Journals as Communities: A Case Study of Core Journals in LIS

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ABSTRACT
This paper proposes an indicator for measuring the level of commitment to academic journals. The indicator is demonstrated on a sample of core LIS-journals. By monitoring authorship patterns over a 20-year period, it is shown that some journals have a higher frequency of returning authors than others, consequently showing a larger degree of community commitment. The paper discusses how the indicator may be applied when studying factors influencing researchers’ journal selection decisions.

KEYWORDS
Bibliometrics; Library and Information Science; Scholarly communication; Scientific communities.

INTRODUCTION
Philosophical Transaction of the Royal Society of London is generally considered to be the first real academic journal (Meadows, 1998). It was originally composed by the secretary of the Royal Society, Henry Oldenburg, and published for the first time in 1665. It functioned originally as a platform for communicating research among the members of the society. Many subsequent journals have since followed with similar purposes of acting as platforms for other scientific communities and their members. Such community-specific journals of course still exist. Yet, most modern journals no longer require membership of certain communities in order to get a paper published. Nevertheless, modern journals may also be seen as representing communities of researchers—but now in a more tacit or implicit manner. Memberships or subscriptions are therefore no longer quite as valid representations of such communities. Other indicators are therefore needed if one wants to track the community around a certain journal, and the strength of engagement among its members.

Having published a paper in a particular journal obviously qualifies as one important aspect of commitment to that particular journal. Consequently, the author(s) may therefore be viewed as community member(s). Yet, a single publication in the journal hardly qualifies as real commitment to that community. That would certainly require more publications in the journal, and a record of accomplishment of publications in the same journal over a longer period of time. Ni, Sugimoto and Jiang (2013, p. 269-270) examined how authors tend to repeatedly publish their papers in certain journals and concluded that researchers “stick to familiar ground and engage in repeated publications with a few favorite venues. As they do this, communities begin to form.” Drawing on this work Hsieh (2017) explored the publishing choices of a set of scholars to identify ecological journal characteristics and found a strong focus on a small number of journals.

In this paper we will propose a method for measuring the level of commitment to academic journals, and demonstrate it using a selection of core LIS-journals. By monitoring authorship patterns over a 20-year period, we will demonstrate that some journals have a higher frequency of returning authors than others. This, we argue, may be taken as an indicator of community commitment, and may be a supplementary tool when studying factors influencing researchers’ journal selection decisions.

We start out with a brief overview of related literature, and then explain how we calculate the indicator. We then demonstrate the indicator by presenting results from a case study of ten LIS-journals. Finally, we provide specific ideas for follow-up studies that might implement the proposed indicator.

RELATED RESEARCH
Garvey and Griffith (1971) were among the first to characterize the submission and resubmission decision process as reward maximization. They argued that authors get to know the hierarchy of journals as they get more experienced with publishing. If they fail with a journal in the upper level, they will resubmit to a journal at a lower level; Seldom do they submit a manuscript rejected by a lower-level journal to a journal on a level above. Moreover, as the years go by, many authors discover their ecological niche in this hierarchy, and seldom venture beyond it (Garvey and Griffith, 1971, p. 358). Consequently, authors are believed to seek reward maximization and therefore they will choose the most prestigious journal from amongst those which they feel would accept their papers. Should
the manuscript be rejected they will work their way down the hierarchy of journals until acceptance is secured
(Salinas & Munch, 2015; Heintzelman & Nocetti, 2009). More than three decades ago, Kochen, and Tagliacozzo
(1974) and Oster (1980) presented mathematical models that can be used to determine an optimal publication
strategy. The mathematical models consist of various incentives to publication which depend on a number of factors.
Kochen, and Tagliacozzo (1974) suggest the following factors to include when authors decide on a journal:
Relevance, acceptance rate, circulation, prestige and publication lag. Oster (1980) suggests the following four
factors: Prestige Index, familiarity Index, mean waiting time and acceptance probability.

The view of the selection process as reward seeking where researchers start by submitting to top journals in the first
submission and if necessary, resubmits to journals lower in the hierarchy until the manuscript is accepted has been
questioned by Gordon (1984) who argued that researchers select journals based on how the journal works as media
of communication. Consequently, Gordon argued that his study does not lend support to the view of submission and
resubmission as a simple model of reward maximization. Luukkonen (1992) tested if authors are attempting to
publish in the most prestigious journals possible and thus seek an optimal level in the hierarchy of publications.
Contrary to Gordon’s findings, Luukkonen found that the reward and communication functions of scientific
publishing were equally important in the selection of journals. Yet, the publishing behavior in some fields fitted the
maximization of professional rewards strategy best.

On the basis of empirical studies, Pepermans and Rousseau (2016) organized the factors that could drive an author’s
decision to submit to a given journal into three categories:

1. Author characteristics (e.g. past submission success)
2. Journal characteristics (e.g. publication delays, rejection risk, author charge, prestige)
3. Other research characteristics (potential impact or visibility of the paper, ethical issues).

More recent studies have included similar factors when exploring what determines an author’s decision to submit to
a given journal, but some have also added new perspectives. Salinas and Munch (2015) argued that authors decide
their submission order based on an intention to maximize citation count while minimizing the number of
resubmissions on one hand, or the amount of time it takes from submission to publication on the other hand. The
work by Wong, Srikrishnan, Hadka and Keller (2017) stressed the tension brought on by multiple rationalities
surrounding co-author values including time horizon and perceived probability of being scooped. Authors can thus
be particularly impatient or risk-averse and the optimal submission order is determined accordingly. Finally,
underinvesting in the practices and processes around peer review and thus resulting in poor peer review reputation
may lead to smaller submission numbers (Gaston, Ounsworth, Senders, Ritchie & Jones, 2020).

Rowley, Shaffi, Sugden & Gilbert (2020, p.14) concluded that “journal choice is becoming an increasingly
important and complex decision” and argued that [authors] “bring varying levels of experience, competence and
personal career objectives to the journal selection process”. Cheung (2008) also considered the past submission
success of the author as a factor when an author decides on a publication outlet and included both having been
rejected by the journal as well as having previously published in the journal.

Many of the existing studies on choice of publication outlet have been based on author surveys (e.g. Cheung, 2008;
Rowlands & Nicholas, 2005; Rowley, Shaffi, Sugden & Gilbert, 2020; Tenopir, Dalton, Fish, Christian, Jones &
Smith, 2016). Some are bibliometric analyses of a set of authors (e.g. Ni, Sugimoto & Jiang, 2013; Hsieh, 2017).
Finally, some studies are based on analyses of submission data from a set of journals (Gaston et al., 2020; Wong,
Srikrishnan, Hadka & Keller, 2017; Salinas & Munch, 2015).

METHOD

We propose to measure the level of commitment to academic journals by calculating the proportion of returning
authors. To begin with, this of course requires a definition of the concept returning author. Obviously, a returning
author is an author that has published twice in the same journal. Thus, the second paper marks the return. Yet,
seeking to quantify the level of engagement also requires a way to measure commitment. We will argue that this
should entail a time period. If there are many years between the two papers, the returning author is not showing real
commitment to the journal in question and should therefore not count when measuring the level of community
commitment. This raises the question of the length of the time period. Should it be one year, three years, five years,
ten years …? We have settled for a 3-year publication window. A shorter period may be too strict, and a longer
period too loose.

Thus, finding the number of returning authors in a set of journals require four years of journal data. For each journal
the authors are matched with authors in the same journal the preceding three years. If an author match is found, this
is treated as an act of journal commitment. Of course, an author may have published more than two papers in the
four-year period. Yet, the indicator is binary and therefore only counts whether the author has published in the same
journal in the preceding three-year period or not.
To illustrate the indicator, we have conducted a study of ten core journals in LIS. In order to show potential dynamics over time, we have collected 23 years of journal data (1997-2019), allowing us to track the development of journal commitment over a 20-year period (2000-2019). The ten core journals in question were taken from the list provided by White and McCain (1998). We adjusted the list according to title changes and excluded discontinued titles. Thus, the study includes the following journals: Data Technologies and Applications; Electronic Library; Information Processing & Management; Information Technology and Libraries; Journal of Documentation; Journal of Information Science; Journal of the Association for Information Science and Technology; Library and Information Science Research; Library Resources and Technical Services; Scientometrics.

The journal data were collected from searches in the database Scopus, limited to include three document types (article; review; note). To ensure precise author matching we used the Scopus Author Identifier. This tool distinguishes between ambiguous author names by assigning each author a unique number. Thus, matching was done using these unique numbers and not the actual author names. For each journal and each year (2000-2019) the retrieved author-ids were matched with the author-ids from the same journal the preceding three years. To exemplify: Retrieved author-ids from Journal of Documentation (2000) were matched with retrieved author-ids from Journal of Documentation (1997; 1998; 1999), retrieved author-ids from Journal of Documentation (2001) were matched with retrieved author-ids from Journal of Documentation (1998; 1999; 2000), etc. Finally, the proportion of matching author-ids was calculated as a percentage. For example: We found 49 unique author-ids in Journal of Documentation (2000). 14 of these matched an author-id from Journal of Documentation (1997; 1998; 1999) equaling 28.57%.

RESULTS

The percentage of returning authors varies between journals. Figure 1. shows the mean percentage of returning authors calculated for the entire period (2000-2019) with a 3-year publication window. The dots provide the means; The lines indicate the space between maximums and minimums.

Scientometrics displays the highest mean (28.49%); Information Technology and Libraries display the lowest mean (6.35%). As can be seen, the variation is larger in some journals compared to others. Library and Information Science Research and Data Technologies and Applications display the largest variance; Journal of the Association for Information Science and Technology and Journal of Documentation display the lowest variance.

Figure 2. shows the percentage of returning authors over time. Note that the curves have been smoothed by calculating the percentages as averages over the previous (if available), actual, and subsequent (if available) year. In the beginning of the investigated period, Scientometrics displays the largest share of returning authors, but then drops to about the same levels as Journal of the Association for Information Science and Technology and Journal of Documentation. Three other journals (Data Technology and Applications; Information Processing & Management; Library and Information Science Research) display rising tendencies during the first part of the investigated period, but then gradually falls back to their initial levels again. The four remaining journals (Electronic Library; Information Technology and Libraries; Journal of Information Science; Library Resources and Technical Services) display more stable tendencies in the lower to middle parts of the scale.
DISCUSSION

Our results demonstrate the applicability of the proposed indicator for measuring journal commitment. There are clear differences between journals, yet the ten LIS-journals in our study display rather stable shares of returning authors over time. It might be worth investigating other fields of research in order to explore the proposed indicator further. Perhaps researchers in other fields are even more committed to publishing in the same journals over and over again? When conducting further studies of the indicator, the publication window might also be investigated further. In this study we operate with a 3-year publication window because we assessed that to be suitable for the field of LIS. Others might try operating with a shorter/longer publication windows if deemed suitable.

Instead of limiting the study to returning authors, journal by journal, another follow-up could operate with a collection of journals, and then investigate to what extent authors return to the collection (and not just to one particular journal) over time. This might be a way to test the “familiarity hypothesis” reviewed in the related research section. As this hypothesis concerns the return to more than just a single journal, our results are not optimal in this regard. Nevertheless, we do find that eight out of ten journals display a rather high (>25%) proportion of returning authors some years, and three journals even display mean percentages over the entire period (2000-2019) around the 25% level or higher.

It might also be worth investigating whether authors tend to return to high impact journals rather than returning to low impact journals. In the related research section we also reviewed the so-called “reward maximization hypothesis”. According to this hypothesis, authors will tend to go after publishing in journals with a higher potential for maximizing citation counts. Implementing our indicator and comparing results with journal impact factors may consequently be a way to test the hypothesis. We have not obtained actual impact factors for the ten journals in our sample of journals. Yet, according to memory, the three journals displaying the highest mean percentages of returning authors have traditionally also been known to be among the journals with the highest impact factors in the field of LIS.

Finally, other journal characteristics that have been said to influence an author’s decision to submit to a given journal (publication delays, rejection risk, author charge, etc.) could also be studied from a returning authors perspective.

In short: Our indicator might be a valuable supplement to the toolbox when investigating factors influencing researchers’ journal selection decisions.

REFERENCES


