-archiving. What these studies demonstrate is that the dual role of academic librarians as library professional and researcher provokes a contradictory dichotomy in which their natural professional championing of open access collides with and is subverted by the practice of their research functions. Indeed, as several of the studies outlined below reveal, much of this disconnect between claimed support for open access and actual publication practices can be traced to anxiety among faculty about the impact of open-access publishing on their careers.

2.3. Open access and career prospects

Swan and Brown [9] determined that 40% of open-access authors and 42% of non-open-access authors rated as important concerns about open-access journals adversely affecting chances of appointment and promotion. Other researchers have similarly ascertained that the perceptions and realities of the tenure and promotion system exercise a strong braking effect on the uptake of open-access publishing among faculty. Harley et al. [16] concluded that such institutional inertia, coupled with perceptions that electronic publishing lacks rigorous peer review and is thus of lower quality and prestige, has meant that conventional, high status print publications remain the preferred scholarly communication venue among a majority of academics. According to Schonfeld and Housewright [17], most of their faculty respondents prioritized only those activities that would be assessed favourably by promotion and tenure committees. In fact, about one-third of their participants strongly agreed that tenure and promotion practices unnecessarily constrain faculty publishing choices. Similarly, although Moore [18] found evidence of emerging forms of digital scholarship, the constraints of the merit and tenure and promotion processes were perceived by faculty at the University of Toronto as reinforcing the traditional publishing system. However, beyond career considerations, substantial numbers of faculty have indicated additional, related concerns about open-access journals.

2.4. Obstacles to widespread faculty adoption of open-access publishing

According to Swan and Brown [9], those authors who have never availed themselves of open-access journals perceive such venues as having a smaller number of readers and thus lower citation rates, and generally possessing lower prestige and quality than traditional journal publications. The overwhelming reason, however, why these authors have not published in open-access journals is their unfamiliarity with any suitable venues in their fields [9]. In a random sample of scientists within 11 different subject domains in the USA, Park [4] found that researchers across faculty ranks who were less familiar with open-access publishing tended to be less confident about publishing in such journals.

Although their small study was limited to semi-structured interviews with 14 biomedical faculty members, Warlick and Vaughan [19] found that impact factor, target audience and speed of publication of a journal were the leading considerations driving authors' decisions about where to publish their work. Most of their respondents believed that open-access journals have lower impact factors than traditional journals. In an earlier survey among business school faculty, Palmer et al. [6] determined that, overall, respondents did not consider electronic journals to be of the same quality as their print comparators. In one of the few studies that advanced beyond descriptive analysis of their findings, Palmer et al. [6] found no statistically significant differences across age or faculty rank of respondents with regard to perceptions of electronic journals. Frass et al. [12] similarly found that 34% of respondents agreed to some degree that open-access journals are of lower quality, 30% believed that open-access journals have lower production standards than subscription journals and 16% agreed to some degree that open-access publication provides no fundamental benefits.

A study commissioned by the UK Publishers Association found that authors from countries in which open access was not widespread tended to associate open-access journals with ephemeral publishing, poor archiving and low prospects for career advancement [14, 20]. According to these researchers, one of the biggest findings from their survey was the high level of ignorance among scholars about open-access publishing: 'There is clearly a need for the publishing community to raise awareness of these issues and to sensitize a largely complacent author population' [14: 273]. Despite the multiple sources of disquietude articulated by faculty in respect of open-access publishing, several researchers have determined that those authors who have experience with open-access journals tend not to attribute such concerns to this modality of academic publishing and instead emphasize its benefits over the traditional model.

2.5. Why faculty choose to publish in open-access journals

Indeed, one of the more interesting, albeit not altogether unsurprising, findings made by Swan and Brown [9] is the almost polar opposite perceptions about open-access publishing among those who have published in such venues as compared with those who have not. Among those with open-access publishing experience, the predominant motivation

was a commitment to the principle of free access to research, followed by perceived rapid speed of publication, which is presumed to increase the readership base and hence citation rates of articles. Although the rank order was reversed, Creaser [21] similarly found that these two desiderata were most important for motivating authors to publish in open-access journals. A majority of authors with open-access experience also perceived the open-access journals in which they published to enjoy higher prestige and quality than traditional journals in their fields [9, 21]. Research conducted among authors who had published in any of Taylor & Francis's journals in 2011 revealed similar findings: the top three cited potential advantages of open-access publication were, in order of agreement, wider circulation, faster publication and higher visibility than subscription journals [12].

As might be anticipated, authors who had experience with open access were found to believe that peer-review standards are as rigorous in open-access journals as they are in traditional journals [6, 9]. Palmer et al. [6] further determined that those faculty who read electronic journals were less likely to attribute peer-review problems to such publication venues. These same researchers ascertained that awareness of and experience with electronic journals influenced positively both individual and institutional (promotion and tenure committees) perceptions of electronic publishing. Based on their analyses, Palmer et al. [6] suggested that the content delivery mechanism (print or electronic) might be much less important for academics than the quality and perceived legitimacy of the journal itself.

2.6. Green open access

Interestingly, Swan and Brown [9] found that Green open access (deposit in an electronic repository) was not well known among respondents and only small minorities (around 10%) had ever self-archived their articles in an institutional or subject-specific repository. Respondents claimed a willingness to deposit in electronic repositories if available (87% among open-access authors and 77% among non-open-access authors) but, as Swan and Brown [9] pointed out, evidence from champions of Green open access demonstrates that authors are not highly motivated to comply, largely owing to purported torpor within the academy at the level of both authors and institutions. According to results from a survey conducted by ITHAKA among faculty at various American universities, only a little less than 30% of respondents had actually deposited any research output into an electronic repository, although almost 80% indicated that they were likely to make such a deposit in the future [17]. Such findings reinforce the importance of repository deposit mandates, which, as Gargouri et al. [22] maintain, can triple the rate of Green open access.

Creaser [21] similarly reported that a sizable number of the academics who participated in her survey were unfamiliar with their institutions' policies in respect of open access, let alone whether the institution maintained an institutional repository (43%). In fact, only 24% of research respondents employed at institutions that had an open-access policy in place were aware of it. Although substantial levels of ignorance about institutional repositories and policies remained, Creaser [21] pointed out that this level represents an improvement over results from a 2005 survey in which over 70% of academics reported that they did not know whether their institution had an electronic repository.

3. Methods

In order to respond to the study's overarching goal of determining and analysing LIS faculty attitudes towards and experience with open access, data were collected using a self-administered web survey. The survey instrument was adapted from a survey developed and executed by Alma Swan and Sheridan Brown in 2004 in the UK. The web survey was created and administered using Qualtrics online survey software. The survey instrument is reproduced in Appendix 1.

Given the relatively small population size and typical problems with low response rates for surveys, it was decided to send the survey to all North American faculty members (excluding Puerto Rico) rather than develop a random sample of participants. The American Library Association maintains a database of all accredited LIS programs in North America. The public websites of each school were consulted to obtain the email addresses of all tenured and tenure-track faculty members to be included in the survey. Since most adjunct faculty are not required to publish as part of their position, these faculty members were not included in the survey. Given the nature of the discipline, it was assumed that the American Library Association database and the faculty information contained on individual school websites were accurate and current. A final list of 1017 faculty member emails was compiled and loaded into Qualtrics. This population comprised 316 assistant professors, 304 associate professors, 262 full professors, 134 professors emeriti and one professional faculty member whose rank was unspecified. The decision to include professors emeriti was made to ensure breadth of participation. This decision may have been somewhat ill-considered. As a number of emails sent directly from retired faculty members declining participation made clear, many have not been involved in publishing for quite some time and thus did not feel well placed to offer any insights on the topic.

Subsequent to study approval by the authors' Institutional Review Board, all members of this population were sent an email explaining the purpose and goals of the study and inviting completion of the survey. Those who accepted the invitation were asked to follow the provided URL to access and complete the survey. Survey participants were similarly informed that participation was completely voluntary and confidential. Participants were guaranteed that no response data would be linked back to their identity during either the analysis or reporting and write-up stages of the project. The survey was open for a total of 6 weeks. Reminder emails were sent twice, at 2 week intervals, to those study participants who had not yet completed the survey. As an additional confidentiality safeguard, this reminder process was done automatically using Qualtrics survey software.

The survey instrument was pre-trialled and subsequently modified slightly before being distributed to the entire population. The instrument was translated into French in order to facilitate inclusion of faculty members in Quebec. However, it was determined that the translation was sub-optimal and therefore participants from Quebec were sent the English version. The instrument contained 51 questions, although several of these were comprised of multiple sub-questions. Most of the questions employed agree/disagree, Likert-scale or ranking response categories. Some questions offered participants the opportunity to provide additional detail. Respondents were able to skip any questions to which they did not wish to respond. Based on pre-trialling, completion of the survey was projected to require up to 25 min. As part of the effort to guarantee confidentiality, the researcher did not track time required by individual participants. A total of 276 surveys were completed, which yields a response rate of just over 27%.

With the exception of emeriti faculty, the distribution of respondents according to faculty rank matches fairly closely the distribution of faculty ranks found in the broader population. Assistant and associate professors are slightly over-represented (35 and 34%, respectively, completed the survey and these ranks comprise, respectively, 31 and 30% of the population). Full professors are very slightly under-represented (25% completed the survey and this rank makes up 26% of the broader population). However, slightly less than 5% of the responses come from professors emeriti, although they comprise 13% of the population. An analysis of the standardized residuals of a chi-square goodness of fit test confirms that, although the overall distribution of faculty ranks among survey respondents does not completely match the proportions found within the broader population, it is only the other (emeriti) category that is significantly different than its corresponding population proportion ($\chi^2(3, N = 275) = 18.02, p < 0.001$). As already alluded to, it might make sense not to include retired faculty members should this survey be conducted again in the future.

Since the majority of questions contained in the survey elicited responses on an ordinal scale of measurement, the statistical analyses were conducted using chi-square tests for independence or goodness of fit. All tests were run using SPSS 22 and were considered significant at an alpha level < 0.05 . In addition to the relevant chi-square statistics, in several instances we also provide, for descriptive purposes only, the percentages of respondents falling into particular categories on the respective variables being analyzed. In order not to violate the expected cell counts requirement of chi-square tests, several questions were recoded to combine semantically similar response categories. For example, the typical Likert scale of 'strongly agree', 'agree', 'neither agree nor disagree', 'disagree' and 'strongly disagree' was collapsed into 'agree/strongly agree', 'neither agree nor disagree' and 'disagree/strongly disagree'. Similarly, the original response categories of 'very important', 'important', 'not very important' and 'not at all important' were transformed into 'very important/important' and 'not very important/not at all important'. Appendix 2 provides a full elaboration of how the various response categories were collapsed for analysis.

4. Findings³

4.1. Experience with open-access publishing

While 80% of respondents had submitted a manuscript or had an article published in a subscription-based journal in the 12 months prior to the survey, only 37% had done the same in an open-access journal. However, from a longer-term perspective this proportion is higher, with 53% of respondents having published at least once in an open-access journal. This difference, of course, begs the question of whether LIS faculty have reduced their engagement with open-access publishing or whether this is, instead, a reflection of the somewhat desultory nature of the scholarly publishing cycle.

Assistant professors (74%) are the most likely across all faculty ranks to agree to some extent that all scholarly articles should be free for everyone to access online, followed by associate professors (62%), full professors (59%) and professors emeriti (8%). Analysis of the adjusted residuals indicates that assistant professors and professors emeriti contribute significantly to this relationship, with assistant professors more likely than expected to agree and professors emeriti more likely than expected to disagree ($\chi^2(6, N = 272) = 21.95, p = 0.001$, Cramér's $V = 0.20$). Faculty rank is similarly associated with engagement in open-access publishing ($\chi^2(3, N = 256) = 20.49, p < 0.001$, Cramér's $V = 0.28$). However, the residuals reveal that assistant professors and professors emeriti are less likely than expected to have published in an

open-access journal while associate and full professors have published more often than expected in such venues. Analysis of the adjusted residuals indicates that the cells for assistant professors, full professors and professors emeriti contribute significantly to the relationship between faculty rank and publication experience in an open-access journal. These relationships suggest that, similar to what other researchers have found among academic librarians, there is a disconnect between beliefs about accessibility of research and actual practice with open access among tenure-track faculty.

As also found in other disciplines, experience with open-access publishing among LIS faculty is positively associated with knowledgeability about institutional repositories ($\chi^2(1, N = 254) = 7.00, p = 0.008$, Cramér's $V = 0.17$), disciplinary repositories ($\chi^2(1, N = 254) = 12.26, p < 0.001$, Cramér's $V = 0.22$) and open-access journals ($\chi^2(1, N = 253) = 10.51, p = 0.001$, Cramér's $V = 0.20$). Put another way, LIS faculty who claim to be knowledgeable about these various forms of open access are more likely to have published in an open-access journal than their colleagues who are not very knowledgeable about open access. Nonetheless, and as might be expected for the LIS discipline and the more than a decade now of experience with open access, descriptive statistics reveal that a majority of respondents claims to be knowledgeable or very knowledgeable about institutional repositories (73%), disciplinary repositories (57%) and fully open-access journals (77%).

A majority (57%) of respondents claims to be likely or very likely to publish at least one article in an open-access journal within a year, while 29% are not very likely to do so and 5% will not. As might be expected, experience with open-access publishing is strongly associated with the proclaimed likelihood of LIS faculty publishing at least one article in an open-access journal within the next year ($\chi^2(2, N = 255) = 85.09, p < 0.001$, Cramér's $V = 0.58$). Whereas 81% of those respondents who have already published an open-access article are likely or very likely to publish in an open-access journal within a year, this proportion falls to slightly less than 27% among those who have not already published in an open-access journal. Conversely, almost 65% of those LIS faculty who have not published in an open-access journal claim to be unlikely to or will not do so within the next 12 months, as compared with only 11% of those who have already published open access. Roughly 8% of respondents in both groups (those who have and those who have not published in an open-access journal) are unsure whether they will publish an article open access in the next 12 months. This relationship raises some critical questions about how to entice non-open-access authors to engage with open-access publishing.

In order to provide evidence that might help respond to such questions, respondents who have never published in an open-access journal were asked to rate the degree to which they agreed or disagreed with 16 possible reasons for not engaging with this modality of academic publishing. The highest ranked and statistically significant impediments to engaging with open access are the following: (1) an objection in principle to paying a fee to publish in an open-access journal (57%); (2) a perception that open-access journals in the relevant field have slower publication times than traditional journals (49%); (c) a perception that open-access journals in the relevant field have low impact (46%); (d) a perception that open-access journals in the relevant field have low prestige (44%); and (e) an inability to identify any open-access journals in which to publish (40%) and an inability to find funds to pay the publication fee for open-access journals (40%). As outlined in the literature review section, a number of these reasons for avoiding open-access publishing are common across disciplinary boundaries. However, and on a promising prospective note, an overwhelming majority (75%) of these respondents would publish their work in an open-access journal if they could identify one that overcame the reasons that have thus far hindered their engagement with such publishing venues ($\chi^2(2, N = 108) = 86.72, p < 0.001$).

4.2. Deposit of research outputs in electronic repositories

Recent deposition of scholarly output in electronic repositories is not widespread among LIS faculty, with only 35% having deposited an article and 24% having deposited some other research output, such as working papers and technical reports, during the year prior to the survey. However, the proportion of deposition is higher when considered over a longer time frame; 50% of respondents indicate that they have deposited at least one research output in an electronic repository at one time or another. Looking forward one year, 36% of survey participants expect to increase the number of articles they deposit in electronic repositories. Those LIS faculty who have published their work in an open-access journal (63%) are significantly more likely than their colleagues who have not published open access (36%) to have deposited any of their research outputs in an electronic repository ($\chi^2(1, N = 250) = 18.42, p < 0.001$, Cramér's $V = 0.27$).

Although deposition of research outputs into an electronic repository is not significantly different across faculty ranks, among those who have deposited research outputs in an electronic repository, untenured LIS faculty members (62%) are significantly more likely than their tenured colleagues (29%) to consider important the role such a deposit plays in improving their tenure and/or promotion prospects ($\chi^2(1, N = 126) = 12.91, p < 0.001$, Cramér's $V = 0.32$). Similarly, when those respondents who have not previously deposited their work in an electronic repository were asked

what factors might motivate them to engage in this form of open access, the potentially improved prospects for tenure and promotion were found to motivate significantly more untenured (82%) than tenured faculty (34%) to make such a deposit ($\chi^2(1, N = 118) = 25.70, p < 0.001$, Cramér's $V = 0.47$). These medium effect relationships suggest that untenured faculty may be engaging more strategically with Green open access as a tool in their efforts to achieve tenure.

4.3. Faculty perceptions of open-access journals

As outlined above in the literature review section, open-access journals have often been perceived as being of lower quality than subscription-based journals. Similarly, there has been significant debate about whether citation advantages accrue to open-access journals. Among all survey participants, almost one in five (19%) believes that open-access journals are lower quality than subscription-based journals, while 42% of respondents disagree and 37% neither agree nor disagree. Similarly, many respondents (47%) are unsure about whether open-access journals enjoy any citation advantages over traditional journals, while 32% of participants disagree and only 18% agree.

This section outlines how such perceptions and beliefs about open-access journals differ among LIS faculty based on tenure status, professed levels of knowledgeability about open access and likelihood of publishing in an open-access journal within a year of the survey. Somewhat surprisingly, we did not detect statistically significant relationships between faculty member assessments of open-access journals and actual experience publishing work in such journals.

4.3.1. Perceived quality differences between open-access journals and subscription-based journals. LIS faculty knowledgeable about institutional repositories ($\chi^2(2, N = 267) = 6.99, p = 0.030$, Cramér's $V = 0.16$), disciplinary repositories ($\chi^2(2, N = 267) = 14.09, p = 0.001$, Cramér's $V = 0.23$), and open-access journals ($\chi^2(2, N = 266) = 8.71, p = 0.013$, Cramér's $V = 0.18$) are more likely than their less knowledgeable colleagues to disagree to some extent that open-access journals are of lower quality than subscription-based journals. Similarly, LIS faculty who are more knowledgeable about disciplinary repositories (45% of knowledgeable vs 26% of less knowledgeable respondents; $\chi^2(2, N = 268) = 10.73, p = 0.005$, Cramér's $V = 0.20$) and open-access journals (42% of knowledgeable vs 21% of less knowledgeable respondents; $\chi^2(2, N = 267) = 10.19, p = 0.006$, Cramér's $V = 0.20$) are also more likely than those less knowledgeable about these two forms of open access to disagree that open-access journals have lower production standards than subscription-based journals.

Those respondents more likely to publish an open-access article within a year tend to be more likely to disagree that open-access journals are of lower quality ($\chi^2(4, N = 267) = 29.21, p < 0.001$, Cramér's $V = 0.23$) or have lower production standards than subscription-based journals ($\chi^2(4, N = 268) = 18.42, p = 0.001$, Cramér's $V = 0.19$). However, it must be noted that 32% of those likely to publish in an open-access journal within a year neither agree nor disagree that such journals are of lower quality than subscription-based journals. Moreover, although less than 8% of the overall sample, 65% of those respondents unsure whether they will publish in an open-access journal within 12 months also neither agree nor disagree about both quality and production standards of open-access publications. All of these cells contribute significantly to these two relationships.

As might similarly be expected given such findings, those LIS faculty who are knowledgeable about open-access journals (57%) are more likely than those not very knowledgeable (44%) to evaluate a publication in an open-access, peer-reviewed journal as being comparable in quality to an article in a traditional subscription-based, peer-reviewed journal ($\chi^2(3, N = 267) = 10.30, p = 0.02$, Cramér's $V = 0.20$). However, faculty assessments of the quality of articles published in open-access journals as compared with traditional journals are not significantly related to knowledgeability about either institutional or subject repositories. Those who disagree to some extent that publishing in open-access journals may limit the potential impact of their work (63%) are more likely than those who agree with this statement (30%) to consider a publication in an open-access journal as being comparable to one published in a traditional journal ($\chi^2(6, N = 263) = 43.8, p < 0.001$, Cramér's $V = 0.29$). Similarly, those respondents who claim to be likely to publish at least one article in an open-access journal within the following 12 months (59%) are more likely than those with no such immediate future plans (44%) to consider open-access publications as being comparable in quality to publications in traditional journals ($\chi^2(6, N = 268) = 23.78, p = 0.001$, Cramér's $V = 0.21$). What all of these relationships suggest is that those who are more knowledgeable about or who have experience publishing in open-access journals are more likely to think that the quality and production standards of such venues, as well as the articles published therein, are comparable to traditional, subscription-based journals.

4.3.2. Perceived citation advantages of open-access publications. Although the relationship is weak, untenured LIS faculty (27%) are more likely than their tenured colleagues (14%) to agree that open-access journals are cited more heavily than

subscription-based journals ($\chi^2(2, N = 266) = 7.66, p = 0.022$, Cramér's $V = 0.17$). While more people in both groups disagree about any citation advantage for open-access journals (28 and 36% of untenured and tenured faculty, respectively) and even higher proportions of both untenured (45%) and tenured LIS faculty (51%) remain uncertain, analysis of the adjusted residuals reveals that none of these latter four cells contribute significantly to the relationship. Indeed, a number of the analyses of perceptions about open-access journals are characterized by pronounced levels of uncertainty. Since, in most cases, these cells do not contribute significantly to the relationships found, they are not reported here. Nonetheless, in the discussion section we will revisit this to consider what such uncertainty might mean for LIS faculty engagement with open access.

Those LIS faculty members who claim to be knowledgeable about institutional repositories ($\chi^2(2, N = 267) = 8.68, p = 0.013$, Cramér's $V = 0.18$), disciplinary repositories ($\chi^2(2, N = 267) = 8.80, p = 0.012$, Cramér's $V = 0.18$) and open-access journals ($\chi^2(2, N = 266) = 6.34, p = 0.042$, Cramér's $V = 0.15$) are more likely than their not very knowledgeable colleagues to agree to some extent that open-access journals are cited more heavily than subscription-based journals. It is interesting to note that sizable proportions of respondents knowledgeable about institutional repositories (30%), disciplinary repositories (30%) and open-access journals (31%) disagree that open-access journals are cited more heavily than subscription-based journals, although the only cell that contributes significantly to these relationships is the one for respondents knowledgeable about institutional repositories who disagree about citation advantages for open-access articles.

Similarly, those LIS faculty likely to publish open access within a year (27%) are more likely than those who do not think they will do so (8%) to agree that open-access journals are cited more heavily than subscription-based journals ($\chi^2(4, N = 267) = 21.16, p < 0.001$, Cramér's $V = 0.20$). However, a statistically significant large proportion (75%) of those survey participants who indicate they are unsure whether they will publish in an open-access journal within 12 months remains uncertain about this possible advantage of open-access publications. That is, authors not yet convinced that open-access journals enjoy citation advantages are more equivocal about availing themselves of such publishing venues.

4.4. Faculty perceptions about open access and career prospects

Compared with many of their colleagues in other disciplines, as demonstrated by previous research outlined above, fewer LIS faculty are likely to believe that open access will negatively impact their career prospects. As might be expected, publication experience with open-access journals reduces such anxiety even further. Whereas approximately 37% of respondents who have not published in an open-access journal indicate that they disagree or strongly disagree with the statement that publishing their work in open-access journals may adversely affect their career, this percentage increases significantly to almost 62% among those LIS faculty who have published an open-access article ($\chi^2(2, N = 248) = 23.72, p < 0.001$, Cramér's $V = 0.31$). Open-access authors (14%) are similarly less likely than their non-open-access colleagues (30%) to agree to some extent that open-access publishing may adversely impact their chances of winning research grants ($\chi^2(2, N = 248) = 14.06, p = 0.001$, Cramér's $V = 0.24$).

Similar relationships were found in respect of faculty assessments of open-access publications. Those faculty who, themselves, evaluate articles in open-access journals as comparable to publications in traditional, subscription-based journals are less likely than those who assess open-access publications less favourably to agree to some extent that publishing their work in open-access journals may adversely affect their career (15 and 40% agreement, respectively; $\chi^2(6, N = 263) = 21.76, p = 0.001$, Cramér's $V = 0.20$) or their chances of winning research grants (15 and 41% agreement, respectively; $\chi^2(6, N = 263) = 23.63, p = 0.001$, Cramér's $V = 0.21$). Put another way, LIS faculty who believe open-access publications are of quality comparable to publications in traditional journals tend to be less concerned that publishing their work in open-access journals may adversely affect their career or research funding prospects.

Untenured LIS faculty (37%) are more likely than tenured faculty (12%) to agree to some extent that publishing their work in open-access journals may adversely affect their careers, although, interestingly, more tenured (33%) than untenured faculty (19%) appear uncertain about this possible impact ($\chi^2(2, N = 263) = 23.84, p < 0.001$, Cramér's $V = 0.30$). The cells for agreement with and uncertainty about this statement across both tenure statuses contribute significantly to the relationship found. As one of the few instances in which respondents who neither agree nor disagree about a possible impact of open access contribute significantly to the relationship found, these results suggest that beyond career concerns among faculty on the tenure-track, significant numbers of those faculty who have already achieved tenure status remain equivocal about the career impacts of open-access publishing. Given these findings, it is not surprising that there exists some disquietude among LIS faculty about how tenure and promotion committees would assess open-access publications.

4.4.1. Faculty perceptions about how tenure and promotion committees would evaluate open-access publications. Similar to findings from a number of previous surveys among faculty members in other disciplines, significant proportions of LIS faculty believe that tenure and promotion committees are dubious about the quality of open-access journals. Among all respondents, only 34% of respondents think that a tenure and promotion committee would consider open-access publications as being of a quality comparable to publications in a traditional journal, while 44% believe that open-access publications would be evaluated less favourably. Only slightly more than 1% of respondents believe that their faculty colleagues would evaluate open-access publications more favourably than traditional publications for tenure and promotion decisions, while approximately 18% remain uncertain (a sizable proportion that may be indicative of the ‘black box’ that is the tenure and promotion process for many academics). This very low proportion of respondents who believe that tenure and promotion committees would evaluate publications in open-access journals more favourably than articles in traditional, subscription-based journals results in expected cell count violations of more than 20% for all of the tests run using this variable. For this reason, we dropped this category from the analyses outlined in this subsection.

When considered across faculty ranks, professors emeriti (69%) are most likely to believe that tenure and promotion committees would evaluate publications in open-access journals less favourably than publications in subscription-based journals, followed by assistant professors (49%), associate professors (43%) and full professors (34%). These differences across faculty ranks in perceptions about how tenure and promotion committees would evaluate publications in open-access journals are statistically significant, although the effect is small ($\chi^2(6, N = 267) = 13.59, p = 0.035$, Cramér’s $V = 0.16$). In terms of which cells contribute to this relationship, analysis of the adjusted residuals indicates that significantly fewer than expected assistant professors think tenure and promotion committees would evaluate a publication in an open-access journal as being comparable in quality to a publication in a traditional journal while the reverse is true for full professors, who are also significantly less likely than expected to believe that tenure and promotion committees would consider open-access publications less favourably. This finding also aligns with actual engagement with open-access publishing across faculty ranks, as outlined previously.

Similarly, LIS faculty who claim to be more knowledgeable about open-access journals (39%) are more inclined than their not very knowledgeable colleagues (24%) to believe that tenure and promotion committees at their institution would consider open-access publications as being of quality comparable to publications in a traditional journal ($\chi^2(2, N = 265) = 8.94, p = 0.011$, Cramér’s $V = 0.18$). However, sizable numbers of even knowledgeable LIS faculty either believe that tenure and promotion committees would evaluate open-access publications less favourably than an article in a traditional journal (41%) or are unsure (20%), although those unsure do not contribute significantly to the relationship found. Beliefs about how tenure and promotion committees would assess articles published in open-access journals as compared with traditional journals are not significantly related to knowledgeability about either institutional or subject repositories.

Perceptions about how tenure and promotion committees would evaluate open-access publications were also found to be associated with whether or not a respondent had actually published in an open-access venue. Although the effect is small, those who have experience with open-access publishing (42%) are more likely than their non-open-access colleagues (26%) to believe that tenure and promotion committees would assess open-access publications as being of quality comparable to articles in a subscription-based journal ($\chi^2(2, N = 252) = 9.32, p = 0.009$, Cramér’s $V = 0.19$). Similarly, those LIS faculty who indicate that they will publish at least one open-access article within a year are more likely (42%) than those who have no immediate future plans to publish in an open-access journal (23%) to believe that a tenure and promotion committee at their institution would evaluate such a publication as comparable to one in a traditional journal ($\chi^2(4, N = 266) = 16.21, p = 0.003$, Cramér’s $V = 0.18$). Rather interesting, and a significant contributor to this relationship, is that 38% of respondents plan to publish in an open-access journal even though they believe that a tenure and promotion committee is unlikely to evaluate such a publication venue favourably.

Those LIS faculty who themselves consider peer-reviewed open-access publications to be comparable to traditional, subscription-based peer-reviewed publications (55%) are significantly more likely than those who would assess open-access publications unfavourably (14%) to believe that a tenure and promotion committee at their institution would evaluate an open-access article as being comparable to a traditional, subscription-based peer-reviewed publication ($\chi^2(6, N = 265) = 92.74, p < 0.001$, Cramér’s $V = 0.42$).

5. Discussion

As outlined at the outset of this article, we sought to explore whether attitudes towards and experience with open-access publishing differ across respondents based on faculty rank and tenure status, beliefs about how tenure and promotion committees would assess open-access publications, experience publishing in open-access journals, knowledgeability of the different types of open access and likelihood of publishing an article in an open-access journal within a year.

Somewhat surprisingly, we did not detect a statistically significant relationship between a faculty member's assessment of open-access journals and actual experience publishing work in such a journal.

Engagement with open access was found to be related to faculty rank and perceptions about tenure and promotion committee assessments of open-access publications. Although it was found that untenured LIS faculty attribute higher levels of importance to the free accessibility of research than their tenured colleagues, actual experience with open-access publishing reveals the opposite. That is, full professors are more likely than assistant professors to publish in an open-access journal. There are a couple of possible explanations for the seeming disconnect between rhetoric and practice. First, more senior faculty are likely to have published more articles than newer faculty, thereby increasing the chances that one of those publications was in an open-access journal. Second, and an explanation that aligns closely with the results presented above about perceptions of open access during the tenure process, it is quite possible that faculty are not as willing to publish in open-access journals until after securing tenure.

Indeed, although across all faculty ranks only minorities express concern that publishing their work in open-access journals may negatively impact their career prospects, those on the tenure-track are significantly more likely than their tenured colleagues to perceive such publishing venues as risky for their careers. The perceived constraints of the contemporary tenure and promotion system of the academy may account for some of this disquietude; assistant professors are more likely than full professors to believe that tenure and promotion committees would not regard open-access publications favourably. That having been said, a number of respondents across all faculty ranks remain unsure about how tenure and promotion committees would evaluate open-access publications (24% of assistant professors, 16% of full professors and 15% of associate professors). These levels of uncertainty, while not statistically significant for the relationship found, suggest that promotion and, particularly, tenure processes remain opaque for sizable numbers of LIS faculty. Tenured faculty members who comprise tenure and promotion committees, especially full professors who are more likely to avail themselves of open-access publishing opportunities, might thus consider engaging in more conversations about open access with their tenure-track colleagues in ways that reassure the latter about the appropriateness of this model of academic publishing for tenure decisions. Even better would be clarification and codification of the criteria employed by tenure and promotion committees to assess open-access publications.

Indeed, these suggestions assume added import when considered in tandem with the findings that those who themselves engage with open access tend to assess publications in such venues more favourably than those without such publishing experience and are similarly more predisposed to believe that tenure and promotion committees would evaluate such publications favourably. Those LIS faculty respondents who report having experience with open-access publishing are also less likely than their colleagues who have not published in open-access journals to worry that such publications will adversely affect their career or research funding opportunities. However, here too LIS faculty exhibit uncertainty. Roughly 28% of both those who have and have not published open access remain agnostic about the career impact of open-access publishing. Thus, while in general it is clear that experience with open access reduces some of the concerns about the effects of this type of scholarly publishing on career opportunities, there remains a substantial amount of equivocity among LIS faculty about open access.

Such equivocity among LIS faculty is even more pronounced in respect of quality and purported citation advantages of open-access journals over subscription-based venues. Indeed, as mentioned above, an interesting finding across several of the analyses was the amount of uncertainty among LIS faculty in respect of their perceptions of open-access journals. Although analysis of the adjusted residuals revealed that these cells do not contribute significantly to almost all of the relationships found, the relatively large proportions of respondents who neither agreed nor disagreed with the perception or belief about open access being tested bear mention. For example, although there is an inverse relationship between knowledgeability of Green or Gold open access and concerns about low quality of open-access journals compared with traditional journals, over a third of both knowledgeable and non-knowledgeable respondents across both models of open access indicate that they are uncertain about whether there are quality differences between open-access and subscription-based journals. Similarly, although those more likely to publish in an open-access journal within a year are less likely to think there are quality differences between such venues and subscription-based journals, 42% of those unlikely to publish in an open-access journal neither agree nor disagree.

Although LIS faculty more knowledgeable about institutional repositories, disciplinary repositories and open-access journals are more likely than their less knowledgeable colleagues to agree to some extent that open-access journals are cited more heavily than subscription-based journals, sizable proportions of knowledgeable faculty members (49, 46 and 47%, respectively) and not very knowledgeable faculty (49, 53 and 54%, respectively) across all three types of open access neither agree nor disagree. Similarly, although those LIS faculty likely to publish open access within a year are more likely to agree about citation advantages for open-access journals, large proportions of both those likely (44%) and unlikely (50%) to publish in an open-access journal within a year remain uncertain.

Finally, the analysis also revealed some significant polarization between open-access authors and non-open-access authors with regard to likelihood of future engagement with open-access publishing. Almost 65% of those LIS faculty who have not published in an open-access journal claim to be unlikely to or will not do so within the 12 months following the survey, as compared with only 11% of those who have already published open access. Since likelihood of publishing in an open-access journal is strongly associated with previous experience with open access, then a critical question emerges about how to entice non-open-access authors into engaging with this model of academic publishing in order to ensure its sustainability.

External actors may be able to play a role in addressing this polarization. Funding agencies such as the National Science Foundation (NSF), the Institute of Museum and Library Services (IMLS) and the National Endowment for the Humanities (NEH) are in a position to influence and shape engagement with open access among funding recipients through the creation of open-access policy mandates. For example, in response to the February 2013 White House Office of Science and Technology Policy memorandum that directed all federal agencies that expend over US\$100 million annually for research and development to develop plans to support open access, the NSF instituted such a policy change in March 2015. For new awards resulting from proposals submitted on or after January 2016, researchers will be required to deposit in an online repository designated by NSF either the version of record or the final peer-reviewed manuscript. Such publications must be available for download, reading and analysis free of charge no later than 12 months after initial publication of the peer-reviewed journal article [23]. IMLS encourages rather than mandates funding recipients to deposit in a publicly accessible disciplinary or institutional repository the final peer-reviewed manuscripts resulting from research financed by an award [24]. NEH does not yet have a formal policy requiring open access archiving or publication (although it should be noted that this agency's R&D budget falls short of the White House Office of Science and Technology Policy US\$100M threshold). Canada's major federal funding agencies, the Natural Sciences and Engineering Research Council of Canada, the Social Sciences and Humanities Research Council of Canada and the Canadian Institutes of Health Research (CIHR), recently issued a harmonized policy on open access that will apply to all new grants from 1 May 2015. This unified approach, which is modelled on CIHR's 2007 Open Access Policy, stipulates that results arising from agency-supported research must be freely accessible online within 12 months of publication. The open-access requirement may be satisfied through deposit of the article in an electronic repository or publication in an open-access journal or a journal that offers open access on its website within 12 months [25]. Such funder-mandated policies requiring open access to results from federally funded research should provide important impetus for surmounting some of the current challenges to the broader uptake of open-access publishing among (LIS) faculty.

6. Conclusion

As the first systematic exploration of LIS faculty experience with and attitudes towards open-access publishing that advances beyond descriptive analysis, the results from this study fill a gap in our knowledge base about actual levels of support for and engagement with the foundational principle of access that informs both the discipline and the profession. Although the study is limited to North American LIS faculty and thus not necessarily generalizable to other regions or countries, the findings suggest some serious structural issues that may inhibit a broader uptake of open-access publishing as a response to the problems associated with the contemporary scholarly publishing system. Overall, these findings raise important questions for open access advocates about how to surmount the perceived structural constraints embodied in tenure and promotion processes around evaluation of scholarly output and how to attract those who have not previously published in open-access journals to this modality of scholarly publishing. Looking forward, it would be worthwhile to conduct this survey again longitudinally in order to track changes in perceptions of and engagement with open access among LIS faculty.

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Notes

1. Although this remains a fundamental mission of the Open Archives Initiative, this group has since broadened the scope of its work to include development of a technological framework and standards not restricted by type of content or economic mechanisms surrounding that content.
2. The primary distinction between Gold and Green open access is based on venue or delivery vehicle (i.e. journal or repository) rather than price or user rights, which delineates *Gratis* from *Libre*. Gold open access refers to peer-reviewed publication in an open-access journal, whereas Green open access involves deposit of the work in an institutional or subject repository. This distinction was employed in the relevant questions on the survey instrument (see Appendix 1) and is used for purposes of the analyses presented in Sections 4 and 5 of this paper.
3. Percentage totals outlined in this section may not sum exactly to 100 because of rounding.

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Appendix I

Survey instrument

About you and your engagement with scholarly publishing

Q1. Please indicate your faculty rank:

- Assistant Professor
- Associate Professor
- Professor
- Other – please specify

Q2. Please indicate your age group:

- 21–30
- 31–40
- 41 – 50
- 51–60
- 61 +

Q3. In which country is your institution located?

- Canada
- United States

Q4. Into which of the following areas does your research fall? Please select all that apply:

- Development/Principles/Policies of LIS
- LIS Education
- Organization of Information
- Information Systems and Retrieval
- Collection Development
- Services to User Populations
- Types of Libraries and Information Providers
- Management/Administration
- Informatics
- School Libraries
- Other (please specify):

Q5. Scholarly communication refers to the processes for disseminating research results and other scholarship. It includes traditional publishing as well as alternative dissemination vehicles, such as open access journals, institutional repositories, web sites and portals, and blogs, among others. How would you characterize the current scholarly communication system?

- No changes need to be made.
- Some minor changes need to be made.
- Substantial changes need to be made.
- No opinion.

Q6. What are your attitudes towards and assessment of scholarly communication? Please indicate your agreement or disagreement with each of the following statements:

- Strongly agree/Agree/Neither agree nor Disagree/Disagree/Strongly disagree*
- All scholarly articles should be free for everyone to access online.
- There should be no restrictions on non-commercial reuse of scholarly articles.
- Researchers already have access to most of the articles they need.
- Publication of research should not be limited by ability to pay.
- The dissemination of research is a common good and should not be monetized in any way.
- Publishers are an essential part of the scholarly communication process.

- Q7.** To what extent do you agree or disagree with the following statements?
Strongly agree/Agree/Neither agree nor Disagree/Disagree/Strongly disagree
 Scholarly societies generate more revenue from publishing than is required to cover their publishing costs.
 Commercial publishers control scholarly dissemination to the detriment of the scholarly dissemination system.
 Universities should do more to support publishing of scholarly books.
 The rise in journal prices increasingly is a burden to my institution.
 High journal prices have made it difficult for me to access the literature I need.
 High journal prices may make it difficult for others to access the literature I produce.
 As an author, I deliberately publish in journals that are affordable to readers.
- Q8.** When submitting your work for publication in any venue, how important to you are the following factors?
Very important/Important/Not very important/Not at all important
 Journal or book publisher's reputation.
 Journal's impact factor.
 Publication venue's weight in tenure and promotion considerations.
 My ability to retain copyright of my article.
 My ability to put the pre-publication version of my work on a web site.
 My ability to put the published version of my work on a web site.
 My ability to submit my manuscript online.
 Availability of my article in both print and electronic versions.
 Low or no subscription costs to readers.
 Speed of publication.
- Q9.** Over the past 12 months, in which of the following activities have you engaged to disseminate your work? Please select all that apply.
 Submitted a manuscript to, or had an article published in, a subscription-based journal.
 Submitted a manuscript to, or had an article published in, an open access journal.
 Published a monograph.
 Deposited an article in an electronic repository.
 Deposited other research outputs (e.g. working papers, technical reports) in an electronic repository.
 None of the above.
 Other (please specify):
- Q10.** In the next 12 months, how, if at all, do you expect your participation in these dissemination activities to change?
Increase/Decrease/Stay about the same
 Publishing articles in subscription-based journals.
 Publishing articles in open access journals.
 Publishing monographs.
 Depositing articles in an electronic repository.
 Depositing other research outputs (e.g. working papers, technical reports) in an electronic repository.
 Other (please specify):

Awareness of open access publishing

- Q11.** Traditionally, libraries and individuals pay for scholarly journals and books. Alternative ways to disseminate scholarship are emerging, several of which – in pursuit of open access – make the content available at no cost to the reader or library, with production costs covered elsewhere. What is your level of knowledge about the following alternative forms of scholarly dissemination?
Very Knowledgeable/Knowledgeable/Aware, but don't know much/Not aware
 Institutional repositories of open access content.
 Disciplinary repositories of open access content.
 Fully open access journals (all journal articles freely available without university or individual subscription).
 Blogs/wikis.
 Other (please specify):
- Q12.** For how many years have you been aware of the following forms of open access publishing?
Not aware/Less than One Year Between One and Two Years/More than Two but less than Three Years/Three Years or More
 Institutional repositories of open access content.

Disciplinary repositories of open access content.
 Fully open access journals (all journal articles freely available without university or individual subscription).
 Blogs/wikis.
 Other (please specify):

Q13. Are you aware of the differences between ‘Green’ and ‘Gold’ open access models?

Yes
 No
 Unsure

Q14. Are you aware of any initiatives in your country to promote open access publishing? [These may include, e.g., grant-awarding bodies, university/library consortia, national university bodies, and government-sponsored bodies.]

Yes
 No

[display if Q14 = yes]

Q15. Please elaborate on the initiatives in your country to promote open access publishing.

Q16. In the past year, has your own institution developed any open access publishing initiatives?

Yes
 No

[display if Q16 = yes]

Q17. Please elaborate on any open access publishing initiatives developed by your institution.

Attitudes towards and assessment of open access publishing

Q18. To what extent do you agree or disagree with the following statements?

Strongly agree/Agree/Neither agree nor Disagree/Disagree/Strongly disagree

There are too many open access journals in my field of research.

There are about the right number of open access journals in my field of research.

I would welcome more open access journals in my field of research.

Q19. Please indicate your agreement or disagreement with each of the following statements:

Strongly agree/Agree/Neither agree nor Disagree/Disagree/Strongly disagree

Open access offers wider circulation of research than publication in a subscription-based journal.

Open access journals have a larger readership by researchers than subscription-based journals.

Open access journals are cited more heavily than subscription-based journals.

Open access journals are of a lower quality than subscription-based journals.

Open access journals have lower production standards (e.g. copyediting, typesetting) than subscription-based journals.

Open access journals have faster publication timeframes than subscription-based journals.

There are no fundamental benefits to open access publication.

Q20. How would you evaluate a publication in an open access peer-reviewed journal compared with a traditional, subscription-based peer-reviewed journal?

Open access very unfavourable
 Open access of somewhat lesser quality
 Open access of comparable quality
 Open access of somewhat better quality
 Open access very favourable
 Unsure

Q21. How would a Promotion/Tenure Committee at your institution evaluate a publication in an open access peer-reviewed journal compared with a traditional, subscription-based peer-reviewed journal?

Open access very unfavourable
 Open access of somewhat lesser quality
 Open access of comparable quality
 Open access of somewhat better quality
 Open access very favourable
 Unsure

Q22. To what extent do you agree or disagree with the following statements?

Strongly agree/Agree/Neither agree nor Disagree/Disagree/Strongly disagree

The existing promotion and tenure processes at my institution ...

- ... force me to publish in print publications, rather than electronic-only forms of dissemination.
- ... cause me to forego using alternative forms of dissemination.
- ... encourage new forms of high-quality (peer-reviewed) scholarly communication.
- ... are keeping up with the evolution of scholarly communication.

Q23. Have you ever published your work in an open access journal?

Yes

No

[display if Q23 = no]

Q24. Please indicate to what extent you agree or disagree that the following factors were reasons why you have NOT published your work in open access (OA) journals.

Strongly agree/Agree/Neither agree nor Disagree/Disagree/Strongly disagree

I object in principle to paying a publication fee to publish in OA journals.

I always publish my work in the same journals and am satisfied with this way of working.

I could not identify any OA journals in which to publish.

I am not familiar enough with OA journals in my field to feel confident about submitting work.

I perceive the readership to be smaller than for a subscription-based journal.

I perceive the OA journals in my field to have low prestige.

I perceive the OA journals in my field to have low impact.

I perceive the OA journals in my field to have slower publication times than traditional journals.

I perceive the OA journals in my field to have poor peer-review procedures in place.

I think articles published in OA journals may be cited less frequently.

I am concerned about the archiving of work published in OA journals.

I cannot find funds to pay the publication fee for OA journals.

I was not attracted by the editor/editorial board.

My decision was influenced by my institution.

My decision was influenced by my grant awarding body.

My decision was influenced by my co-publishing colleagues.

If there are any other reasons for NOT publishing your work in OA journals, please elaborate them in the space provided.

[display if Q23 = no]

Q25. Would you publish your work in an open access journal if you could identify one that overcame the reasons you gave for not publishing in OA journals in the previous question?

Yes

No

Unsure

Q26. Some authors have concerns about publishing their work in open access (OA) journals, particularly in view of the fact that most OA journals are relatively new and have yet to develop a strong reputation or impact factor score. Please indicate the extent to which you agree or disagree with the following statements:

Strongly agree/Agree/Neither agree nor Disagree/Disagree/Strongly disagree

Publishing my work in OA journals may adversely affect my chances of appointment/promotion.

Publishing my work in OA journals may adversely affect my chances of winning research grants.

Publishing my work in OA journals may adversely affect my career.

Publishing work in OA journals may adversely affect the careers of my co-authors.

Publishing my work in OA journals may limit the potential impact of my published work.

Publishing my work in OA journals may adversely affect the viability of scholarly societies.

I am concerned about the capacity of OA journals to guarantee the permanence of my work.

If you wish to comment on these or any further concerns, please elaborate in the space provided.

Q27. What is the likelihood that you will publish at least one article in an open access journal in the next 12 months?

Very likely

Likely

Not very likely

I will not do so

Unsure

The economics of publishing in open access journals

Q28. To what extent do you agree or disagree with the contention that the open access publishing model will be more cost-effective to the academic research community in the long run than the current subscription-based model?

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Unsure
- Don't care

[display if Q28 = Strongly Agree or Agree]

Q29. Why do you think the open access publishing model will be more cost-effective?

- Publishing costs will decline
- Publishers' profits will decline
- Other (please specify):

Q30. To what extent are you concerned that a significant move to open access publishing may disrupt the established system of scholarly publishing?

- Very concerned
- Concerned
- Not very concerned
- Not at all concerned
- Unsure

Q31. Please tell us why you are or are not concerned that a significant move to open access publishing may disrupt the established system of scholarly publishing.

Q32. The 'Gold' open access publishing model often requires that authors or their institutions pay for scholarly works to be published. There is a significant range for article processing fees, which typically can run between US\$500 and 3000, although it has been estimated that the real costs of publication can be higher. How much do you think authors or their institutions should be prepared to pay to publish in a journal of their choice, assuming the work is accepted through the peer-review process?

- Nothing (please elaborate why nothing in the space provided)
- Up to US\$500
- US\$501–1000
- US\$1001–1500
- US\$1501–2000
- US\$2001–2500
- US\$2501–3000
- More than US\$3000
- Unsure

Q33. Where do you think the funds should come from in order to pay publication fees? Please select all that apply:

- Research grant
- Departmental funds
- Library/institutional funds
- Commercial sponsors
- Personal funds
- Other (please specify):

[display if Q23 = yes]

Q34. Have you paid article processing fees in the past to publish in an open access journal?

- Yes
- No

[display if Q34 = yes]

Q35. What funding sources did you draw on to cover article processing fees in the past? Please select all that apply:

- Research grant
- Departmental funds
- Library/institutional funds
- Commercial sponsors

Personal funds

Other (please specify):

Q36. If the terms and conditions of a research grant required you to publish the results of that research through open access ('gold' model), which of the following best describes your likely reaction?

I would willingly accept such terms.

I would accept such terms, but unwillingly.

I would not accept such terms and would look elsewhere for funding.

Unsure

Q37. In principle, would you pay a publisher of a journal sold according to the traditional subscription model an additional fee in order for your particular paper to be made open access (and therefore freely available to subscribers and non-subscribers)?

Yes, definitely

Yes, possibly

No, probably not (please elaborate your reason why not)

No, definitely not (please elaborate your reason why not)

Article repositories and archiving

Q38. Thinking about the last time you published an article, did your publishing agreement (whether a licence – where you retain copyright – or a transfer of copyright to the publisher) permit you to post your article online

Yes/No/Unsure

As a preprint?

In final, peer-reviewed and edited form?

As a PDF supplied by the publisher?

None of these

Unsure

Q39. Have you deposited research outputs to an electronic repository?

Yes

No

[display if Q39 = yes]

Q40. Thinking about your deposit of scholarly articles to an electronic repository, which of the following have you done in the past 12 months? Please select any that apply:

Preprint form/Final, peer-reviewed form

Posted an article on my personal web page

Posted an article on my department's web site

Deposited an article in an electronic institutional repository

Deposited an article in an electronic subject repository

Q41. In the next 12 months, how, if at all, do you expect your participation in the following dissemination activities to change?

Increase/Decrease/Stay about the same

Posting a pre-print on my personal web page

Posting a postprint on my personal web page

Posting a pre-print on my department's web site

Posting a postprint on my department's web site

Depositing a pre-print in an electronic institutional repository

Depositing a postprint in an electronic institutional repository

Depositing a pre-print in an electronic subject repository

Depositing a postprint in an electronic subject repository

[display if Q39 = yes]

Q42. Please indicate how important to you the following reasons were for contributing your scholarly output to electronic repositories:

Very important/Important/Not very important/Not at all important

Increases exposure of my previously-published work (e.g. postprints)

Provides exposure for work not previously published (e.g. seminar papers)

Broadens the dissemination of academic research generally

Mandated by my academic department
 Increases academic institutions' leverage with commercial publishers
 Increases my own commercial publishing opportunities
 Improves my tenure and/or promotion prospects
 Other (please specify):

[display if Q39 = no]

Q43. Thinking about what might motivate you to contribute your scholarly output to electronic repositories, please indicate the importance to you of the following reasons:

Very important/Important/Not very important/Not at all important
 Increases exposure of my previously-published work (e.g. postprints)
 Provides exposure for work not previously published (e.g. seminar papers)
 Broadens the dissemination of academic research generally
 Mandated by my academic department
 Increases academic institutions' leverage with commercial publishers
 Increases my own commercial publishing opportunities
 Improves my tenure and/or promotion prospects
 Other (please specify):

[display if Q39 = yes]

Q44. Thinking about your contribution of scholarly output to repositories, who actually posts your work to the repository? Please select all that apply:

I do it myself
 A departmental administrative assistant
 A graduate student/teaching assistant
 Someone from the library
 Someone else (please specify):

Q45. Who do you think should be responsible for archiving articles published in open access journals? Please select all that apply:

Publishers of open access journals
 Scholarly societies
 National governments
 National libraries
 Library consortia
 Scholarly institutions
 Authors themselves
 Other (please specify):

Q46. If required by your employer or funding body to deposit copies of articles you publish in one or more repositories – and assuming you, your employer or funder have the right to do so – which of the following best describes your likely reaction?

I would do so willingly
 I would do so, but unwillingly
 I would not be prepared to do so
 Unsure

Attitudes about publisher control of scholarly publishing

Q47. In an effort to challenge the high cost of journals charged by the major for-profit publishers such as Elsevier, Tim Gowers has publicly stated that he will no longer publish in, peer review for, or sit on editorial boards of journals owned by Elsevier. His action has attracted similar commitments to boycott Elsevier by over 13,000 other people. Is this an action that you would be willing to support as a means of addressing the serials pricing crisis in academia?

Yes
 No
 Unsure

Q48. There have been examples in the past of editorial boards resigning en masse from journals owned by for-profit publishers in order to subsequently set up new journals that have been offered for significantly lower prices. Is this a potentially viable strategy within LIS as part of a disciplinary response to the serials pricing crisis in academia?

Yes
No
Unsure

Q49. If you are a member of a journal's editorial board, would you be willing to engage in the action outlined in the previous question?

Not a member of an editorial board
Yes
No
Unsure

[display if Q49 = yes/no/unsure]

Q50. As a member of an editorial board, please provide an explanation for your response to the previous question.

Q51. Please indicate the degree to which you agree or disagree with the statement that L/IS scholars should be at the forefront of efforts to expand open access to scholarly research.

Strongly agree/Agree/Neither agree nor Disagree/Disagree/Strongly disagree

Appendix 2

Explanation of collapsed categories

Faculty rank collapsed into tenured/untentured:

Assistant Professor → 'Untenured'
Associate Professor → 'Tenured'
Professor → 'Tenured'

Other – please specify → Either 'Untenured' or 'Tenured' depending on the specifics of each case.

Original five categories measuring agreement collapsed into three categories:

Strongly Agree → 'Agree/strongly agree'
Agree → 'Agree/strongly agree'
Neither Agree nor Disagree → 'Neither Agree nor Disagree'
Disagree → 'Disagree/strongly disagree'
Strongly Disagree → 'Disagree/strongly disagree'

Original four categories measuring knowledgeableability collapsed into two categories:

Very knowledgeable → 'Very knowledgeable/knowledgeable'
Knowledgeable → 'Very knowledgeable/knowledgeable'
Aware, but don't know much → 'Not very knowledgeable/not at all'
Not at all knowledgeable → 'Not very knowledgeable/not at all'

Original four categories measuring importance collapsed into two categories:

'Very important' → 'Very important/important'
'Important' → 'Very important/important'
'Not very important' → 'Not very important/not at all important'
'Not at all important' → 'Not very important/not at all important'

Likelihood of publishing an article in an open-access journal within the next 12 months collapsed from five to three categories:

Very likely → 'Very likely/likely'
Likely → 'Very likely/likely'
Not very likely → 'Unlikely/will not'
I will not do so → 'Unlikely/will not'
Unsure → 'Unsure'

Evaluation of publications in an open-access journal compared with a traditional journal collapsed from six into four categories:

Open Access very unfavourable → 'OA unfavourable/less favourable'
Open Access somewhat lesser quality → 'OA unfavourable/less favourable'
Open Access comparable quality → 'OA comparable'
Open Access somewhat better quality → 'OA somewhat/more favourable'
Open Access very favourable → 'OA somewhat/more favourable'

Unsure → 'Unsure'

Beliefs about how tenure and promotion committees would evaluate publications in an open-access journal compared with a traditional journal collapsed from six into three categories:

Open Access very unfavourable → 'OA unfavourable/less favourable'

Open Access somewhat lesser quality → 'OA unfavourable/less favourable'

Open Access comparable quality → 'OA comparable'

Open Access somewhat better quality → no responses on this category

Open Access very favourable → 4 responses on this category – category removed

Unsure → 'Unsure'