

A dissemination divide? The factors that influence the journal selection decision of Library and Information Studies (LIS) researchers and practitioners

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Abstract

With increasing volumes of research output and the continued emergence of new publishing venues, scholarly publishing has become a crowded landscape. This study analyses the factors that influence LIS authors when selecting a journal for submission, and in particular the significance of open access (OA) options and bibliometric indicators in this decision-making process. An online questionnaire with Likert scales was used to collect and rank the preferences and attitudes of LIS professionals. As part of the analysis, two separate sub-groups were examined using inferential statistical tests to explore if the research-practice divide so often cited in the LIS literature is also replicated in journal selection. It is concluded that choosing a journal for LIS research is a complex decision for both faculty members and librarians. Whilst some commonality exists between both groups, many variables show evidence of a divide in practices and preferences in consonance with the existing research.

1 Introduction

The need for effective dissemination has become a key landmark in the scholarly publishing vista, with the volume of research output (taken in this paper to include practice-based studies) continuing to grow. However, effective dissemination is an aspect that can vary greatly between publications depending on their perceived reputation, readership, level of accessibility and the technical infrastructure they provide to both authors and readers. In this context, the decision where to publish has perhaps become more important than ever; the publications that your work is featured in may ultimately shape your future career path and prospects, as well as determining the visibility and impact of your research. But what are the factors that typically influence this decision in the case of LIS articles?

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Automated tools such as JANE and PubReMiner can assist with the journal selection process by using frequency analysis to identify publications based on the subject and content of your research. However, such applications only consider a narrow spectrum of the disparate factors in what is a complex decision. Is the prestige of traditional publications still significant, or is topical fit the over-riding criterion? Are performance issues such as the speed and quality of the review process perceived as being of greater importance than the probability of acceptance? With the pervasiveness of Google Scholar as a cross-discipline discovery tool, is indexing in subject-specific databases still a relevant concern for authors?

Library and information professionals have been some of the most vocal advocates for open access publishing in recent times, advising researchers that providing free access to their work can maximise visibility and impact. But is this a case of do as I say, not as I do? Do librarians and information practitioners (from now on simply 'librarians') and LIS academics also view open access publishing as an essential criterion when selecting a journal for their own research?

Librarians have utilised journal impact factors for many years in collection development decisions (Wagner, 2009; Nisonger, 2004) and in providing support and analysis to faculty members regarding where and how they should publish. However, when deciding where to submit their own manuscripts, are these bibliometric measures as influential as they often advise others, particularly given that coverage of LIS publications in the ISI Journal Citation Reports index is limited?

Previous studies have also found evidence of a divide in how LIS faculty members and librarians behave as both authors and readers (Xia *et al.*, 2011; Kim, 1991). Much of the existing research in this area compares observed behaviour and actual outcomes in terms of publishing patterns, rather than the attitudes or affective perceptions of authors. As well as exploring the key factors that influence the decision where to publish within the field of LIS as a whole, this study aims to explore if any divergent patterns are evident between researchers and practitioners in the journal selection decision process.

2 Literature Review

2.1 Journal selection criteria

The factors influencing the publication preferences of authors are many, and are typically influenced by internal factors as well as the broader external context (Sandelands, 1996; Gibler and Ziobrowski, 2002; Bröchner and Björk, 2008). Emerging developments such as the open access movement and the increased focus on quantitative indicators of journal impact have penetrated more traditional and discipline-specific concerns, such as editorial personnel, the quality of the review process, perceived reputation and topical fit (Gibler and Ziobrowski, 2002).

Whilst there is much commonality identified in the literature regarding the factors which influence the decision where to publish, significant variation exists between

studies as to which factors are most influential. Rowlands and Nicholas (2005, 483) present the findings of a CIBER survey of authors' behaviour and attitudes to digital scholarly communication across a variety of subject areas. Respondents identified the reputation of the journal, readership, and impact factor as the three most important factors when selecting a publication for their most recent article. The least influential considerations concerned copyright and self-archiving permissions.

Knight and Steinbach (2008) developed a detailed cross-discipline model based on thirty-nine different factors grouped into three broad categories: likelihood of timely acceptance; potential impact; and philosophical and ethical issues, with further facets then developed within these. The likelihood of acceptance and impact-related aspects are used to position a given journal within a decision-making quadrant, whilst ethical and philosophical considerations essentially "form an umbrella over the entire decision process" (Knight and Steinbach, 2008, 73). Many of the factors identified echo those in previous studies (Rowlands and Nicholas, 2005; Björk and Holmström, 2006).

As well as broader cross-discipline analyses, several studies have examined publishing behaviours and practices within a specific sector. Although some variation might be expected between diverse disciplines such as Science and the Arts, it is notable that most if not all factors recur. For instance, Thompson's (2007, 1075) checklist of the key criteria for authors engaged in medical research – i.e. 'fit' with the author's aspirations; the impact and prestige of the journal; topical focus; the speed and value offered by the review process; and the cost of publication – is largely mirrored by Gibler and Ziobrowski's (2002) analysis of the Real Estate industry. However, in addition the latter also finds evidence of a strong positive relationship between previous acceptance and an author's preference for that journal (Gibler and Ziobrowski, 2002, 155).

There has been little recent analysis concerning the most influential journal selection criteria specifically within the discipline of LIS. McNicol's (2002) study of the research culture in LIS is notable and highlights the need to disseminate research beyond the LIS domain "as many findings would be of interest to other professions and disciplines" (McNicol, 2002, 13). In this context, researchers should work with their target audience to ensure that their research reaches them by the most appropriate channel. Searing's study (2006) suggests that LIS authors may start by exploring the publications cited in the reference list of their own article. In this way, the literature review process can also serve as a valuable tool in identifying publication venues. Kennan and Olsson (2011) also refer briefly to the potential factors to consider when publishing LIS research, including the need to clarify who the intended audience is and how they might ultimately use your research.

How these factors are combined in the decision-making process, and which factors dominate, can vary depending on individual preferences and attitudes. Bröchner and Björk apply the economic 'theory of choice' to scholarly publishing behaviour:

If authors are assumed to act rationally in the usual economic sense, they should choose a journal for publication of their findings according to where they can expect the highest average value, adjusted for risks and costs.

(Bröchner and Björk, 2008, p. 1).

Value, risks and costs are concepts which can be both subjective and objective, and contingent on the individual, the discipline and the broader research environment, and combining these factors is a complex task.

Björk and Holmström's (2006) net value of submission model (see Figure 1) is a possible framework. The model categorises the factors affecting journal choice into four broad streams: infrastructure; readership; prestige; and performance. These themes incorporate specific factors, which can be used to calculate a composite, quantitative measure of the net value, that is, the risk- and cost-adjusted expected value of submitting a paper to a given journal. Authors can then use this measure to benchmark journals against each other. Although specifically pilot-tested within the construction IT sector, the authors see value in applying the model to other scientific disciplines, which would also facilitate much-needed cross-discipline comparisons.

The present study examines author preferences and perceptions regarding journals more generally, rather than attempting to provide a model for benchmarking or ranking specific journal titles based on their individual risk and value. However, the four overarching themes identified by Björk and Holmström (2006) were also used as the framework for this study, alongside many of the specific factors included in the model, however the net-submission weighting scale was not used (see Table 1). A number of the factors used by Björk and Holmström refer to quantitative measures relating to specific individual journals that are not typically made available to prospective authors for all journals generally, such as the number of web downloads, subscribers and paper circulation statistics. Consequently the list of factors was streamlined to reflect the different context of this study. Broadly similar factors were also grouped together for the purposes of simplifying the survey for respondents. To take account of the aforementioned omission of download and subscriber statistics, a more general variable of level of readership was incorporated, whilst regional and topical fit of readership, and nature of readership (practitioner versus scientist), were repackaged as a target readership factor, or who reads the journal rather than how many. Publisher prestige and journal prestige were grouped under 'perceived reputation'; journal rejection rate and submission rejection risk were combined as 'probability of publication'; institutional reward schemes was subsumed under 'CV value'; and a number of the infrastructure factors were bracketed under 'technical features' generally. Some factors were also rephrased to ensure greater clarity for participants, for instance publication delay was reworded as 'speed of publication', though the essential meaning remained the same.

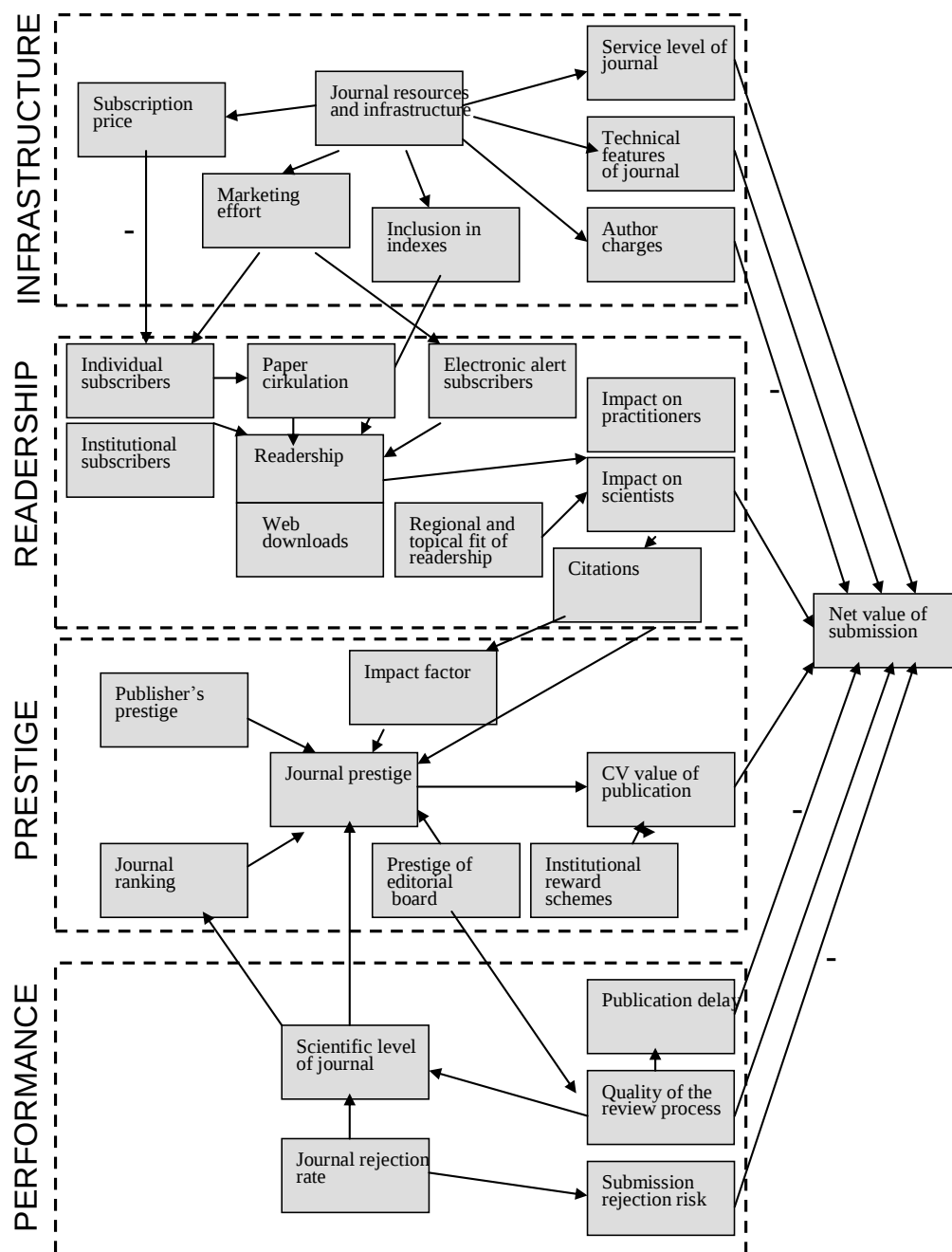


Figure 1: Net Value of Submission Model, Björk and Holmström (2006, 149).

Colleague recommendation was included to take account of instances where papers may be jointly submitted, whilst retention of copyright (Rowlands and Nicholas, 2005), peer-review (Smith and Middleton, 2009) and previous acceptance of an article (Gibler and Ziobrowski, 2002) were incorporated as these are referred to in several other studies, although omitted by Björk and Holmström. In addition, some factors (subscription price, impact factor and citations) were broken down in greater detail to address the primary research questions of the study (see Introduction).

Theme	Journal selection criterion investigated	
	in the present study	Björk and Holmström, 2006
<i>Prestige</i>	Journal Impact factor, Other impact metrics	Impact Factor, Journal ranking
	Perceived reputation	Publisher prestige, Journal prestige
	CV value	CV value, Institutional reward Schemes
	Editorial board personnel	Prestige of editorial board
	Peer-reviewed	n/a
	Colleague Recommendation	n/a
<i>Readership</i>	Open Access (Green/Gold)*	Subscription price
	Level of readership	Readership, Institutional subscribers, Individual subscribers, Web downloads, Paper circulation, Electronic alert subscribers, Citations
	Target readership	Regional and topical fit of readership, Impact on practitioners, Impact on scientists
	Topical fit	Regional and topical fit of readership
	Retention of copyright	n/a
<i>Performance</i>	Probability of publication	Submission rejection risk, Journal rejection rate
	n/a	Scientific level of journal
	Speed of publication	Publication delay
	Quality of review process	Quality of the review process
	Post-publication review	n/a
<i>Infrastructure</i>	Indexed in major database	Inclusion in indexes
	Article Processing Charges	Author charges
	Technical features	Technical features, Service level of journal, Journal resources and infrastructure, Marketing effort,
	Previously accepted	n/a

* In this study, 'Green OA' means permission to self-archive a manuscript without any embargo, and 'Gold OA' means publishing either in a fully OA or hybrid OA journal.

Table 1: Selection criteria investigated in the present study compared to those of Björk and Holmström (2006).

2.2 Open Access practices

Assessing attitudes towards open access publishing in academic research is a common theme in the aforementioned studies. However, the literature suggests that it is not a simple decision taken in isolation. Park and Qin (2007) find that scholars' willingness to both publish in and use OA journals is a complex issue that depends on up to seven factors namely: perceived career benefit; cost; journal reputation; content quality; ease of use; availability; and topical relevance. Moreover, from interviews with biomedical faculty members, Warlick and Vaughan (2007) find evidence that whilst open access and visibility are seen as incentives when selecting a journal, publication quality is of uppermost importance; when presented with two options of a non-open access respected title and an open access title perceived as less established or of lower-quality, *ceteris paribus* faculty members will typically choose the former. Rowlands and Nicholas (2005) compare the experience and attitudes of authors to open access journals using survey results from January 2004 and July 2005. Whilst results show that the proportion of authors who had previously published in an open access journal had increased from 11% to 29%, fewer than 10% of respondents stated that they try to publish OA whenever possible. However if this incipient upward trend has indeed continued, one would expect the proportion to be significantly higher today.

2.3 Bibliometrics

Another prevalent theme identified in the literature is the use of journal impact factors and citation counts to guide the decision where to publish. There are a growing number of variant measures based on citation data that can be used to evaluate journal impact, yet the ISI Web of Science Journal Impact Factor (JIF) remains the most routinely used by promotion committees at universities (Bar-Ilan, 2008). However, the value of journal impact factors as a proxy for journal quality or significance has been debated for many years (Bordens *et al.*, 2002; Saha *et al.*, 2003; Garfield, 2006). Furthermore, a recent analysis by Lozano *et al.* suggests that the importance of high-impact journals is declining:

Throughout most of the 20th century the link between the IF and papers' citations was growing stronger, but, as predicted, this link has been weakening steadily since the beginning of the digital age.

(Lozano *et al.*, 2012, p. 2144).

The authors estimate that in 1990 45% of the top 5% most cited articles were published in the top 5% of journals as ranked by JIF, but by 2009 the proportion had fallen to 36%.

The breadth and depth of coverage of some disciplines – including LIS – in the JIF index is also questioned by many (López-Illescas *et al.*, 2008; Meho and Yank, 2007; Fingerman, 2006). Indeed the computed *h*-index of a researcher can vary significantly depending on the citation tool used and the discipline in question (Bar-Ilan, 2008). Smith and Middleton describe the process of compiling a four-tiered LIS journal ranking system as part of the Excellence in Research for Australia (ERA) initiative – a framework for assessing research quality within

Australia's higher education institutions. The tool was specifically designed to provide an alternative framework to the default JIF, as it was recognised that:

Although LIS and discipline-related journals were increasingly appearing in the Web of Science listed rankings, representation remained small, and it was therefore decided that the Australian LIS community attempt to rank journals' importance to its publishing output.

(Smith and Middleton, 2009, p. 3).

Like Bar-Ilan's (2008) study, a comparison of the *h*-indices of LIS and information retrieval researchers in the UK (Sanderson, 2008) found higher values in some contexts when using Google Scholar compared to ISI Web of Science and Scopus. However, overall "no single citation database was ideal" (p. 13) due to the gaps in coverage and varying focuses of each. Whilst the *h*-indices relate to individual researchers, rather than journals, the study serves to highlight the limitations of relying on any single bibliometric tool within LIS. If such measures appear to be of limited value in analysing impact within the discipline, is this also borne out in the attitudes of LIS professionals when selecting a journal?

2.4 Researcher-practitioner divide in LIS publishing

Unlike LIS researchers and faculty members, it is thought that "librarians generally do not publish their research" (Crumley and Koufogiannakis, 2002, 69). The difficulties of conducting and publishing research include lack of time; a perceived lack of skills and confidence in research methods and the research process generally; the absence of financial and emotional support; difficulties in accessing research; and a lack of motivation (Kennedy and Brancolini, 2012).

In the case of those practitioners who do publish, several studies have uncovered differences in publishing patterns between faculty members and librarians. Booth's (2001) seminal work highlights the gap between research and practice in LIS: librarians fail to implement research findings in practice, and researchers fail to ask questions of any practical relevance to librarians. The latter is related to other problems like "publishing in the wrong journals", i.e. those not read by librarians (Booth, 2001, 130). Crowley (2005) also provides evidence of a theory-practice divide, with research academics typically focussing on theoretical topics and librarians tending to discuss more practical issues. This divide also manifests itself in the specific publications both groups typically publish in (Schlögl and Stock, 2008). Librarians typically include fewer references in their research papers than academics, which can indicate a lower level of scholarliness (Kim, 1991); "faculty authors publish longer articles, have more references, and collaborate more often than librarians" (Xia *et al.*, 2011, 800).

McNicol (2002, p. 13) discusses the culture of research in LIS from the perspective of both practitioners and researchers, and finds that many academic researchers "perhaps do not consider the needs of the practitioner as much as they should", and therefore may not disseminate their research through channels aimed at this audience. Indeed counsel offered to practising librarians suggests there may be different categories or levels of journals within LIS – those primarily aimed at librarians and practitioners and those that are directed more towards the research community:

While the polarisation of journals and article types into ‘academic’ and ‘practitioner’ is not always helpful, it is important to have an audience in mind. Some journals have a deeply scholarly approach and require rigorous research methods, with deep descriptions and often challenging applications of theory. These journals are generally best avoided by the novice researcher and much practice-based research.

(Kennan and Olsson, 2011, 23)

In short, this difference in target audience is a primary factor which creates and perpetuates this divide:

Practitioners (as authors) write primarily for practitioners, academics (as authors) write mainly for academics. As a consequence, there is a gap between the communities of LIS academics and LIS practitioners.

(Schlögl and Stock, 2008, 661)

Haddow and Klobas (2004) analyse the division between the two kinds of research into eleven distinct gaps: a knowledge gap, a cultural gap, a motivation gap, a relevance gap, an immediacy gap, a publication gap, a reading gap, a terminology gap, an activity gap, an education gap, and a temporal gap. These factors may also affect where researchers and practitioners choose to publish their respective work. Informed by this evidence pointing to a research-practitioner divide, the present study examines the journal selection decision of both groups to explore the respective factors involved.

Xia *et al.* (2011) examine if this gap also affects open access publishing practices in LIS. However, the authors find no evidence to support the argument that there is any correlation between the open access status of articles and the professional status of the author (i.e. researcher or practitioner). Moreover “librarians are not more likely to self-archive than LIS faculty” (Xia *et al.*, 2011, 800). However, the study indicates that there may be a difference in the use of open access papers. Using citation analysis, the authors observe a higher proportion of OA articles are cited by academics compared to librarians (Xia *et al.*, 2011, 801). The present study aims to investigate if there are differences in *preferences* between both groups, rather than actual observed behaviours, regarding open access publishing.

3 Method

The study was primarily quantitative, employing descriptive and inferential statistical methods to investigate:

1. the relative importance of certain factors in the journal selection decision process, and
2. whether there is a statistically significant difference between the importance of these factors to LIS researchers and their importance to librarians.

The research question also aimed to estimate if preferences and factors differ between active respondents (i.e. those pursuing publication) and inactive respondents (i.e. those who have not previously submitted a manuscript or do not intend to do so in the near future).

A survey instrument was used that involved an online questionnaire with Likert scales to generate ordinal responses. Participants were asked to rank the importance of 21 separate factors in their journal selection decision on a scale from 1 to 5, 5 being the most important. A free-text response field was also included at the end of the survey to provide the opportunity for limited qualitative feedback regarding how individuals identify or select journals. It is important to note that many of the factors referred to above are in fact interrelated, e.g. impact factors and perceived prestige. Given the scope of this study, each is analysed as a single, independent variable, however a more sophisticated multiple regression analysis could yield further insight as to how each of the factors interact with each other.

3.1 Data collection and analysis

The survey was pilot-tested by both LIS practitioners and researchers to ensure clarity of expression and understanding. A link to the final survey was posted on approximately a dozen LIS list-serv email lists, and distributed via blogs, Twitter and LinkedIn, including via key professional associations (such as the LAI and CILIP) and several LIS schools. The survey was open to all individuals and participants selected themselves: this may have biased the sample. Whilst the total sample size is reasonably large at 326 participants, it is important to note that not all respondents marked every Likert scale. Participants were also asked to specify whether they had previously submitted a manuscript for publication or not, in order to ascertain the split between active and inactive publishers. The term 'research' was used in the broad sense of scholarly publishing generally. This was also clarified for participants in the text of the questionnaire by reference to illustrative examples including "case studies, reviews, commentaries etc. as well as original research articles" (the full text of the questionnaire is appended as a Supplementary File).

Descriptive statistics were used to generate the frequency distribution of factors for the total sample, and the median, mean and standard deviation for each. The same analysis was also performed for the sub-sample of active respondents. However, due to the low number of inactive respondents, it was not feasible to estimate whether the factors affecting the choice of journal differ between inactive and active sub-groups, or in a sense whether there is a difference between factors in a notional and effective context.

Inferential statistical tests were then undertaken to explore the relative importance of each of the factors between LIS researchers and practitioners. The Mann-Whitney *U*-test (a special case of the non-parametric Kruskal-Wallis test for two groups) was used to test for association between both of the sub-groups in the study: academics and librarians. The sum of the ranks was calculated for each group and the test statistic was then computed. If sample sizes are sufficient, the Mann-Whitney *U*-test approximately follows a χ^2 distribution. Under the null hypothesis the distributions of both groups are equal.

3.2 Qualitative analysis of free-text responses

Basic textual analysis techniques were used to analyse the free-text responses of survey participants by coding to identify common themes and/or differences

between both sub-populations. Whilst the primary focus of the study was on the quantitative responses (and the survey was constructed to reflect this), the qualitative data was used as a means of potentially enriching the analysis, particularly in terms of why individuals identified specific factors of being of greater or lesser importance, or in capturing any additional factors that were not included in the survey.

4 Results

4.1 Descriptive Statistics

The sample included respondents from several countries, reflecting the various online channels used in promoting the survey. 'Rest of World' countries with multiple respondents included Australia, New Zealand, South Africa, Iran and Thailand. North Americans comprised almost half of the total sample, but this is not surprising given the large number of people (in both absolute and relative terms) working in the sector in the United States and Canada.

Primary location	<i>n</i>	%
Republic of Ireland	53	16.21
Northern Ireland	2	0.61
Great Britain	76	23.24
Rest of Europe	7	2.14
North America	158	48.62
Rest of World	30	9.17
Total	326	100

Table 2: Location of respondents.

Researchers accounted for 37% of the sample; librarians made up the rest. The latter worked in many sectors, but academic librarians comprised around half of this sub-sample. Both samples were thought to be sufficiently large to reduce the estimation error in inferential testing.

Primary role/sector	<i>n</i>	%		<i>n</i>	%
Researcher (academic staff)	104	31.80	Researcher	121	37
Researcher (other)	17	5.20			
Academic library	108	33.33	Librarian	205	63
Public library	4	1.22			
School library	6	1.83			
Corporate/law library	9	2.75			
Special library	14	4.28			
Medical/health library	32	9.79			
Information centre	5	1.53			
Other	27	8.26			
Total	326	100		326	100

Table 3: Sector of respondents.

The overwhelming majority of respondents (77%) had previously submitted manuscripts for publication; a further 13% intended to do so within the next year.

Previous publishing experience	n	%
Yes, I have had at least one manuscript accepted	237	72.78
Yes, but I have not had a manuscript accepted yet	14	4.28
No	44	13.46
No, but plan to submit research within the next 12 months	31	9.48
Total	326	100

Table 4: Publishing experience of respondents.

The relatively small proportion of inactive publishing participants (less than 40 for many of the factors), made it impossible to estimate the differences, if any, between active and inactive sub-groups with any degree of reliability.

4.2 Relative importance of journal selection criteria

Table 5 gives the number of respondents who regarded each criterion as being of some degree of importance in deciding where to publish their work, and then gives the median, the mean and the standard deviation of their ratings. The median is used as a measure of central tendency as being more appropriate to the non-continuous ordinal data generated by the Likert scales in the questionnaire. These scales allowed respondents to rate the importance of each selection criterion as follows:

- 1 = Not at all important;
- 2 = Unimportant;
- 3 = Neither important nor unimportant;
- 4 = Important;
- 5 = Very important.

Topical fit and peer-review are the only two factors with a median value of five, indicating that both are seen as primary factors in the submission decision. A number of other factors across each of the four themes also score highly with median values of four.

Theme	Criterion	n	Median*	Mean*	St. dev.
<i>Prestige</i>	Journal Impact Factor	316	4	3.64	0.94
	Other impact metrics	304	3	3.00	0.98
	Perceived reputation	319	4	4.22	0.72
	Peer-reviewed	321	5	4.55	0.74
	CV value	317	3	3.47	1.15
	Editorial board personnel	320	3	3.21	0.95
	Colleague Recommendation	316	4	3.74	0.81
<i>Readership</i>	Gold OA	313	3	3.15	1.04
	Green OA (no embargo)	308	3	3.33	1.09

	Retention of copyright	314	4	3.54	1.05
	Level of readership	311	4	3.96	0.90
	Target readership	318	4	4.25	0.85
	Topical fit	318	5	4.50	0.75
<i>Performance</i>	Previously accepted	314	3	3.11	0.93
	Probability of publication	315	3	3.34	0.94
	Speed of publication	318	4	3.48	0.95
	Quality of review process	319	4	3.87	0.85
	Post-publication review	318	3	2.94	1.00
<i>Infrastructure</i>	Indexed in major database	314	4	3.96	0.95
	Article Processing Charges	315	4	3.50	1.10
	Technical features	312	3	2.77	1.01

Table 5: Median, mean and standard deviation of importance of selection criteria.

4.3 Relative frequency distribution of ratings of journal selection criteria

Figure 2 ranks the selection criteria in order of importance, and also shows in what proportions respondents rated them as more or less important.

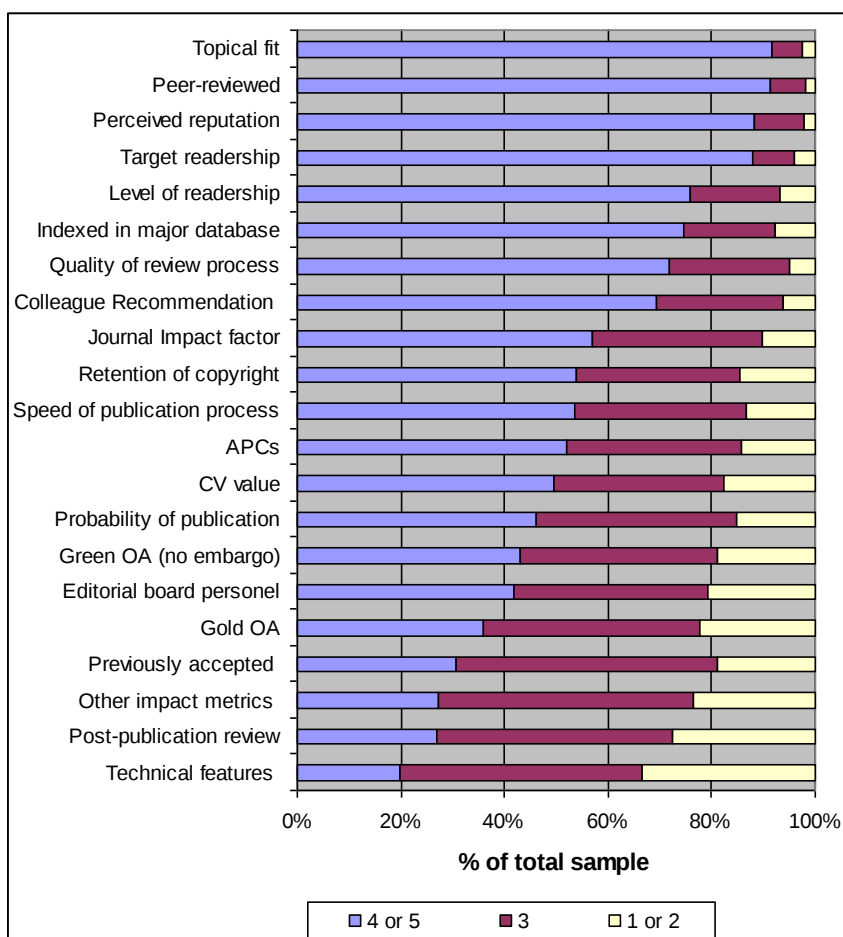


Figure 2: Selection criteria ranked in descending order of importance.

Prestige and readership factors predominate. The target readership (who the potential audience is) is perceived as more important than the overall level of readership. Journal impact factors are regarded as substantially more important than other impact metrics. Both open access options rank relatively low in the overall distribution.

4.4 Inferential statistical results

Prior research indicated differences between researchers and librarians in how they selected journals in which to publish their work (see section 2.4 above). The present study has aimed to determine whether this difference exists, and how great it is, using the Mann-Whitney *U*-test.

At the 1% significance level, the null hypothesis – that there was no difference – was rejected for ten of the factors (at the 5% level, thirteen are rejected), suggesting that there is some difference between the distributions of both populations (Table 6). These factors mainly include prestige factors, such as journal impact factors, reputation and promotional considerations, as well as several performance factors. Conversely, for a number of criteria – including open access criteria – the null hypothesis was not rejected, suggesting that the distributions of both populations are broadly similar in these respects.

Criterion	<i>n</i>	<i>n</i> (R)	<i>n</i> (L)	M-W <i>U</i>	<i>P</i> -value
Journal Impact factor	316	117	199	35.60763	0.000000
Other impact metrics	304	110	194	4.77890	0.028811
Perceived reputation	319	118	201	32.22967	0.000000
Peer-reviewed	321	121	200	28.7991	0.000000
CV value	317	118	199	14.2114	0.000163
Editorial board personnel	320	119	201	7.32424	0.006803
Colleague Recommendation	316	117	199	0.01218	0.912116
Gold Open Access	313	116	197	3.42535	0.064203
Green OA (no embargo)	308	115	193	2.58815	0.107666
Retention of copyright	314	119	195	4.43496	0.035210
Level of readership	311	117	194	0.0972	0.755217
Target readership	318	119	199	0.24576	0.620080
Topical fit	318	119	199	16.0222	0.000063
Previously accepted	314	117	197	9.56596	0.001982
Probability of publication	315	119	196	0.01474	0.903372
Speed of publication	318	119	199	10.0511	0.001523
Quality of review process	319	118	201	6.54704	0.010506
Post-publication review	318	118	200	15.7895	0.000071
Indexed in major database	314	117	197	6.83224	0.008953
Article Processing Charges	315	117	198	0.40672	0.523638
Technical features	312	115	197	4.60387	0.031900

Note: shading indicates criteria for which a difference was identified between researchers (R) and librarians (L) at a 1% level of significance.

Table 6: Mann-Whitney *U*-Test results.

The charts in Figure 3 compare each of the ten factors for both sub-groups where a statistically significant difference was found. In many instances there are clear visual differences also, such as for journal impact factors, speed of publication and CV/promotional value.

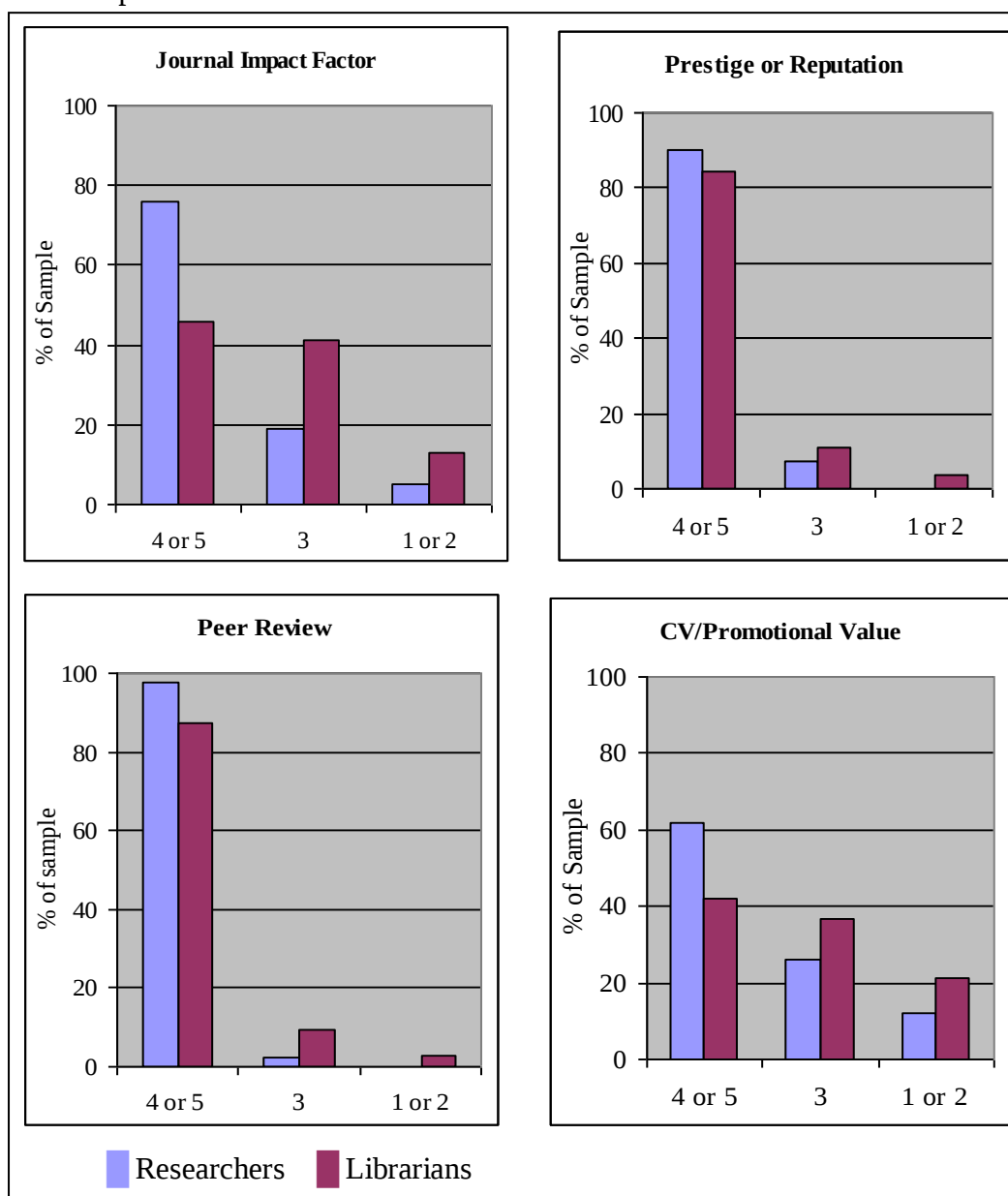


Figure 3: Breakdowns of criteria with significant preference-differences between researchers and librarians.

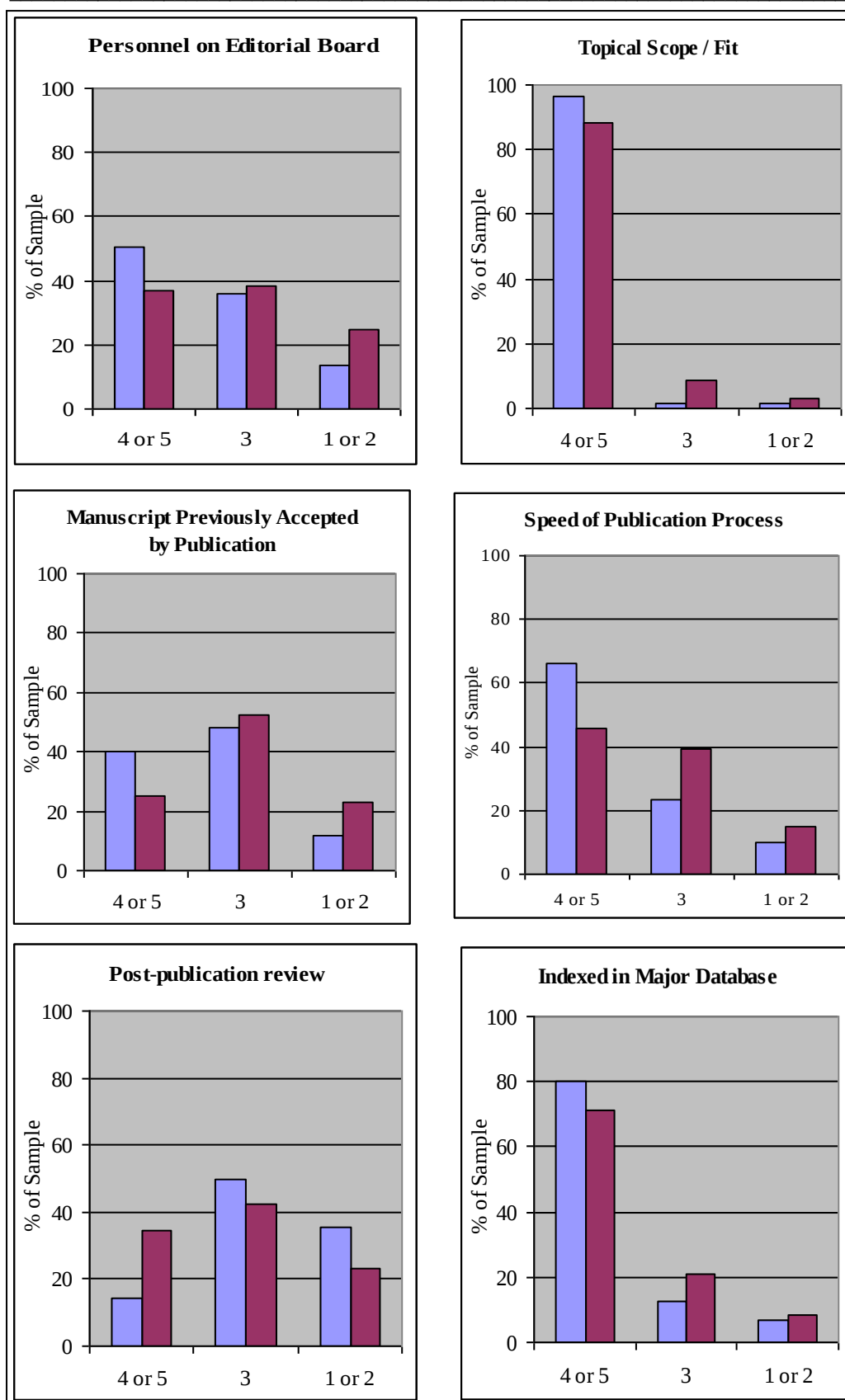


Figure 3 (cont.): Breakdowns of criteria with significant preference-differences between researchers and librarians.

4.5 Qualitative data from free-text responses

52 respondents (27 researchers and 25 librarians) submitted additional information through the free-text comment box included at the end of the questionnaire. In many instances, respondents used this opportunity to identify and highlight the primary factor in their typical selection decision. Five researchers specifically referred to 'Web of Science' as being of importance, whereas only one librarian mentioned this. Researchers generally referred to more strategic factors related to career advancement and prestige, whilst librarians more often emphasised that they were specifically interested in reaching a particular audience (e.g. geographic or sectoral).

Comments from researchers:

- *For any faculty member peer reviewed is almost the single most important factor.*
- *It's all about quality.*
- *I won't publish in a journal that isn't indexed in World [sic] of Science.*
- *Speed of review is very important.*

Comments from librarians:

- *I am a library practitioner (who writes practice-based articles) so impact is less important to me than getting the information into the right hands.*
- *I would now be more likely to blog the article so that there are [sic] no paywall for readers to overcome. The over-riding criterion is whether the publication will convey the message to the target audience.*
- *I am a science librarian and my publications are for other science librarians. This limits my choice of journals to submit articles to.*
- *[I] still do not trust most OA journals yet.*

In addition, several other factors were suggested by respondents which had not been explicitly included in the questionnaire, but which had some connection with specified criteria (e.g. identifying a specific country of publication is closely related to target readership).

Comments from researchers:

- *Look and feel, profile, branding (Technical factors).*
- *Publisher promotion and support (Technical factors).*
- *One of my mentors (not LIS) was concerned never to publish in the same journal twice (Recommendation from a colleague).*

Comments from librarians:

- *Irish publication and audience (Target readership).*
- *National interest – for a Canadian topic, I would probably choose a Canadian journal, even if it had a lower impact factor (Target readership).*
- *International readership and scope are very important (Target readership and Topical fit).*
- *Template + support from editorial team (Technical factors).*
- *Collaborating with a more senior colleague is really important particularly when you are first starting (Recommendation from a colleague).*

5 Discussion

5.1 Limitations of the study

As already identified, the small sample size precluded meaningful analysis of one of the facets of the primary research question – active versus inactive researchers. This is likely due to self-selection bias from the sampling method used for the online survey. Alternative sampling and/or recruitment strategies could be employed to obtain responses from inactive researchers. This would allow for further comparison with the primarily active cohort in this study, to test if notional factors differ from effective factors. Whilst these inactive researchers are not submitting work themselves, they may still be acting in an advisory capacity for their users in this regard and so their notional attitudes may still offer valuable insight, even if they are not effective as such. However, when comparing the inactive and active sub-groups at a superficial, descriptive level, the only factor that was flagged as potentially different was the levying of article processing charges, which those actively engaged in publishing rate as being of less importance (a median value of 3 compared to 4 for the inactive sample). This may be because those outside the research environment are unaware of funding / grant or other sources which may support researchers in paying such fees.

Furthermore, the rankings for some criteria may overstate their importance. None of the 21 factors were ranked by all 326 participants (see Table 5). It is likely that some respondents did not rank a factor at all because they were either unsure, or viewed it as irrelevant or of no consequence in their decision. In the case of the latter, the true frequency of lower ratings may be understated by the results, generating median values that are too high.

The inferential statistical tests showed differences in attitude between researchers and librarians toward several criteria. However these inferences must be interpreted with caution. Sohn (1998) observes that research prediction is based on theory and a statistically significant result does not indicate the truth of the hypothesis or the replicability of the results, rather it indicates the *validity* of the attempt to substantiate the hypothesis empirically. In this context, null hypothesis significance-testing does not serve to eliminate or disprove alternative explanations or theories, only whether chance can be excluded as an explanation. Thus the results should not be interpreted as providing, any basis or rationale for the underlying theoretical claim. Instead, this claim is provided by the existing body of literature which identifies evidence of different behaviour between LIS researchers and practitioners. The qualitative data provided by respondents also suggest that there are differences in the attitudes and perceptions between the groups, but they tell us little about what those differences are, and (crucially) nothing about *why* they exist. More detailed qualitative analysis, through structured interviews with individuals from both groups, could explain underlying complexities, particularly with respect to those factors where a statistically significant difference was found.

However, the results of the study do indicate that the relative importance of some factors may differ between researchers and practitioners, raising potential implications for practice. For instance, strategies to reduce this gap in order to improve knowledge and information transfer between both groups could include

increasing the level of librarian involvement in academic research, and encouraging academics to publish in more popular professional journals to improve dissemination to librarians and information workers generally (Haddow and Klobas, 2004).

5.2 The key drivers in the journal selection process

The findings of the survey largely confirm those of the existing literature in that there is no single dominant factor which appears to drive the journal selection decision (Gibler and Ziobrowski, 2002; Rowlands and Nicholas, 2005; Björk and Holmström, 2006). Instead, a blend of considerations typically informs the decision-making process of both researchers and librarians. The frequency distribution shows that nine of the 21 factors were ranked as 3 or higher by at least 90% of the sample, suggesting that journal selection is a complex and multi-faceted process.

Topical fit and peer-review both achieve median values of 5, indicative that both are viewed as 'essential' criteria by over 90% of the sample. In this respect, it is possible that niche publications may emerge with a specific focus, rather than more general LIS journals, as it is clear that authors place significant value on positioning their research in topical context and in reaching a particular target audience. Furthermore, at a time when there is much debate about the sustainability of the peer-review system compared to the potential efficiency of crowd-sourced and social media solutions, it seems that there is still some way to go before LIS professionals may be willing to consider an alternative model as the default. Over a quarter of respondents viewed opportunities for post-publication review as either unimportant or not at all important, casting significant doubt over the potential value derived from these channels.

It was also notable that over 90% of both researcher and practitioner groups ranked indexing in a major database as 3 or higher, in spite of the market penetration that has been achieved by Google and other generic web search and discovery tools. This may indicate that the LIS community still relies heavily on traditional scholarly databases for conducting their own research rather than the broader web. It may be useful to compare this trend over time, and to examine if search engine optimisation becomes a more pressing concern than database indexing in the future.

In contrast with Gibler and Ziobrowski's (2002) findings from the Real Estate sector, the results indicate that previous acceptance is not a significant factor for either researchers or practitioners. In fact one researcher specifically stated that they would actively avoid publishing more than one paper in any given journal. This may indicate that LIS professionals believe that publishing in several different journals is a more effective publication strategy, and that there is little evidence of the influence of a subjective preference for, or loyalty to, any particular journal when submitting manuscripts.

5.3 The influence of bibliometric measures

It is notable that the JIF does not rank as one of the most important criteria, although it is still viewed as important by the majority of respondents. However, as previously discussed, some of the other more highly-placed factors, particularly those relating to prestige, are not truly independent variables and may be partly influenced by the JIF itself. In this respect, it is possible that impact factors may have more importance than the results suggest due to more complex and implicit interaction effects. Further and more sophisticated analysis is required to evaluate this.

It is notable that the results provide some evidence of a researcher-practitioner divide for five of the seven prestige-related factors, including the importance of JIFs; the latter was ranked as very important or important by 76% of researchers compared with only 46% of librarians. This pattern echoes previous research, suggesting that librarians and researchers publish for very different reasons (Crowley, 2005; Haddow and Klobas, 2005; Schlögl and Stock, 2008). As other impact metrics were not perceived as relatively more important by researchers than by librarians, this may indicate that the JIF is still viewed as the key bibliometric measure by LIS academics. The numerous references to 'Web of Science' in the comments of researchers also lend resonance to this argument, supporting Bar-Ilan's (2008) claim that the ISI index is still the most routinely used source, even if other citation tools may be more appropriate. Indeed that the JIF and other impact measures are located some distance from each other in the frequency distribution is perhaps telling in itself in this respect.

5.4 Open access practices

Perhaps one of the more surprising results was the low ranking of both Green and Gold OA options in the overall preferences of the sample. Although much of the non-LIS literature suggests OA is still a relatively minor concern for many authors (Rowlands and Nicholas, 2005; Warlick and Vaughan, 2007), one would expect it to be regarded as more important in this field, considering the shared interest of librarians and of information scientists in the provision of easy access to research. However, fewer than half of the respondents viewed these criteria either as very important or important – indeed approximately one respondent in five believed that both factors are unimportant or not at all important. These results largely confirm the findings of Solomon and Björk (2012) that traditional factors such as topical fit and perceived quality still outweigh open access in authors' journal selection criteria, and LIS appears to be no different from other disciplines in this respect. Moreover, no significant difference was found between the preferences of librarians and those of researchers in this regard, which was consistent with the earlier observations of Xia *et al.* (2011).

Notwithstanding this, in recent years a number of new open access journals have emerged, and indeed flourished, within the discipline, showing that there is a demand for this kind of publication. However, some of the qualitative responses received from participants suggest that some LIS professionals remain unsure about OA, although the reasons for this are not clear. This may be because some OA journals are relatively new, and thus not perceived with the same regard as

more established titles. However, as many traditional journals still permit self-archiving, or indeed are now open-access, this cannot fully explain the hesitation. Whilst a lack of awareness of the significance of open access publishing could be relevant in other disciplines, this should not affect librarians and information scientists, for whom OA is a fundamental and widely-supported concept. Further research could be undertaken, perhaps targeting those who chose a non-open access publication for their most recent manuscript, to explore the barriers to developing a culture of OA publishing within LIS. Failure to address any negative perceptions or beliefs which may exist will cast doubt on the authenticity, and ultimately impinge on the success, of librarians' roles as open access advocates.

6 Conclusion

It is clear that the journal selection decision is a complex one. No normative stance is taken as to which factors *should* be given more weight than others, and these results can offer nothing more than a barometer of preferences at present. Similarly, the debate over whether or not a researcher-practitioner divide is inevitable is a broader concern outside the scope of this study.

However, from a practical point of view increasing the level of collaboration between researchers and librarians may erode such differences. It would probably benefit both parties through improved knowledge transfer and perhaps other behavioural or attitudinal changes. Reducing the excessive pressure on career- and prestige-driven aspects of publishing may help to engender a fresh perspective on the implications for practice of academics' research. This may require a change in both the culture and strategic objectives of higher education institutions, and from management personnel. However, by giving researchers the freedom to publish where they wish, it may open up access to additional niche publications or those that discuss less commercially-relevant or traditionally scholarly topics.

Librarians may also gain from increasing their focus on the quality and impact of the journals that they select, venturing outside their comfort zones to ensure their research receives greater attention, as well as ultimately improving their practice. Moreover by publishing in more scholarly journals, the pressing issues in LIS practice may be highlighted to academic researchers, helping them to achieve a higher profile on the overall LIS research agenda. This diffusion is encapsulated by Booth's (2003) evidence-based librarianship approach, which has proved one effective model for aligning the aims and research of both sides (Schlögl and Stock, 2008).

It also appears that open access publishing options still need to be promoted within the profession, as well as outside the profession, for researchers and librarians alike. If LIS professionals expect to be viewed credibly as open access advocates then they must lead by example. Personal responsibility, as well as guidance and leadership from relevant professional bodies have a role to play in helping to develop this culture. Moreover, open access LIS journals may need to intensify their marketing and branding activities, not only to attract more researchers but also additional readers, given that both the level and nature of readership are key factors identified by authors.

The results of the study also offer potential insight for journal publishers generally, particularly if they wish to attract a particular market segment – be it

researchers or librarians, or indeed both. In this context, targeting and promoting the most influential factors identified by each sub-group, may help individual publishers to attract a higher market share of LIS research and publishing output. This in turn may allow editorial decisions and policies to be more selective, thereby potentially increasing the quality of research and thus the perceived prestige of a particular journal. The broader issue as to how the volume and quality of LIS research can be increased in absolute terms may also provide a fruitful avenue for future research.

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