# THE ROLE OF EDITORIAL BOARDS OF SCHOLARLY JOURNALS ON THE GREEN AND THE GOLD ROAD TO OPEN ACCESS

by

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## Abstract

The traditional subscription-based publishing system of scholarly journals is in crisis, and open access has been suggested as an alternative model. However, participants in the traditional publishing system are engaged in a debate on its feasibility as a replacement for subscription-based journals. As the gatekeepers who determine what is published in scholarly journals, editorial boards play an important role in scholarly communication. However, although there are some studies of their role in scholarly publishing no major study has focused on their role in influencing journal access polices, and in particular, their role in influencing journal policies to make some or all articles free or to allow self-archiving by authors.

Through a survey of editors and editorial board members of major scholarly journals, this study explores their role in the open access movement. It examines the positions of the major publishers of scholarly journals (categorized as commercial, scholarly society and university publishers) to open access. In addition, it examines the awareness of journals' editorial boards of their publisher's access polices and whether their own attitudes to open access were consistent with those of their publishers. Editorial boards' behaviour as a force for change in setting open access policies is explored. The study also considers how their level of responsibility at the journal and their own open access publishing behaviour are related to their perception and promotion of open access.

The findings of this study show no clear-cut difference between categories of journal publisher in term of offering some or all of their articles free to users, and in allowing authors to self-archive. The respondents in this study demonstrated some awareness about journal access policies, with higher awareness of policies regarding offering free articles than of those on self-archiving. The majority of the respondents are satisfied with subscription-based journals although their opinion on offering free articles and on self-archiving is generally positive. They were not willing to take strong measures to influence journal access policies such as resigning from the editorial board. The level of responsibility at the journal, gender, and publishing behaviour influenced the respondent's answers to the questionnaire.

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# CHAPTER 1: INTRODUCTION

## 1.1 Background of the Study

In the seventeenth century, scholarly communication was changed significantly through the introduction of the first scientific journal, *Journal de Sçavans,* first published in 1665. In the same year, the *Philosophical Transactions of the Royal Society* was published as the first English language scientific journal (Allen, Qin & Lancaster, 1994; Wells, 1999). For the last 350 years, the research community has used scientific journals as the primary mechanism to share knowledge and ideas.

Scholarly communication is a broader concept than simply the sharing of ideas and knowledge or even publication. It comprises other elements such as evaluating for quality (impact) and preservation. The Higher Education Funding Councils of the UK (2001) define scholarship as follows:

> The creation, development and maintenance of the intellectual infrastructure of subjects and disciplines, in forms such as dictionaries, scholarly editions, catalogues and contributions to major research databases (Higher Education Funding Councils, 2001, cited in Halliday, 2001, np).

and the end process of scholarship is publically accessible information objects. Thus, scholarly communication is the dissemination of these information objects. The Association of College and Research Libraries defined scholarly communication as "the system through which research and other scholarly writings are created, evaluated for quality, disseminated to the scholarly community, and preserved for future use" (Association of College and Research Libraries, 2009, np).

Thorin categorized the scholarly communication process into three distinct aspects:

> 1) The process of conducting research, developing ideas, and communicating informally with other scholars and scientists.
> 2) The process of preparing, shaping, and communicating to a group of colleagues what will become formal research results.

> 3) The ultimate formal product that is distributed to libraries and others in print or electronically (Thorin, 2003, p. 1).

In defining scholarly communication, Ayris (2006) noted that many definitions focus only on authors, publishers, librarians, and readers. He extended the definition to include:

> The authoring, publishing, dissemination, and reading of information produced for teaching, learning or research in whatever format, with the tools, measures and systems needed to provide access to and store these materials in perpetuity (Ayris, 2006, np).

Most of these definitions of scholarly communication include creation, dissemination, and preservation. Scholars consider these three elements when they talk about scholarly communication but they also consider impact, quality, and access as crucial factors in scholarly communication.

The traditional publishing system served the scholarly community for more than 350 years but in recent years the increase in journal prices has resulted in what has been termed a "scholarly crisis" or a "serial crisis" (Thorin, 2003; Houghton and Vickery, 2005; Oren, 2008; King and Alvarado-Albertorio, 2008). Houghton and Vickery (2005) defined the serial crisis as a mismatch between library budgets and journal prices. Cole defined the scholarly crisis as a situation in which "institutional libraries are increasingly unable to fund journal title subscriptions, limiting the dissemination of academic research" (Cole, 2004, p. 83).

A number of studies have examined the increase in journal prices over time. Van Orsdel and Born (2003) examined the cost increase for 6,231 journals covered in three Information Sciences Institute (ISI) citation indexes from 1999 to 2003, based on pricing data in EBSCO[1]'s database. They stated that the average journal cost increase in North America over this period was 41%. For example, in Canada the average journal cost in 1999 was $135, in 2000 $145, in 2001 $153, in 2002 $161, and in 2003 $170. The average journal cost increased in Europe by 33% and in Asia by about 22% (Van Orsdel and Born, 2003). Tenopir and King (2000) examined the average price increase by publisher. They concluded that the average price for a journal from a commercial publisher increased from $55 in 1975 to $487 in 1995. For a society

[1] EBSCO (www.ebscohost.com) is a database provider and subscription management company.

publisher the average price was $28 in 1975 and by 1995 had jumped to $229, and for an educational publisher the average price in 1975 was $15 and in 1995 $119. According to Crow and Goldstein (2004), the prices of journals have increased an average of 8.5 percent per year since 1986, while academic libraries now spend three times more on journals than they did in 1986. Even in the current economic downturn, prices continue to rise; a recent *Library Journal* survey reported periodical price increases in 2008 in the range of 9 to 11 percent (Van Orsdel and Born, 2008). Price increases in 2009 were a percentage point or two lower, but still well above the level of inflationary increases (Van Orsdel and Born, 2009).

These results are typical of studies which show that there has been a substantial increase in journal prices over time. Other studies have demonstrated the same point, for example McCabe (1998), King and Tenopir (1998; 1999), Bergstrom and Bergstrom (2001), Schlimgen and Kronenfeld (2004), King and Alvarado-Albertorio (2008) and Van Orsdel and Born (2008; 2009).

The problem created for libraries by the increase in journal prices has been further compounded by the increase in the number of publications available, since it is impossible for any single library to afford to have them all (Naisbtt, 1982; Odlyzko, 1995; Björk et al., 2008). The number of journals has increased dramatically and in 2004 it was estimated that together they publish about two million articles a year with eight billion dollars in annual revenues (Lock, 2004). In recent years, libraries have faced significant budget cuts as a result of the economic recession, which has further eroded their purchasing power and exacerbated the impact of the crisis in scholarly publishing on libraries (Van Orsdel and Born, 2009).

The increase in journal prices and number of available publications is accompanied by another important element, which is advances in technology (Thorin, 2003; Willinsky, 2006). While the increase in prices and titles resulted in a serials' crisis, advances in technology opened up an opportunity to resolve these problems. Regazzi stated that:

> New technologies have created opportunities for STM publishers to deliver research-related content more quickly and cost-effectively, creating a landscape of innovative publishing initiatives that include pre-print servers, self-archiving in university repositories and electronic-only publishers with traditional business models. Open Access appeared on this

> landscape as a result of these new technologies and the publishing industry's low barriers to entry. Alternative publishing is a broad market development that is being embraced differently by a range of players (Regazzi, 2004, p. 275).

Technologies such as the World Wide Web (WWW) facilitate open access, through a number of models[2] for scholarly communication that allow readers to access scholarly work with no fee. Willinsky (2006) states that "open access is a direct and immediate response to this state of affairs in scholarly publishing", that is, the increase in journal titles and in journal prices (Willinsky, 2006, p. 35), although non-economic factors also played a role in the subsequent development of open access, as discussed in Chapter 2.

Open access is a form of scholarly communication that takes advantage of new technology and improvements in electronic publishing. It allows better scholarly communication by reducing or eliminating publishing expenses, which means more people will be able to access more publications. The continued increases in journal prices make open access an attractive alternative to a commercial publishing model.

The definition of open access focuses on a number of elements but free access is the central point. The Budapest Open Access Initiative, which is an international effort to make research articles in all academic fields freely available on the Internet, defined open access as follows:

> By 'open access' to this literature, we mean its 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 (Budapest Open Access Initiative, 2002, np)

[2] In this study 'open access models' is used as an inclusive term for the range of approaches to providing free access to journal content and author self-archiving

In general, there are two approaches (referred to as 'roads') to publishing in an open access model: the gold road, and the green road (Harnad et al., 2004). In the gold road, authors publish their work in an open access journal that makes their work freely accessible online upon publication. In the green road, authors can self-archive a copy of their work but they usually publish the final version of the work in a subscription-based journal (Goodman, 2004; Suber, 2006b).

The majority of the key scholarly publishers did not welcome the new publishing model. Publishers of scholarly journals vary by type, and include commercial publishers, scholarly societies, and university presses, and also by size, ranging from international commercial publishers with thousands of journal titles, such as Elsevier, to large scholarly societies like the American Chemical Society and the Association for Computing Machinery, with many journal titles targeted to their members, to small publishers who may have only one or two titles, managed largely by a volunteer staff. While publishers may vary by type and size, they share some common concerns over the viability of open access models as a viable replacement for the traditional publishing model. These include uncertainty about their financial stability as a result of new pricing models, quality of peer reviewing, indexing and impact factors for open access journals, archiving mechanisms, and the stability of this new publishing model for scholarly literature (Kwasik and Fulda, 2005).

However, the degree of opposition has dropped in recent years. Many of these publishers have changed their policies toward open access. Now, many of them allow authors to post a copy of their work on the Web. For example, the American Psychological Association (APA) policy in 1996 stated:

> Authors are instructed not to put their manuscripts on the Internet at any stage (draft, submitted for publication, in press, or published). Authors should be aware that they run a risk of having (a) their papers stolen, altered, or distributed without their permission and, very importantly, (b) an editor regards such papers as previously "published" and not eligible as a submission—a position taken by most APA journal editors.
>
> In addition, after acceptance for publication, the publisher is the copyright holder. APA does not permit authors to post the full text of their APA-published papers on the Internet at this time,

> as developments in the on-line world cannot be predicted. The APA will, however, closely follow such Internet developments. The P&C Board will establish a task force in June 1997 to investigate developments and recommend a longer term APA policy (Cited in Kling and McKim, 1998, np).

APA's policy has changed in this regard, and authors now have the option to post the final copy of their articles from APA journals on their own web page (Bullock, 2004). The new policy states:

> If a paper is unpublished, the author may distribute it on the Internet or post it on a Web site but should label the paper with the date and with a statement that the paper has not (yet) been published.
>
> Upon submitting the paper for publication, the author is obligated to inform the editor if the paper has been or is posted on a Web site. Some editors may consider such a Web posting to be prior publication and may not review the paper.
>
> Authors of articles published in APA journals may post a copy of the final manuscript, as a word processing, PDF, or other type file, on their Web site or their employer's server after it is accepted for publication (APA, 2008, np).

Other publishers have responded similarly. Coleman (2006) observed that a large majority (90%) of ISI ranked Library and Information Science (LIS) journals do not prohibit self-archiving defined in any way.

One publisher, the Hindawi Publishing Corporation, established in 1997 as a subscription publisher, has converted all of its subscription-based journals to open access journals (Ayris, 2006; Suber, 2007). At present, Hindawi publishes more than 150[3] open access, peer-reviewed journals covering several areas in Engineering, Life Sciences, Mathematics, and Physical Sciences (Hindawi, 2009).

A number of research projects have focused on journal access policies. For example, the RoMEO project was funded by the Joint Information Systems Committee (JISC) in 2002-2003 at the University of Loughborough to examine the rights issues surrounding the self-archiving of

[3]Available at (http://www.hindawi.com/about.html) access date September 2009.

research in the academic community in the UK under the Open Archive Initiative's Protocol for Metadata Harvesting (OAI-PMH). As a result of this work, the RoMEO project established a list of publishers' policies for self-archiving. RoMEO (Rights Metadata for Open Archiving) is one of many projects undertaken by Securing a Hybrid Environment for Research Preservation and Access (SHERPA). SHERPA is investigating issues in the future of scholarly communication. Currently, 33 institutions support SHERPA: the British Library, and 32 institutions of higher education. Statistics for the 560 publishers from around the world listed on the SHERPA/RoMEO website show that 63% of them formally allow some form of self-archiving (SHERPA, 2006b).

However, while open access journals are increasing in number that does not mean a complete change in publishers' behaviour toward open access. Watkinson stated in 2007 that the number of articles published in open access is about one hundred thousand compared to one million published the previous year in the subscription-based journals ranked by ISI. He added that "this imbalance in the small number of OA articles published to date indicates that the great majority of scholarly journal publishers still do not embrace OA." (Watkinson, 2007, p. 13). According to *Library Journal*'s most recent survey on periodical prices:

> Some [publishers] are moving aggressively toward OA business models, but most are taking smaller steps—liberalizing copyright transfer agreements or facilitating manuscript deposit into designated digital archives, for example (Van Orsdel and Born, 2009, np).

This suggests that traditional publishers are not leaders in the open access movement, but are responding to external events and forces.

Commercial publishers, scholarly societies, and the academic press are the three main groups who publish scholarly content (Houghton and Vickery, 2005; Willinsky, 2009). For example, when Tenopir and King (2000) examined the average price increase by publisher, they listed commercial, society, and academic as the categories of publishers considered in their study. The views of the above three publisher types seem to vary with respect to open access.

Many commercial publishers oppose the open access models as a replacement for the traditional publishing model for financial reasons. Lamb (2004) noted that the threat to

commercial publishers could increase when more information, especially journal articles, is free on the Web. Goodman (2004) suggested that scholarly societies might appear to be more opposed to open access than commercial publishers; they may oppose the open access models because they cannot operate without subscription revenues, which support other activities such as conferences and scholarships. Lamb (2004) believes that university presses are more innovative and experimental with open repositories, new forms of electronic publication and less stringent copyright and reuse policies with authors when compared to scholarly associations.

Of course, publishers are not the only stakeholders in the open access movement. Other parties involved in the open access models are authors, editors and editorial boards, readers, libraries, academic organizations, funding agencies, research institutions and governments (Kling and McKim, 1999; Prosser, 2004; Brodie, 2005; Suber, 2006b). Further discussion on these groups and their roles in relation to open access will be provided in Chapter 2.

In summary, scholarly communication is in crisis because of the increase in journal prices and in the number of journal titles. However, technology has provided the infrastructure for an alternative, that is, an open access model, although the major publishers of scholarly work have been slow in adopting the new models for their publications.

## 1.2 Problem Statement

For libraries, traditional publishing is in crisis and the options to resolve this crisis are limited. Open access models offer an alternative but most major scholarly publishers (commercial publishers, scholarly societies publishers, and university presses) oppose these models to some degree. While traditional publishers may have been reluctant to embrace an open access model, other participants in the scholarly publishing process, such as authors, a number of funding agencies and academic institutions, have played an important role,. One group which has the potential to influence open access policies is the editors and editorial board members of scholarly journals. However very little is known about this group and their role in open access, and it is the purpose of this study to examine their attitudes[4] and actions with respect to open access.

[4] While "attitude" as a concept has been the subject of considerable discussion in the literature of psychology (Gustad, 1951) for purposes of this study we will adopt a relatively simple definition from Colman's Dictionary of

There is a demand from external parties involved in the publishing process (e.g. authors and libraries) for publishers to change their policies to open access, as discussed in Chapter 2. The extent of the parallel demand for change from internal parties (e.g. editors and editorial boards) is not known. In some cases editors have expanded their traditional roles by requesting that the journal publisher change its access policies. According to Suber (2006a) and the Journal Declarations of Independence,[5] a number of editors have resigned to protest high subscription prices or because of access limitations. In many of the cases reported, the editor and/or the editorial board have launched a new journal that is free or affordable. For example, in June 1989, editor Eddy Van Der Maarel and most of his editorial board resigned from *Vegetatio* in order to launch the *Journal of Vegetation Science*. In 1998, most of the editorial board of the *Journal of Academic Librarianship* resigned to protest the high subscription prices of Pergamon-Elsevier. Some of the editorial board members who resigned created *Portal: Libraries and the Academy* at Johns Hopkins University Press. In November 1998, Michael Rosenzweig and the rest of his editorial board resigned from *Evolutionary Ecology* in order to create *Evolutionary Ecology Research*. In 2004, the editor and the entire editorial board of *Les cahiers du numérique* resigned because of its high subscription price and limitations in access to content. In 2006, the editorial board of *Topology* resigned over concerns about the high subscription price set by Elsevier and launched the *Journal of Topology.* These well publicized cases however represent only a small portion of scholarly publications.

Editors and editorial boards act as gatekeepers (McGinty, 1998; Dow, 2000). Their traditional role is to select manuscripts which meet the journal's standards for publication. They base their decisions on what is best for the reader, the author, and their journal, in the context of their field of study. However, their role has not traditionally included consideration of the mechanism by which journal content is communicated to the reader, although the journal crisis has had an impact on the ability of libraries and individual scholars to subscribe to their journals (Dow, 2000). As a result, manuscripts that have been selected for publication through the editorial process are not accessible by many readers. Whether the editor's role as gatekeeper is seen to extend to improving this situation by promoting open access is addressed in this study.

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Psychology (2009) which reflects common usage of the term: "An enduring pattern of evaluative responses towards a person, object or issue".

[5] Available at (http://oad.simmons.edu/oadwiki/Journal_declarations_of_independence) access date September 2009.

The problem here is not whether editors and editorial boards can or ought to change journal access policies, but the ambiguity of their role. There is some external pressure on editorial board members, for example from their academic institutions (University of California Library, 2008), to promote journal policies which support open access, but as agents of the journal their primary role is to serve as gatekeepers of scholarly information. Whether they are also using their editorial position as an opportunity to promote open access is explored in this study. For example, many publishers have changed their access policies and now allow authors to post their articles as pre-prints or post-prints. (The pre-print is the version that has not been peer-reviewed and the post-print is the version after it has been peer-reviewed.) In the RoMEO project database about 63% of the 560 publishers listed allow some form of self-archiving (e.g., pre-print or post-print)[6]. Now, it is quite possible that the editors and editorial boards participated in the decision to allow self-archiving. However, it is not clear how significant their involvement was, or who first raised the issue of self-archiving. There are three scenarios. In the first scenario, the publisher raised the issue and decided to implement the rule without consulting the editor and the editorial board. In the second scenario, the publisher raised the issue and consulted with the editors and the editorial board. In the third scenario, the editor and/or the editorial board raised the issue. The frequency of occurrence of these scenarios, and the role of the editors and the editorial boards in them, is not known. Nor is it known to what extent editors and editorial boards view these decisions as within their responsibility for the journal.

This new role for the editor, influencing how publishers control knowledge dissemination, expands his or her contribution to the scholarly community. Editors are responsible for journal content, but some of them have taken on another responsibility beyond journal content. They believe this content needs to be accessed by any individual who requires access to it and have taken an active role to promote this access. How common this belief is, and what its impact is on journal policies, is not known.

The topic of open access is new to the research community and in order to judge it properly every aspect of the topic needs to be investigated. There are a number of studies that cover some elements of the open access models. For example, Park (2007) completed a

[6] SHERPA/RoMEO Database (http://www.sherpa.ac.uk/romeo/) access date March 2009.

dissertation on the factors affecting scientists' adoption of open access; Rowlands, Nicholas, & Huntingdon (2004) conducted a study to examine authors' opinions of open access models; Odlyzko (2002), Kurtz et al., (2004) and Harnad et al., (2008) focused on the effect of open access on the journal impact factor; the Kaufman-Wills Group (2005) examined the financial and non-financial effects of alternative business models (i.e. open access) on scholarly journals and Houghton et al. (2009) explored the cost and benefits of alternative scholarly publishing models. In their study on open access in 128 society journals produced by members of the Association of Learned and Professional Society Publishers (ALPSP), the Kaufman-Wills Group (2005) reported that these journals were heavily influenced by their publisher (46.9%) and publication staff[7] (27.3%) to offer free content.

However, no study has focused exclusively on the role of editors and editorial boards in open access, although their role has in some cases been significant, and they have demonstrated their potential to promote change. As Watkinson (2007) has pointed out, the voluntary contributions of authors and editors are critical to the success of scholarly journals, and they hold enormous power, which they have in most cases been reluctant to exercise.

It is important to examine the role of editors and editorial boards in a major study. This study examines the role played by editors and editorial boards in the open access movement in general and in determining journal access policies in particular (their role in the green and gold road to open access, which will be described in Chapter 2). The study examines their role not only as gatekeepers, that is, in determining what articles should be published, but also their role in ensuring access to these articles. Their attitudes toward open access are explored in terms of their own publishing behaviours as well as in terms of their actions as editorial board members. The impact of their role, that is, their level of responsibility for the journal, and the type of publisher which they serve (commercial publishers, scholarly societies, and university presses) are also examined.

In addition to examining the role of editors and editorial boards, this study examines the current policies of commercial publishers, scholarly society publishers, and university presses to open access, as perceived by these editorial boards.

[7] Although 'publication staff' are not defined in the report, the context suggests that this is a reference to the editor and editorial board members.

## 1.3 Research Questions

This study addresses the following research questions:

1. What positions have journal publishers (categorized as scholarly societies, commercial publishers, and university presses) adopted on open access as expressed in their current access policies on offering free content to users and allowing authors to self archive?

2. How aware are editors and editorial boards of their publisher's access policies?

3. How consistent are the attitudes of editors and editorial boards to open access with those of the publishers they serve?

4. Have editorial boards acted as a force for change in access policies set by journal publishers (scholarly societies, commercial publishers, or university presses)?

5. How is the perception and promotion of open access by editors and editorial board members related to (a) their level or responsibility at the journal and (b) their own open access publishing behaviour?

In this study, these research questions are addressed through a survey of the editors and editorial board members of a sample of major scholarly journals.

## 1.4 Significance

The role of commercial publishers, scholarly societies, and university presses in the publishing of scholarly journals is crucial. However, most of these publishers have been reluctant to adopt an open access model, primarily for financial reasons (Lamb, 2004; Goodman, 2003), and movement toward open access has been slow, with changes occurring in some instances only when a library or group of libraries has been able to exert economic pressure (Van Orsdel and Born, 2009). There is pressure from authors, libraries, academic institutions, and readers to change publishing policies to open access. This study focuses on editors and editorial boards' role in changing publisher' access policies to offer free content. It examines the significance of the role of editors and editorial boards in the open access movement and in shaping journal access policies.

Open access should be studied from all angles so that we can judge its impact and potential, and the role of editors is a crucial element that has yet to be considered carefully. Editors and editorial boards are an important element in knowledge communication since they are the gatekeepers who select what should be published. This study is a contribution to understanding whether that role has been expanded in the context of open access.

This study is informed by Lewin's (1947a, 1947b) theory of gatekeeping. However, the study has considered the relevance of Lewin's theory to journal publishing in a broader sense, by examining not only the role of editors and the editorial board as traditional gatekeepers, that is, in selecting articles that are suitable for publication, but as participants in the publishing process who may have the influence necessary to change journal access policies. The study examines whether the open access movement has led to changes in the role of editors and editorial board members as gatekeepers. As the open access models bring changes to the system of scholarly publishing, this study examines the gatekeepers' attitudes toward and contributions to these changes.

This study is important to scholarly communication because it contributes to our understanding of the roles of editors and editorial board members in a changing publishing climate. In addition, it indicates how editors and editorial boards have interacted with publishers. As Watkinson (2007) stated, the role of editors and authors is potentially very significant. If they stood firmly against their publisher, they might change the publishers' policies on open access. They are important contributors to the process of scholarly communication, and their role is examined in this study.

## 1.5 Limitations

The study as designed was subject to limitations imposed by the environment in which scholarly publishers operate. For example, the study focuses only on the current policies of commercial publishers, society publishers, and university presses, because it is not possible to consistently track previous policies of these publishers, either because they had no published policies on open access in the past, or because policies and changes in policy are not well documented in public information sources or on their Web sites.

Another limitation is that scholarly societies sometimes publish their journals themselves and sometimes through a contract with commercial publishers (Sage, 2008). In this study the journals of scholarly societies are treated as a separate category though it is possible that the nature of the contract with the commercial publisher will limit the scholarly society's autonomy with respect to open access.

While university presses may have an extensive publishing program, only their role as publishers of scholarly journals will be considered here. Their role as publishers of monographs is not considered relevant to this study.

## 1.6 Definition of Key Terms

*Editors and editorial board members:*

Editors and editorial board members are the group who serve scholarly journals with the function to evaluate the quality of scholarly articles submitted to the journal and select those which meet the journal's standards for publication (either directly or by setting policies for this process). They assist, as external experts on content, in the dissemination of knowledge in their field. Their job is usually performed on a volunteer basis, though editors may be compensated and/or receive logistical support (McGinty, 1998; Hames, 2007). For the purpose of this study we have developed the following definitions:

- Editorial board: represents the entire group of individuals who work on a scholarly journal and are responsible for the journal tone and directions. Those individuals have different roles at the journal, such as editor, managing editor, associate editor, book review editor, section editor, member of the editorial board.

- Editor: the person primarily responsible for the overall content and direction of the journal (for example, with a title like editor, editor-in-chief, managing editor).

- Associate editor: a person in a secondary role with responsibility for moving specific papers through the review process (for example, with a title like associate or assistant editor).

- Section editor: a person in a secondary role with responsibility for a specific section of the journal (for example, a book review editor or section editor).

- Member of the editorial board: represents those who commonly review scholarly articles and provide recommendations such as accepting or rejecting a particular article and have responsibility as quality assurance officers, or simply serve as an advisory panel on journal policies and direction. This category does not include those who identify themselves as editors, associate editors, and section editors.

*Gatekeepers:*

Gatekeepers are the individuals involved in selecting which item shall pass through a channel (Lewin, 1947a, 1947b). In scholarly publishing, gatekeepers are the editors and the editorial boards who control what will be published and act as guardians of the type of content that will be accessed by readers.

*Open access:*

Open access is the mechanism that provides readers with a scholarly work, which is available via the World Wide Web, with no financial obligation to the reader. The work can be delivered through two methods. First, the "gold road" means that authors can publish their work in an open access journal, which makes their work freely accessible online upon publication (Harnad et al., 2004). Second, the "green road" means that authors can self-archive (that is, deposit or post) a copy of their work in an institutional repository, on a personal website, or in an archive (Harnad et al., 2004). A more detailed definition of open access is developed in Chapter 2.

*Open access journal:*

A journal that is available via the World Wide Web, and its material is free for all users to read and use.

*Open access movement:*

The open access movement is the movement toward the development of new publishing models with the goal of providing free content to users. It started because of the scholarly crisis

in journal publication, and the advances in technologies which made alternate publishing models possible.

*Repository:*

A collection of resources, which consists primarily of scholarly articles but may include other materials such as theses and dissertations, that is publically accessible to users.

*Scholarly publishers:*

Organizations who contribute to the scholarly communication process through the publication of scholarly material. In this study, scholarly publishers are limited to those who publish scholarly journals. Three main types of publishers of scholarly journals are identified: commercial publishers, scholarly society publishers, and university presses. These three types of publishers are discussed in detail in Chapter 2.

*Self-archiving:*

The depositing of a digital form of a scholarly work in publically accessible websites such as personal pages and repositories.

*Scholarly communication:*

Scholarly communication is "the system through which research and other scholarly writings are created, evaluated for quality, disseminated to the scholarly community, and preserved for future use" (Association of College and Research Libraries, 2009, np).

## 1.7 Structure of this Dissertation

The remainder of this dissertation is organized as follows: an overview of the literature relating to this study is presented in Chapter 2. Chapter 3 discusses the methodology used in this research. Chapter 4 presents the data obtained from the questionnaire, and Chapter 5 provides a more detailed analysis of the data. Chapter 6 discusses the findings in the context of the research questions, and presents the conclusions from the study and suggestions for further work.

# CHAPTER 2: LITERATURE REVIEW

## 2.1 Open Access Definition and Background

Open access is a form of scholarly communication that takes advantage of new technology and improvements in electronic publishing. The continued increases in journal prices make open access an attractive alternative to a commercial publishing model for libraries and other subscribers.

The definition of open access focuses on a number of elements but free access is the key point. The Budapest Open Access Initiative, which is an international effort to make research articles in all academic fields freely available on the Internet, defined open access in 2002 as follows:

> By 'open access' to this literature, we mean its 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 (Open Access Now, 2007, np).

In April 11, 2003 about 24 participants from various countries (for example, the US, the UK, and Germany) held a meeting on open access publishing. They provided a definition of open access, which is called the Bethesda Statement on Open Access Publishing. The definition consisted of two parts:

> 1) The author(s) and copyright holder(s) grant(s) to all users a free, irrevocable, worldwide, perpetual right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship, as well as the right to make small numbers of printed copies for their personal use.

> 2) A complete version of the work and all supplemental materials, including a copy of the permission as stated above, in a suitable standard electronic format is deposited immediately upon initial publication in at least one online repository that is supported by an academic institution, scholarly society, government agency, or other well-established organization that seeks to enable open access, unrestricted distribution, interoperability, and long-term archiving (for the biomedical sciences, PubMed Central is such a repository) (Open Access Now, 2007, np).

At about the same time, the Berlin Declaration, which was made by a group of European research organizations and funding bodies, set up a similar definition that consists of two parts. The declaration resulted from a three-day conference in 2003, held in Berlin, Germany. It proposes that open access contributions need to meet the following conditions:

> 1. The author(s) and right holder(s) of such contributions grant(s) to all users a free, irrevocable, worldwide, right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship (community standards, will continue to provide the mechanism for enforcement of proper attribution and responsible use of the published work, as they do now), as well as the right to make small numbers of printed copies for their personal use.
>
> 2. A complete version of the work and all supplemental materials, including a copy of the permission as stated above, in an appropriate standard electronic format is deposited (and thus published) in at least one online repository using suitable technical standards (such as the Open Archive definitions) that is supported and maintained by an academic institution, scholarly society, government agency, or other well-established organization that seeks to enable open access, unrestricted distribution, inter operability, and long-term archiving (Open Access Now, 2007, np).

The above three definitions of open access, Budapest (February 2002), Bethesda (June 2003), and Berlin (October 2003), are referred to as the BBB definition (Suber, 2006b). These definitions agree that a free copy should be granted to users. This copy should be deposited to an

online repository using a standard electronic format. These definitions are roughly similar and they represent current understanding of open access.

## 2.2 Open Access Models

In general, there are two approaches (referred to as 'roads') to publishing in an open access model: the gold road, and the green road (Harnad et al., 2004). In the gold road, authors publish their work in an open access journal that makes their work freely accessible online upon publication. According to Sotudeh and Horri (2007) the early studies on open access focused on the gold road. Examples of studies that focused on the impact of free electronic journals and their role in scholarly communications include Harter (1996), Harter and Kim (1996), Wells (1999), Fosmire and Yu (2000) and Llewellyn, Pellack, & Shonrock, (2002). In this Chapter a number of studies are discussed which address the open access pricing models, peer-reviewing, indexing, impact factor, archiving, and stability. At present, the Directory of Open Access Journals (DOAJ) lists more than 4300 journals[8].

In the green road, authors can self-archive a copy of their work but they usually publish the final version of the work in a subscription-based journal (Goodman, 2004; Guédon, 2004; Harnad et al., 2004; Harnad, 2005; Albert, 2006; Suber, 2006b). Authors may archive their work as a pre-print or post-print. The pre-print is the version that has not been peer-reviewed and the post-print is the version after it has been peer-reviewed (SHERPA, 2006a).

Swan and Brown (2005) stated that self-archiving has its roots in the field of computer science. They reported that a substantial proportion of authors are unaware of the possibility of providing open access to their work by self-archiving. It should be noted that in a study to examine self-archiving practice in institutional repositories, Xia (2007) reported that the majority of items were deposited by others on behalf of faculty. So, this may play a role in authors' low awareness of self-archiving.

Pinfield (2005) argues in his paper for mandating self-archiving. He stated "the best way to achieve major improvements in scholarly communication in the short and medium term is to make it mandatory to deposit research papers in open access institutional repositories" (Pinfield, 2005, p. 30).

[8] From (http://www.doaj.org/) access date October 2009

There are a number of models of by which open access can be achieved. Ten common models are described briefly in Table 1, which is adapted from Willinsky (2006, p. 212).

**Table 1: Open access models**

| Type of open access | Economic models | Example |
|---|---|---|
| Home page | Authors publish their work on a personal home page or a home page maintained and supported by their university department free of charge. | http//:www.econ.ucsb.edu/~tedb/ |
| E-print archive | Authors post their work prior to publishing or after in an open access e-print archive or institutional archive. | arXiv.org |
| Author fee | This model relies on author fees to support and maintain the model financially and provides immediate and complete open access to journal articles. The fees are paid by the author him/her self or the organization that supports the author's research. | BioMed Central |
| Subsidized | This model is mostly supported by scholarly societies, university departments, government agencies, or foundations. There are no charges for the readers or the authors and the journal relies heavily on volunteers. | First Monday |
| Dual-mode | The subscription fees of the print edition of the journal support the online version. Therefore, the online version offers immediate and complete open access to the entire content of the print edition. | Journal of Postgraduate Medicine |
| Delayed | The full access to the content is provided after a period of time (e.g. six months). | New England Journal of Medicine |
| Partial | The journal is subscription-based but offers free access on a selective basis to a small selection of articles in each issue. | Lancet |
| Per capita | Open access is offered to scholars and students in developing countries. | HINARI |
| Indexing | Open access is only offered to the table of contents and other bibliographic information and abstracts with links to pay-per-view for full-text access. | ScienceDirect |
| Cooperative | Members (e.g. universities) cooperate to support open access journals and development of publishing resources. | German Academic Publishers |

## 2.3 Issues in Open Access

The open access models are proposed as a replacement for the system of traditional scholarly communication that has been functioning for the last 350 years. Traditional scholarly communication is successful and plays a crucial role in disseminating knowledge. However, inflation in journal prices, information overload, and advances in technology have created a favorable environment for new models (Thorin, 2003; Houghton and Vickery, 2005; Willinsky, 2006).

The price of journals increased an average of 8.5 percent per year from 1986 to 2001, while academic libraries were spending three times more on journals than they did in 1986. In the same period, personal subscriptions to scientific journals dropped to less than half of what they were in 1986 (Crow and Goldstein, 2004). However, not only has the price of journals increased but so has the amount of research being published, especially in the sciences. At the same time, technology has advanced significantly in the last two decades, making new models of scholarly communication feasible (Regazzi, 2004).

Commercial publishers, scholarly society publishers, and university presses have been slow to adopt open access because of a number of issues, which include pricing models, peer reviewing, indexing and impact factors, archiving, and the stability of these new publishing models for scientific literature (Kwasik and Fulda, 2005). For each issue, there are two sides, one side claiming the open access models have advantages and the other side in opposition to such claims. These issues will be addressed in more detail in the sections which follow.

### 2.3.1 Pricing Models

The introduction of electronic journals led publishers to adopt new business models. Many publishers started to offer an electronic version of their print journals. Some journals require licensing, pay-per-use, or access may be free. A number of studies have focused on the economic aspect of these models.

The Kaufman-Wills Group[9] study (2005) focused on the financial and non-financial effects of alternative business models on scholarly journals. They found no evidence that an open

[9] The Kaufman-Wills Group offers consulting services to the publishing industry; http://www.kaufmanwills.com/

access model is financially viable. Although the Group states that it is too early to draw any conclusions, they provide some useful information. Their study shows that 41% of the full open access journals studied operated with a shortfall, 24% broke even, and 35% made a surplus. Most of the income came from advertising and not as expected from fees. Of the full open access journals in the study, 52% do not charge authors any fees. Crow and Goldstein (2004) identified a number of income sources for open access such as author fees, processing fees, sponsorship, a community marketplace, government grants, gifts and fundraising.

In contrast, a study by the Wellcome Trust[10] (2004) indicates that an open access model of scientific publishing, in which authors of a research paper pay for peer reviewing, and the research is made available on the Web free of charge, is economically viable. They claim that the payment of $1950 by authors in this study is sufficient to sustain a publishing model. Suber (2002) pointed out that open access publishing is compatible with revenue and sometimes profit. However, some have questioned whether the author-pays model is financially viable (Willinsky, 2003; Houghton and Vickery, 2005).

The open access models could be financially sustainable through author fees, processing fees, sponsorship, a community marketplace, government grants, gifts and fundraising, or other sources. But an argument has been made that some models are not free and that it could cost universities a large amount of money. For example, in 2003 scientists and social scientists at Duke University published about 4,500 papers, and if those papers were published under an open access model that charges about $1,500 per paper then the total cost would be $6.75 million, while the university's total budget for journals at that time was about $6.6 million. Therefore, by this calculation universities may have to pay as much for open access to journal content as they pay now for journals through subscriptions (Guterman, 2004).

### 2.3.2 Peer Reviewing

Most scholars who publish their scientific work in peer-reviewed journals seek research impact, unlike professional authors who seek profit. The impact reward is recognition from peers, research funding, promotion, prizes, or other non-profit rewards (Harnard, 2001; Crawford, 2003; Harnad et al., 2004). In the past, most authors transferred their rights over their

[10] The Wellcome Trust is an independent charity funding biomedical research; http://www.wellcome.ac.uk/

work to publishers who in exchange published the work in prestigious peer-reviewed journals and made a profit. In open access journals, that process may be different when the publishers' goal is not making a profit, and authors retain their authority over the work published. The authors may be concerned that the peer review process will be less rigorous, which may make them hesitate to publish in open access journals (Velterop, 2003; Harnad, 2003; Tamber, Godlee, & Newmark, 2003; Harnad, 2001).

The Kaufman-Wills Group (2005) confirms the concern expressed by authors that open access journals may not carry out peer review or copy-editing. Nevertheless, they pointed out that many open access journals conduct peer review in house, although they do not consider this to be equivalent to classical peer review.

One academic author, David Wood, questions the seriousness of the research published in an open access environment. He says, "One of the fears is that open-access journals are going to somehow dilute the seriousness of our research", and he adds "With free online journals, people perceive that they get what they pay for (Lock, 2004, p. 123). He argues that the peer-review process needs to be examined before authors, universities, and funding agencies recognize the open access models as an acceptable publishing mechanism. However, a study by Swan and Brown (2004) found that 76 percent of authors considered the peer reviewing process in open access journals to be the same as in traditional journals.

Open access aims at removing the barriers of price, not the quality control. Major initiatives such as the Public Library of Science (PLoS), the Budapest Open Access Initiative, and BioMed Central all agree that peer review is essential for scientific journals, whether print or online, free or for fee (Suber, 2002). For example, *PLoS Biology* is a peer reviewed open access journal that is ranked in the top tier of life science journals by the Institute for Scientific Information (ISI), with an impact factor of 12.7 in 2008[11].

In many cases the peer-review processing for open access articles follows the same process as for non-open access articles (Poynder, 2006). Suber goes further and states that:

> peer review at OA journals can be as rigorous and honest as peer review in conventional journals in that it can use the same

[11] From *Journal Citation Reports* 2008.

> procedures, the same standards, and even the same people (editors and referees) as conventional journals (Suber, 2006b, np).

He adds that journals can use the traditional forms of peer review or they can use new forms that are compatible with the new publishing models (Suber, 2006b).

An idea applied by some journals published by Berkeley Electronic Press requires authors submitting their work to agree to review a number of papers in exchange for waiving the charges for submitting their work (Newmark, 2003).

**2.3.3 Indexing**

Scholars who are willing to publish their work in open access journals face the challenge of visibility. There is a concern that the work published online may not be found by readers. Björk (2004) outlined two justifications for indexing services. First, indexing attracts readers who may not be aware of the existence of the journal. Second, the fact that a journal is indexed encourages readers to submit their work to it. A weakness of open access journals is that they are less likely to be indexed by commercial indexing services, and editors of young and experimental journals have a hard time convincing the commercial indexing services to include their journals in those services, perhaps because many open access journals are still in the developing stages (Björk, 2004).

This does not mean that open access journals are not indexed. Goodman (2004) claims that many open access journals are indexed in the same indexing sources as conventional publications. Willinsky and Wolfson (2001) support Goodman's claim but they argue that indexing is not an easy task and not all articles can be indexed. For example, they state that the Institute of Scientific Information (ISI) reviews about 2000 new journal titles annually but only 10 to12 percent of the journals reviewed are selected for inclusion in their indexing service. The price of a subscription to indexing services such as Web of Science can be up to $100,000 annually, and, according to Willinsky and Wolfson, that is a good reason to look for other alternatives.

The high cost of third-party indexing could be a reason to turn to search engines and other indexing tools for a workable alternative for open access content. Goodman (2004) states

that a search engine such as Google is a common tool used to find open access journals and scientific articles, but search engines are not enough. Specialized sources such as CiteSeer[12] or Citebase[13] have proved to be helpful in locating articles. Research indexes such as Citebase, NEC's ResearchIndex, or CERN's Document Server not only help in locating useful resources but they can also be used to measure the impact of cited work (Hitchcock et al., 2002). A more recent example is Google Scholar which helps in the search for scholarly literature. According to Sadeh (2006), although Google is relatively easy to use and the results are arranged based on relevance, users need to keep a watchful eye on the quality of the results. Noruzi (2005) has noted that Google Scholar "provides a new method of locating potentially relevant articles on a given subject by identifying subsequent articles that cite a previously published article" (Noruzi, 2005, p.170).

Goodman (2004) suggests that the key factor in determining whether resources can be located is consistent metadata. The Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) or digital object identifier (DOI) and CrossRef can be used to facilitate discovery of online content (Crawford, 2003). Crawford has said that the DOIs could provide an effective means to identify and locate digital information, as compared to URLs which may become obsolete when the online entity changes. The existence of research that is abstracted and indexed by secondary information services based on metadata makes the use of hyper-linking possible (for example, PubMed's LinkOut capability) and facilitates fast discovery of content hosted by many publishers.

**2.3.4 Impact Factor**

Swan and Brown (2004) address concerns about the impact of open access publications in a study which shows that over 40% of open access authors believe that publishing their work in open access journals may limit its impact. By comparison, 74% of non-open access authors share the same concern about publishing in open access journals. The relative impact of publication in open access journals and in non-open access journals has been the subject of much interest. Earlier research appeared to show a citation advantage to open access publication, but the results of later research have been less dramatic. A bibliography on 'The effect of open

[12] http://citeseer.ist.psu.edu/
[13] http://www.citebase.org/

access and downloads ('hits') on citation impact', maintained by Steve Hitchcock of the Open Citation Project, provides a list of the research on this question (Hitchcock, 2009).

One of the first such studies, by Lawrence (2001), states that restricting access to journals which are not available through open access decreases the readership and citation compared to open access journals. He reports that in computer science the citation impact of open access articles is 336% higher than the impact of non-open access articles. Kurtz et al. (2004) have reported similar effects in astrophysics, and Odlyzko (2002) in mathematics. Both studies show that articles in open access journals have higher impact than articles published in traditional journals.

Other studies have also shown that making articles free via the Web increases their readership and citation. A study by the Kaufman-Wills Group (2005) found that articles published in full open access journals had more chance of being high impact than did articles published in traditional journals. Harnad et al. claimed that the ".. research access/impact problem arises because journal articles are not accessible to all of their would-be users; hence, they are losing potential research impact." (Harnad et al., 2004, p. 310) They also found that open access articles have significantly higher citation impact than non-open access articles. In addition, it has been shown that open access articles in the same journal/year have more citations than non-open access articles and open access articles are more cited (Hajjem, Harnad, & Gingras, 2005).

However, more recent studies have not confirmed the citation advantage of open access publications. Davis et al. (2008) concluded that there was no evidence to suggest a citation advantage for open access articles in the first year after publication. Gaule and Maystre (2008) conducted a study to examine the belief that free availability of scientific articles increases the number of citations, based on a sample of 4388 biology papers published between May 2004 and March 2006. They found that there was no significant effect of open access to suggest citation advantage.

Some studies had mixed results, suggesting that there is some citation advantage in some cases. For example, Kousha and Abdoli (2009) found that Food and Agriculture Organization of the United Nations (FAO) publications which were freely accessible online tended to attract

more citations than non open access publications in the same year. They found that the advantage was for individual articles rather than for whole journals. Also, Gentil-Beccot, Mele, & Brooks (2009) found that free and immediate online distribution of pre-prints creates an immense citation advantage in the field of High- Energy Physics (HEP). But, despite this advantage for disseminated pre-prints they claimed that publishing in open access journals did not present a discernible advantage.

The impact of open access on citations could take a few years to assess. Another and faster measure is called "hit count", the number of times a paper is accessed online. Perneger (2006) examined the hit count in a cohort of papers published in the *British Medical Journal* (BMJ). The average hit count for the papers in the first week after publication was 685 and the average number of citations in the five years after publication was 32.5. He concluded that the papers published in the first week with a high hit count in BMJ have been cited more often than papers with a lower hit count. A similar study by Harnad, Carr, and Brody (2001) shows a positive correlation between how often a paper is cited and how often it is downloaded.

**2.3.5 Archiving**

There are a number of different archiving options available for open access resources, including self-archiving on personal Webpages, in domain repositories and in institutional repositories, in open access journals, and in archives in general, which may be for-profit or non-profit repositories (Lynch, 2003; Björk, 2004; Lynch and Lippincott, 2005; Suber, 2006a; Willinsky, 2006). There is no agreed-upon 'best' method for archiving for open access.

In the traditional system, publishers are responsible for preserving what they publish. Goodman (2004) states that the preservation problem is not unique to open access and he argues that national libraries should have the primary responsibility in archiving open access resources. The problem is that there is no agreement on archiving responsibility or methods. Therefore, different archiving formats may result in the loss of valuable materials. In other words, no one is responsible for preserving scholarly information on the Web. In addition, archiving scholarly research in different formats may result in less use by readers (Pinfield and James, 2003; Rowland et al., 2004). Reich and Rosenthal (2001) present three reasons for resolving the current archiving issue. First, they point out that future generations need access to the current

research. Second, libraries need an alternative method to preserve knowledge from loss. Third, publishers need assurance that their journals' editorial values and brands will be available for future use.

One solution to the archiving issue is to use software for digital archives, and whatever the software (e.g. open source such as DSpace) used for operating institutional archives it needs to be compatible with the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) (Ayris, 2005; Brodie, 2005). Another solution is presented in the LOCKSS (Lots Of Copies Keep Stuff Safe) program, which was designed to preserve access to journals and other archival information published on the Web. This tool allows libraries to preserve the material to which they subscribe. By preserving these materials they assure their future use even if the publisher stops maintaining these materials. This method may help in preserving materials published on the Web (Reich and Rosenthal, 2001; Reich and Rosenthal, 2004; Maniatis, Roussopoulos, Giuli, Rosenthal, & Baker, 2005).

One of the major projects for journal archiving is Journal Storage (JSTOR). JSTOR was founded in 1995 and funded by the Andrew W. Mellon Foundation (Schonfeld, 2003). The mission of JSTOR is to preserve scholarly work (Gauger and Kacena, 2006). JSTOR content is accessible by libraries, universities and publishers through licensing agreements. One of the goals of JSTOR is to broaden access, and in addition to access via licensing agreements, it also offers a service whereby individual researchers can purchase single articles direct from publishers who opt-in to this process. JSTOR also offers free or reduced price access to not-for-profit institutions through programs in Africa and developing countries. Gauger and Kacena have reported that "JSTOR has been successful in providing archival journal support for academic libraries….In all environments, JSTOR provides the ability to deliver major serial resources to student or faculty desktops" (Gauger and Kacena, 2006, p. 44).

The archiving of open access resources is a complex issue. However, the problem of archiving could be minimized by agreeing on one archiving method. The use of OAI-PMH could also reduce archiving complications (Björk, 2004). Suber (2006b) argues that open access archives are economically sustainable because they are not expensive. He adds that the use of open-source software to build and maintain open access repositories is an easy task. An author needs a few minutes to deposit his research to an archive, it costs little to maintain by a

technician, and it does not require much storage space. However, there must be infrastructure and assumed responsibility to ensure that the material is preserved and migrated to new hardware and software as necessary.

In general, the availability of archives needs to be accompanied by the willingness of authors to deposit their work in them. However, in some cases authors do not need to deposit their work themselves. For example, Nature Publishing Group announced in 2008 that they will archive on behalf of authors. They are initially offering this service to authors in *Nature* and related journals, and state that:

> For eligible authors who opt-in during the submission process, NPG will deposit the accepted version of the author's manuscript on acceptance, setting a public release date of 6-months post-publication. There will be no charge to authors or funders for the service." (Baynes, 2008, np)

There have been studies (Swan and Brown, 2005; Carr et al., 2006; Sale, 2006) that show some significant change if authors are mandated to deposit their work to institutional repositories. For example, Carr and others (2006) reported that the deposit rates in institutional repositories remains at 15% if not mandated but this number increases to 100% open access if mandated.

Of course, self-archiving by authors does not result in complete coverage of a journal's articles, and it usually applies only to pre-print and/or post-print versions, not the published article. According to Van Orsdel and Born "as the number of repositories and the practice of self-archiving have grown, large publishers have begun to restrict authors' rights to post final manuscripts on the web; more require embargoes if they allow it at all." (Van Orsdel and Born, 2009, np)

**2.3.6 Stability**

Although the open access models may succeed or fail, current evidence points to their success as publishing models. Siegel, in communication with Lock (2004) predicts that 95% of all articles will be available freely through searchable databases within a decade and that open-access journals will eventually replace their traditional print counterparts. The number of open

access journals is increasing which means more authors are publishing in them. The Directory of Open Access Journals (DOAJ)[14] had about 4358 open access journals as of September 2009.

A study by Swan and Brown (2004) showed that about two thirds of non-open access authors were familiar with open access journals. In addition, all open access authors in their study were familiar with open access, with about 20% who had been aware of open access journals for more than 3 years. *PLoS Biology*, with an impact factor of 12.7 in 2008 based on JCR, is attracting more authors to publish in open access journals and with the growing numbers of authors, the stability of the new publishing system will increase (Patterson, 2007). There are many open access journals that play the same role and *PLoS Biology* is only one example.

Ginsparg (in Lock, 2004) pointed out that "most of the technical pieces are already in place, but the sociological obstacles, as usual, are the most difficult to overcome." (Lock, 2004, p. 123).

## 2.4 Major Participants in the Scholarly Publishing Process

Commercial publishers, scholarly society publishers, and the academic presses are the three main types of organization that publish scientific content (Houghton and Vickery, 2005). Other groups involved in or with the publishing industry are libraries, readers, authors, editors and editorial boards, academic institutions, funding agencies, and governments (Kling and McKim, 1999; Prosser, 2004; Brodie, 2005; Suber, 2006b). Each of these groups is involved to some degree in the open access movement. For example:

- Libraries are involved because of the need to provide access to a wide range of journals to their users. Traditional libraries play a role in scholarly publishing (e.g. preserving and disseminating knowledge). In addition, most libraries have been forced to cancel journal subscriptions due to journal price increases (McCabe, 1998; Schlimgen and Kronenfeld, 2004; Van Orsdel and Born, 2008; 2009).

- Readers are affected by limitations on how much information they can access, and the cost to them to access it (Reich and Rosenthal, 2001).

[14] http://www.doaj.org/

- Academic institutions play a role in scholarly publishing by providing funding for journal purchases, through institutional repositories, as publishers and as the employers of authors (Westrienen and Lynch, 2005). For example, Nottingham University in the United Kingdom has established a fund of 20,000 pounds from indirect grants to help authors pay publication charges (Ayris, 2007).

- Funding agencies can pay fees for open access journals or require authors to publish their articles in an open access journal (Suber, 2009). Examples of funding agencies who pay open access journal fees or require authors to publish their articles in an open access journal are the Wellcome Trust, the Canadian Institutes of Health Research, the Economic and Social Research Council, etc. (SHERPA/JULIET service[15]).

- Governments are involved through setting policies and passing bills that shape open access. For example, Prosser (2004) noted that the U.K. House of Commons Science and Technology Committee had set an Inquiry into Scientific Publications. He stated that:

> The inquiry was set up to look at ". . . access to journals within the scientific community, with particular reference to price and availability" and to ask ". . . what measures are being taken in government, the publishing industry and academic institutions to ensure that researchers, teachers and students have access to the publications they need in order to carry out their work effectively." (Prosser, 2004, np).

Legislation has been proposed to overturn the NIH mandate for publicly funded authors to publish on open access journals; if passed, this would be an instance of government action against open access (Van Orsdel and Born, 2009).

In this study the attitudes and the roles of publishers, editors, and editorial boards, and authors are most relevant, and they are discussed in more detail in Sections 2.4.1 to 2.4.4, 2.5, 2.6 and 2.7.

[15] (http://www.sherpa.ac.uk/juliet/) access date September 2009.

### 2.4.1 Commercial Publishers' Background and Role

In the seventeenth century scholarly communication changed significantly through the introduction of the first scientific journal. The new medium attracted many authors and readers and as a result, the number of journals increased yearly. Most of those new journals were published by non-profit organizations. However, after World War II many commercial publishers began entering the business of publishing, with the goal of making profits from scholarly communication. What attracted most commercial publishers was the substantial increase in government funding for research, which occurred in the post-WWII era (Wells, 1999; Tenopir and King, 2000; Meadows, 1974). Leeflang defined commercial publishers as follows:

> Commercial publishers are companies who are usually financially sound, and aim to provide long term continuity. They are owned by shareholders who put up capital and want some return, and so want to minimise the risk and see a continuation of their returns (Leeflang, 1997, np).

Since WWII, the number of publishers has increased dramatically and together they publish about two million scholarly articles a year with eight billion dollars in annual revenues (Lock, 2004). At the same time, there was an increase in the amount of research published and in journal prices (Willinsky, 2006), as discussed in Chapter 1. The role of commercial publishers is to disseminate knowledge. They also play a major role in editing and advertising their products. However, the increase in journal prices makes it difficult for many individuals, educational institutions, and other organizations to get the full share of such knowledge, especially in those in developing countries (Willinsky, 2006).

#### *2.4.1.1 Reaction to Open Access*

With considerable interest and activity in the open access movement on the part of authors, institutions and users of scholarly information, it is impossible for publishers to avoid the issue. Journal publishers can respond to open access models in one of three ways: they can oppose, adopt, or experiment with an open access model.

Many commercial publishers oppose open access models as a replacement for the traditional publishing model. This is particularly true with well-established journal publishers who make large profits out of the current publishing system (Goodman, 2004). Lamb (2004)

notes that the threat to commercial publishers could increase when more information, especially in journal articles, is free on the Web. The more articles that are free, the more commercial publishers are pressured. It will be hard to justify their current prices or any increase in their journal prices if users have alternative sources of the information they need. She outlines some strategies for publishers in general who are cautious about moving to an open access model, which are:

- Publish in electronic form only and use group hosting to reduce cost structure and prices.
- Allow free access to archives after a period of time (e.g. 6 to12 months).
- Provide free access for developing countries.
- Allow authors to deposit articles in archives (for example, institutional archives)
- Allow authors to retain copyright.
- Experiment with hybrid versions of open access.
- Develop new services and benefits for readers.

Despite the large number of commercial publishers who oppose the open access publishing model, some have supported or experimented with it (Harnad, 2007; Albert, 2006). For example, Blackwell Publishing supports open access by:

- Allowing authors to self-archive their final version of their article in a personal website or an institutional website.
- Allowing authors to post their article freely in the Web when they pay the publication fee.
- Providing free back files for several journals after a set time period.
- Providing free or low cost access to libraries in developing countries (Wiley, 2009).

Recently Elsevier began to allow self-archiving for almost all of its journal titles. An author may post a copy of the final paper on a personal website or on an institutional website (Peek, 2007). Springer introduced a mechanism called Open Choice which allows the author to make an article available online for free after it has been accepted for publication. To do this, the author needs to pay an article processing charge. Taylor & Francis offers its authors the option to publish in an open access model. This iOpenAccess service is for authors publishing in over 300 journals from Taylor & Francis's Chemistry, Mathematics and Physics portfolios who wish to make their papers free to all via the Journal's website for a one-off fee of $3250 (Taylor &

Francis, 2008). John Wiley & Sons, Inc., offers a service in which authors can pay fees to make their paper available for free via Wiley InterScience, Wiley's online publishing platform, as well as the author's funding agency's preferred archive if applicable (Wiley, 2009).

The support from commercial publishers for the open access publishing models has been increasing in recent years. They experiment with an open access model; however, they are not completely in favor of the open access models as compared to traditional publishing (Albert, 2006).

### 2.4.2 Scholarly Societies' Background and Role

Scholarly societies play a major role in scholarship and scholarly communication. One of the earliest examples, the Royal Society, was founded in 1660 in London specifically for the discussion of scientific topics. These societies play a crucial role in the promotion and communication of knowledge. They were founded and operated by scholars and cover almost all fields of scholarship. (Carpenter, Joseph, & Waltham, 2004; Academic Council's Special Committee on Scholarly Communication, 2005). They play a crucial role in spreading knowledge through their publications. They also play a role in knowledge dissemination by organizing conferences and meetings (Drake, 2006). They are typically non-profit organizations which have two objectives: to promote and develop a field of knowledge by publishing scholarly articles and to support valuable activities to serve their members (Pitman, 2004). It should be noted that a number of scholarly societies publish their journals themselves and sometimes through a contract with commercial publishers (Sage, 2008).

#### *2.4.2.1 Reaction to Open Access*

There are three scenarios for scholarly societies to consider with regard to an open access model (Velterop, 2005):

1. Do nothing and continue to publish in the traditional model.
2. Switch to full open access immediately.
3. Switch to full open access gradually and give the authors the choice.

Velterop states that the highest risk for societies is to stick to the current system and do nothing and the lowest risk is to adopt an open access model gradually. He believes that

switching immediately to full open access caries some risk but it is not as high as continuing to publish exclusively with the traditional subscription model, although the risk level is not represented in any numeric way in his discussion. The worst-case scenario, according to the Royal Society, is that funding agencies could force rapid change in practice, which will result in a move to a new journal publishing model that cannot be sustained in the long term, at the same time forcing the traditional system to fold (Robinson, 2006).

Kling and McKim (1999) introduced two scenarios that journal publishers and scholarly societies fear. The first scenario is the Eroding Subscription Scenario. The authors who self-publish in this scenario play a crucial part by inspiring others to publish in self-archives. Kling and McKim feel that this scenario is unlikely because authors value high quality journals, many journals come as part of a society membership, and many authors prefer not to search the web looking for articles. In the second scenario, which they think is more plausible, aggregators might collect and link to drafts of articles that have been accepted for publication. Google Scholar is an example of an aggregator, which collects a number of articles and presents them in one place.

However, converting to an open access model is not an easy task. There are key factors such as journal status and reputation, current financial status, and publicity (Velterop, 2005). These factors may speed up or delay the transition. For example, a journal such as *Nature* is an example of a journal that may take a longer time to convert to an open access model than a less important journal because the journal is well known and the journal profit is high.

There are many reasons in general which may encourage scholarly societies, like other publishers, to move to an open access publishing model. First, the current publishing model is in crisis. Second, there is an increased demand for an open access model. Third, core journal titles are growing in each field and there is no single library that can subscribe to all core journals. Fourth, authors are increasingly posting their articles in self-archives or institutional websites (Velterop, 2005; Willinsky, 2006). Johnson (2004) states that the discussion should move from *Why open access*? to *How do we best implement open access*? But, he argues that the move should start from knowledge funding agencies and at institutions of higher education that may inspire others to follow.

Harnad (2003) suggests that societies are the natural candidates to take over journal titles if commercial publishers decide to stop publishing them. The Walker-Prosser model of scholarly publishing could be used as a guideline in managed transition to an open access model. Walker in this model promotes access funded by authors and Prosser recommends use of a hybrid pay-per-view model. Authors have the option to pay a fee that will make their publications free to all (Walker, 1998; Prosser, 2003; Buchanan, 2005).

The pressure on scholarly societies to move to an open access publishing model will continue because these societies are perceived as knowledge disseminators (Velterop, 2005). Given the current state of journal publishing, the problem may grow if small publishers fold and larger publishers take over their business (Johnson, 2004). They will most likely sell their products as a bundle to libraries and control the publishing market, which in turn will have an impact on scholarly societies. The Academic Council's Special Committee on Scholarly Communication at the University of California stated "For many societies the complexities of publication production have led to partnerships with profit-maximizing commercial publishers, often leading to further price increases. Rapidly rising prices inevitably create barriers to access and reduce the impact of the scholarly work." (The Academic Council's Special Committee on Scholarly Communication at the University of California, 2005, np).

Despite the above arguments, most scholarly societies have not yet been convinced to switch to an open access model. Most scholarly society publishers are cautious about supporting or implementing an open access publishing model because they do not consider the model to be viable financially. Many of these societies rely on the profits they make to organize conferences and meetings and to support other activities for their members. Therefore, implementing an open access model may weaken their ability to serve their members (Sullivan and Horwood, 2005). Authors who join scholarly societies to enjoy free or low priced subscriptions to journals published by the society will have little incentive to continue their membership if the society moves to an open access model.

Some societies appear to be more opposed to open access than are commercial publishers (Goodman, 2004). They oppose the open access models because they cannot operate without subscription revenues, which support other activities such as conferences and scholarships (Guterman, 2004; Harnad, 2006). However, the opposition to the open access publishing model

is not as strong as in the past, particularly with regard to self-archiving policies, perhaps because of a more general acceptance among authors and journal publishers (Cox and Cox, 2006; Albert, 2006; Kim, 2008). Cox and Cox (2008) reported that the proportion of publishers offering optional open access to authors has grown from 9% in 2005 to 30% in 2008. Although, they pointed out that the take-up of the author pays open access option is exceedingly low.

Some societies used to have strict opposition to an open access publishing model. For example, the American Psychological Association (APA) in 1996 had a strict policy which was later relaxed, as discussed in Chapter 1. Similarly, the American Chemical Society formerly had a very restrictive policy which considered any form of self-archiving to be prior publication which would prohibit publication in its journals (American Chemical Society, 1996, cited in Kling and McKim, 2000). Five years later, in 2005, all abstracts of all journals published by the ACS were made openly available on the web. Moreover, all articles are made freely available 12 months after the initial publication.

Some societies experimented with an open access model a decade ago with some success. For example, the Optical Society of America launched the *Optics Express* e-journal in 1997 and considered it to be successful (Johnson, 2004). Recently, the journal celebrated "10 years of Optics Express". The Institute of Physics Publishing launched the open access *New Journal of Physics* in 1998 (Johnson, 2004). Other societies such as the American Psychological Society are experimenting with a partial open access model. In this case, authors have the option to pay a fee of $1500 to make their article free for the public upon acceptance from *Psychological Genomics* or they can wait one year before their articles are free (Sullivan and Horwood, 2005). Some societies publish open access journals which are less scholarly but contain more public interest material (for example, ACM's *Queue*).

A recent survey by Sage of 118 scholarly society publishers demonstrated that these publishers are monitoring the open access movement and its impact on their publications. Of those surveyed, 44% reported that “changing journals sales models” were a major challenge to their institution, and 42% indicated “open access” as a major challenge. Despite this concern, respondents were fairly evenly split among those who considered open access an opportunity, those who considered it a threat, and those who considered it neither. As one respondent noted, “It’s an opportunity to reach new readers. It’s a threat to a sustainable financial model” (Sage,

2008, p. 17). Scholarly societies, with their dual duties for fiscal responsibility to their members, and for disseminating scholarly information, may feel that they have to proceed cautiously in the move toward more open access.

### 2.4.3 University Press Background and Role

The university press is a publisher that is attached to a university, school, or college. The mission of the university press is to publish work of scholarly, intellectual, or creative merit, often for a small audience of specialists (Association of American University Presses website[16]). Goellner defined the university press as "an integral division of its parent university, organizationally attached to the administration rather than to a particular school or faculty, although its function is usually defined as academic" (Goellner, 1978, p. 1695). Hardy and Oppenheim defined the university press as "a publishing house associated with a higher education institution, bearing its imprint, and primarily devoted to publishing scholarly, low-profit works" (Hardy and Oppenheim, 2004, p. 18).

The first English language university press was Oxford University Press founded in 1478, followed by Cambridge University Press in 1521 (Givler, 2002). Since that time university presses have increased in number to serve academic institutions and disseminate knowledge. University presses usually bear the university name in their imprint. Some other examples of well-known presses are Harvard Business School Press, Delft University Press, Edinburgh University Press, University of Chicago Press, Johns Hopkins University Press, and University of Toronto Press.

The role of the university press has always been to advance knowledge and to serve the purpose of its parent organization. They are generally considered to be not-for-profit but that is not always the case (Houghton and Vickery, 2005). While university presses bear some similarity to scholarly society publishers, a number of universities have required the university press to be self-supporting. Therefore, many university presses have become more similar to commercial publishers in their operations (Houghton and Vickery, 2005).

[16] http://aaupnet.org/news/about.html

#### *2.4.3.1 Reaction to Open Access*

A university press, as the name implies, is the publishing arm of an academic institution. While a university press is unlike a commercial publisher because its goal is not primarily to make a profit, it does need to sustain itself financially. The umbrella body for university presses, with about 125 members worldwide, is the Association of American University Presses (AAUP). According to its mission statement, "It promotes the work and influence of university presses, provides cooperative marketing efforts, and helps its presses respond to the changing economy and environment" (AAUP, 2009, np). Thus, the AAUP has a role in helping its members adjust to new economic models. In a statement on open access, the AAUP claims that:

> Universities acknowledged then that for most scholarly works there was insufficient commercial demand to sustain a publishing operation on sales alone, and recognized an obligation to establish and subsidize their own presses in order to serve the mission of universities to share the knowledge they generate (AAUP, 2007, np).

This suggests that university presses see themselves as promoting access while receiving some level of financial support from their institutions.

The largest university press in the world, Oxford University Press (OUP), announced in 2004 that it will experiment with open access with one of its journals, *Nucleic Acids Research* (NAR). NAR is listed by ISI as one of the top journals in biology and biochemistry. The journal will use a combination of the (author pays) model and institutional contributions (Open Access Now[17], 2004). In 2009, Harvard University announced its first open access journal, the *Journal of Legal Analysis*[18].

Harnad (2003) states that learned societies and perhaps university presses are the natural candidates for taking over a journal from a commercial publisher who prefers not to continue publishing specific journals. However there are limits to the feasibility of this approach. The AAUP raises some questions:

[17] http://www.biomedcentral.com/openaccess/news/?issue=19
[18] http://cyber.law.harvard.edu/node/5035

> If commercial publishers should decide to stop publishing research under the constrained circumstances envisioned by advocates of free-to-user open access, what happens to the journals abandoned by these publishers? How many of them could universities afford to subsidize through faculty grants? How much could universities with presses increase the output of their presses to accommodate the monographs now published commercially? The answers to these questions could involve significant new capital investments (AAUP, 2007, np).

The AAUP claims that university presses are unlike commercial and society publishers because open access does not necessarily pose a threat to their mission, which is knowledge dissemination. The AAUP states that "presses can exist in a gift economy for at least the most scholarly of their publishing functions if costs are internally reallocated (from library purchases to faculty grants and press subsidies" (AAUP, 2007, np).

University presses are more innovative and experimental with open repositories, new forms of electronic publication and less stringent copyright and reuse policies with authors when compared to scholarly associations (Lamb, 2004). For example, Cornell University has created an Internet-First University Press, which will offer old and new books under open access (Open Access Now, 2008). Oxford University Press has implemented two different open access models, an (author pays) model under its Oxford Open program[19], and fully open access journals[20].

#### 2.4.4 Publishers' Position on Open Access

The exact cause of journal price increases is not clear. While some have blamed commercial publishers for their role in the journal prices increase (Odlyzko, 1998; Wyly, 1998) others say that the increase in the number of journal titles has resulted in low circulation, which raises the first copy cost and leads to a general rise in subscription costs (Cummings, Witte, Bowen, Lazarus, & Ekman, 1992; King and Tenopir, 2000).

Publishers argue that any study which focuses on journal price increases needs to consider other factors such as the increase in the number of pages per issue (Cummings et al.,

[19] http://www.oxfordjournals.org/news/2005/05/04/index.html
[20] http://www.oxfordjournals.org/news/2004/06/26/index.html

1992). Atkinson (2002) states that the costs of publishing materials in traditional form are increasing. Karen Hunter[21] stated that:

> This crisis is the result of the now decades-long and well-documented imbalance between the growth in R & D expenditures (and in the journal literature, with the number of articles increasing at about 3% per year for nearly a century) and the increase in research library budgets (Hunter, 2004, np).

The three main publishers of scholarly journals (commercial publishers, scholarly societies publishers, and university presses) do not hold a single position to open access, as discussed in the previous sections. Commercial publishers have become the target of many librarians and researchers who believe that the publishers are raising their journal prices to make money (Guterman, 2004). However, Town (2001) argues that learned societies should take the same responsibilities. He says, "Many societies can and should be seen in the same light as commercial publishers; and in some cases they are more restrictive than commercial publishers" (Town, 2001, np).

Derk Haank[22] (cited in Town, 2001) believes that the publishing should be left to publishers. He adds that if there is a role for commercial publishers it is now, because they have the work force, the funds, and the experience in publishing. Town (2001) states that commercial publishers can only make money if they provide what people want. Tagler[23] (2005) states that "in answer to the question of what we do with our profits, we reinvest them in new technology developments and improvements" (p. 96). He affirms that Elsevier has invested in the past four or five years about 80 million dollars annually into technology development. He adds that other alternatives such as open access need to be examined carefully because of a number of issues such as economic factors. He states:

> Basically the fees that are currently being levied by the two major Open Access players at this time–BioMed Central ($550) and Public Library of Science ($1,500) are heavily subsidized. Most estimates–including Tenopir and King and Steven Harnad–put the cost of publishing a research article around $4,000. One of the things that add to the overall cost is the fact

[21] Karen Hunter is Senior Vice President, Strategy for Elsevier.
[22] Derk Haank was the Chairman of Elsevier Science; in 2004 he became Springer's new CEO.
[23] John Tagler is Vice President of Account and Development and Channel Marketing at Elsevier.

> that the average per-article cost also includes the costs for processing all the rejected articles–part of quality control (Tagler, 2005, p. 97).

In summary, publishers may recognize that there is a problem with the current publishing system but they often deny that they are the causes of the crisis. They are aware of the open access movement and are exploring ways that they can contribute to it.

## 2.5 Editors' and Editorial Board Role

A journal editor is a person who manages the peer review process and is responsible for the journal's entire content. Editors can carry many titles such as associate editor, technical editor, the managing editor, the assistant editor, or the editor (Pearson, Mullen, Thomason, & Phillips, 2006). They accept the job as an honor and a service to the publishing community. Editors' services may be voluntary or the job may be undertaken for a fee (Resh, 1998). Editors are often scholars and the journal reputation is a key factor in the editor's decision whether to accept the job (Mulligan, 2005; Harnad, 1996). A candidate for editor will usually have reached a certain level of recognition before being selected, for example by publishing books or articles, reviewing, serving on committees, organizing conferences, and other activities. Personal associations play a major role in appointment of editors, and personal reputation is an important factor in the process of appointing editors (McGinty, 1998).

Haynes (2006) describes the methods used when considering the appointment of editors. The process starts by considering the kind of knowledge the editor needs, comprising two types of knowledge, knowledge of the discipline and knowledge of the marketplace. While the process may stop at this point, other characteristics may also be considered such as the candidate's energy and ambition. However, the three elements, knowledge, skill, and attitude, are not easy to analyze. For example, Haynes claims that it is not easy to say exactly what skill is.

An editor has the obligation to follow the standards of the journal in judging manuscripts. The obligations and responsibilities of the editor-in-chief are crucial because he/she is primarily responsible for the journal quality (Hames, 2007). Their general obligations are:

- to be transparent with regard to their decisions;
- to be fair in the peer-review process;
- to demonstrate editorial independence;

- to resist any influence by pressure groups;
- not to judge the manuscript based on the author's race, gender, religion, citizenship, or political views;
- not to use unethical means to try to increase the journal impact factor;
- not to be involved when they themselves submit manuscripts to their journals (Hames, 2007, p. 158).

In addition to these obligations, editors have responsibilities as follows:

- developing editorial policy;
- ensuring that they have the most appropriate people in the editorial teams:
- making sure the submitted papers are consistent with general ethical guidelines and with their journal ethical guidelines;
- making sure the articles accepted are ethical, accurate, and relevant to their readership;
- managing journal activity such as making sure the manuscripts are published in reasonable time;
- assuming responsibility for the journal quality (Hames, 2007, p. 158).

Editors need to pay attention to all parties involved in the publishing process and that includes authors, readers, funding agencies, publishers, editorial board members, and reviewers (Weeks and Kinser, 1992; Thompson and Rothschild, 1995; Pearson et al., 2006). They are responsible to authors for treating them fairly by providing honest and comprehensive reviewing and a timely passage through the reviewing and publication process. They must ensure that reviewers receive adequate guidance and tools in the reviewing process, and receive manuscripts appropriate to their field. In addition, they should ensure that readers are receiving accurate and valid manuscripts (Hames, 2007).

However, editors may seek to impose their personal thinking on the journal (McGinty, 1998). Leslie (1992) found that editors are open to reviewers' comments but they see themselves as the final assessor of acceptance or rejection. Weller (1991) in her study of 102 editors of medical journals found that editors are the ones who make the key decisions: Which material will be reviewed? Who will review it? And how will the reviewers' comments be interpreted?

Editors are accountable to their publisher's wishes but the main role of selecting what to publish remains in their hands (Fowler and Smith, 1981). The publisher may have final control

by establishing policies and guidelines that the editors have to follow (Breed, 1960; Donohew, 1967).

The editor is responsible for upholding or enhancing the journal's reputation. Popkin (1990) stated, "Part of an editor's job is to make her or his journal interesting, informative, and a source for new and/or important presentations and discussions" (Popkin, 1990, p. 25). He adds that part of the editors' role is the duty to be aware of the experts in many sub-fields.

Editors and editorial boards have expanded their traditional roles in some cases by requesting that a journal publisher change its access policies. In well-publicized cases, a number of editors and editorial board members have resigned due to their publisher's policies on open access. For example[24]:

- Most of the editorial board of the *Journal of Academic Librarianship* resigned in 1998 to protest the high subscription prices of Pergamon-Elsevier. Some of the editors who resigned have created *Portal: Libraries and the Academy* at Johns Hopkins University Press.

- Henry Hagedorn resigned in 2001 as an editor of the *Archives of Insect Biochemistry & Physiology* (Wiley-Liss) in order to form the *OA Journal of Insect Science* (University of Arizona library).

- In 2003, the entire editorial board (more than 40 persons) of *Labor History*, published by Taylor and Francis, resigned. One of the reasons for the resignation was the journal's high subscription prices. The same editors launched *Labor*, an open access journal.

- In 2007, the editor and the editorial board of the journal *K-Theory,* published by Springer, resigned for several reasons including the journal's high subscription prices. The editor and the editorial board launched *Journal of K-Theory*, published by Cambridge University Press.

[24] Suber, 2008 (http://www.earlham.edu/~peters/fos/lists.htm), Journal declarations of independence (http://oad.simmons.edu/oadwiki/Journal_declarations_of_independence) and EUREKA (http://www.eurekajournalwatch.org/index.php/K-Theory), access date September 2009.

As shown by these cases, and other examples discussed in Chapter 1, editors and editorial boards have at least one option if their goal is to make changes in journal access policies: they can threaten to resign if the publisher does not change its policies to open access. Taking the threatened action has in a number of cases resulted in the launch of new open access journals. The editors and editorial boards can set an example by their actions and their actions offer a way to interact with publishers if they refuse to change their policies regarding open access. However this is an extreme course and other options exist for the editor and editorial boards to exert their influence. For example, Stanford University Library has advised editors of "*Things You Can Do to Make a Difference*[25]" as follows:

> Consider using your influence by the choices you make about where to publish, and about service as a reviewer or member of an editorial board.
>
> For editors of journals, consider moving your journal to a different publisher. They should support affordable journals by reviewing and editing journal content.
>
> Examine the pricing, copyright, and licensing agreements of journals you contribute to as an author, reviewer, or editor.
>
> Support affordable scholarly journals, such as by volunteering articles and labor in the production, review and editing of journal content (Stanford University Library, 2007, np).

The University of California Library has similar recommendations[26], noting that the faculty serves on the editorial board of about 15% of the top-tier journals and the faculty has enormous influence with publishers. They advised editors to "Boycott unreasonably expensive journals, contribute to journals with reasonable business models, and talk about publishing issues with your society" (UC Berkeley Library, 2008, np).

### 2.5.1 Composition of the Editorial Board

The size of a journal's editorial board differs from one journal to another. In some journals as few as two or three may carry the responsibility of an editorial board, while some journals have tens of people working in their editorial board (Crase, 1992; Giménez-Toledo,

[25] Available at (http://www-sul.stanford.edu/scholarly_com/you.html) access date September 2009.
[26] Available at (http://www.lib.berkeley.edu/scholarlycommunication/wield_your_influence.html) access date September 2009.

Roman-Roman, Perdiguero, & Palencia, 2009). The internationalization of scholarly journal editorial boards is common as many journals consider it important to have widespread geographical representation on their boards (Zsindely, Schubert, & Braun, 1982; Nisonger, 2002)

A number of studies suggest that those who are chosen as editorial board members are respected and well known in their field and in most cases hold a doctoral degree (Fogarty and Liao, 2009; Lindsey ,1976). Bedeian, Van Fleet, & Hyman III state that:

> A cornerstone of the scientific ethos is that editorial board members should be selected based on their scholarly achievements, as demonstrated by publications in peer-reviewed journals and evidence that their work is of value to others in their disciplines. (Bedeian et al., 2009, p. 211).

In some cases the gender composition of editorial boards has been raised as an issue. Skinner, Robinson, Brown, & Cates examined female participation in school psychology journals from 1985 to 1994. They report that in this field, women are a minority on the membership of editorial boards of scholarly journals compared to men (Skinner et. al., 1999). Roberts, Gerrard-Morris, Zanger, Davis, & Robinson (2006) similarly report that women's participation in four school psychology journals is low. They add that women are active in publishing scholarly articles and as professionals in their field but only those who are senior and have demonstrated high achievements are appointed to positions as editors. Teghtsoonian (1974) reports that the ratio of male to female editors of psychology journals between 1970 and 1972 was biased to favour males, rather than based on the individual's publication rate or quality of the published work.

There is evidence that this bias still exists. Addis and Villa (2003) compare the presence of male and female economists on the editorial boards of 36 Italian economics journals published since 1970. They conclude that the presence of women in top academic jobs is not matched by their presence on the editorial boards of economics journals. They add that women work primarily in the lower positions on journal editorial boards and in fact, 11 of the 36 journals have no women at all on their boards.

## 2.6 Editors and the Theory of Gatekeeping

Kurt Lewin is credited with being the first to use the term 'gatekeeping', in 1947 papers in which he discusses how 'widespread social change' might be achieved (Lewin, 1947a, 1947b). He used the example of changing the food habits of a population, and speculated whether, since it would be difficult to approach each individual to change their food habits, it might be "sufficient and perhaps even more effective to concentrate on a strategic part of the population?" (Lewin, 1947b, p. 143). Though he did not provide a formal definition, he identified the elements which make up modern gatekeeping theory: the channels, by which (in his example) food flowed from the garden or market to the table, the gatekeepers, or individuals in what Lewin called "key positions" (p. 143) who make the decision as to what is "in" or "out", that is, what flows through the channel; and the importance of understanding the socio-political forces and social perceptions which influence the decisions of the gatekeepers. According to Lewin:

> The relation between social channels, social perceptions, and decision is methodologically and practically of considerable significance. The theory of channels and gate keepers helps to define more precisely how certain "objective" sociological problems of locomotion of good and persons intersect with "subjective" psychological and cultural problems. It points to sociologically characterized places, likes gates in social channels, where attitudes count most for certain social processes and where individual or group decisions have a particularly great social affect." (Lewin, 1947b, pp. 146-147).

This emphasis on the role of specific individuals in a communication channel and their perception of and interaction with their environment is at the heart of the theory of gatekeeping.

While Lewin used the example of changing the eating habits of a population to discuss the role of gatekeepers, it was the larger issue of social change which was of interest to him, and he provided several examples of situations in which what happens at the gate region controls movement through the channel, including "the traveling of a news item through certain communication channels in a group" (Lewin, 1947b, p. 145). However, it was White (1950) who first applied the gatekeeping theory to journalism. He studied the gatekeeping activities of editors in newspapers, and concluded that editors were highly subjective in their decisions whether to publish a story or not. Snider (1967) did a similar study and came to the conclusion that editors' selections of stories were based on personal likes and dislikes. Cassidy (2006) used

the theory in a study which examined how print and online journalists for daily newspapers were influenced by gatekeeping forces. He found that routine, or professional norms were more influential than individual forces or personal characteristics, in the way journalists perceived their role. The theory of gatekeeping was used in a number of studies primarily relating to the flow of information in a newspaper (White, 1964; Berkowitz, 1990; Cassidy, 2006, 2008).

In Lewin's seminal study on gatekeeping, he talked of the 'forces' operating at the gates and on the gatekeeper in his food example, these might be attractiveness, cost, or personal likes and dislikes. Though he does not refer to it explicitly in this context, in other work Lewin (1951) spoke of field theory, in which the "field" is the complex environment in which a phenomenon occurs (Shoemaker and Vos, 2009). According to Shoemaker and Vos, this aspect of gatekeeping theory was lost in the early research on gatekeeping in the media. However, recent challenges to US journalism in the context of reporting of the US invasion of Iraq and the Downing Street memo led to a deeper analysis of gatekeeping in the 21st century, and an attempt to unify Lewin's work on field theory with the study of gatekeeping by the media (Shoemaker and Vos, 2009). Shoemaker (1991) and Shoemaker and Vos (2009) suggest five levels of analysis which may be applied to the gatekeeping environment in which communication workers operate:

> The individual communication workers (for example, their political attitudes), the routines or practices of communication work (such as deadlines or the inverted pyramid), the organizational level (looking at variables such as media ownership patterns), the social institutional level of analysis (including influence from government, advertising, and interest groups), and the social system level (looking at variables such as ideology and culture), (Shoemaker and Vos, 2009, p. 31).

These levels of analysis provide a framework by which gatekeepers, and the forces operating on them, can be examined.

The role of editors of scholarly journals as gatekeepers has also been studied, although to a lesser degree than in the print and broadcast media, and in several studies the role of journal editors as 'gatekeepers' is noted, although often without reference to a full Theory of Gatekeeping (for example, Fowler and Smith, 1981; Leslie, 1992). In his dissertation, McGinty (1998) refers to these editors as "guardians at the gate" and he uses Lewin's Theory of

Gatekeeping to inform his study. In this study, the gatekeepers are the editors and the editorial board who decide what articles will be published. Naile (2006) also draws on Lewin's Theory of Gatekeeping in an examination of how scientific information finds its way into livestock publications. These studies looked at the traditional roles of editors as gatekeepers as they managed the article review and selection process; however, Dow (2000), in a study entitled "Editorial Gatekeepers Confronted by the Electronic Journal" drew on Lewin's theory to examine the attitudes of editorial gatekeepers toward a transition from paper-formatted to electronic journals, in order to determine whether their attitudes might obstruct or assist this transition.

Dow surveyed 129 editors and editorial board members from six disciplines, who were at academic institutions in North America. To measure respondents' attitudes toward paper and electronic formats, a Likert-like scale was used to measure their level of agreement with a series of statements. He found that 59% of respondents favoured the development of electronic journals, although 65% had never used a journal in an electronic format, and only 39% had participated in formal discussions about electronic journals. His overall conclusion was that editorial gatekeepers, although supportive of the creation of electronic journals, were still very enamoured (his word) of the paper format. Many of the respondents in his study saw the electronic journal as supporting informal communication in their discipline, rather than replacing the paper-formatted journal. Dow stresses the importance of determining the attitudes of these editorial gatekeepers to changes in publication mechanisms:

> It would appear important to understand the attitudes that gatekeepers have toward the device that is their mechanism of control because attitudes may precipitate or account for some future action these stakeholders initiate. In this case, it would appear significant to understand editorial gatekeeper attitudes toward the paper format of the journal and toward proposed replacements to that medium in order to better overcome possible objections by gatekeepers to attempts at change. (Dow, 2000, p. 153)

Dow's study was limited to editorial board attitudes toward paper and electronic formats. This study will significantly extend Dow's work; it will examine whether the perception of editors and editorial boards of their role as gatekeepers in controlling what is published in

scholarly journals, has been extended to exert their influence toward making journal articles accessible.

## 2.7 Authors' Role

Authors' publishing preferences are key elements in the future success of the open access models, so it is worth exploring the factors that affect their decision on where to publish. The Association of Learned and Professional Society Publishers (ALPSP) conducted a study (1999) that focused on authors who had contributed to learned journals. The study covered four aspects: what motivated researchers to publish in journals, and how they decided where to publish, as well as their concerns about the current system, and what changes they wanted or expected to see in the future. Questionnaires were sent to about 11,500 contributors to learned journals published in the UK, the USA and elsewhere. The response rate was about 30 percent (Swan and Brown, 1999). The study concluded that authors are aiming at reaching the widest possible audience. In addition, issues such as peer reviewing and impact factor are critical elements in forming the authors' opinion of journals in which to publish.

In 2001 and 2002 ALPSP conducted another study to obtain the views of authors on electronic publishing of learned journals. They received responses from almost 1,250 authors around the world. The authors raised issues such as the availability of back volumes and pricing (Swan and Brown, 2003).

With the ALSP studies establishing that authors make very conscious decisions about where to publish their work, it is important to understand how they perceive open access journals. Therefore, several studies have focused on the authors' perception of open access publishing. Rowlands et al., (2004) conducted a study to examine authors' opinions of the open access models. The focus of the study was on authors' needs from the journal systems at a time of change and uncertainty. About 4,000 senior researchers from 97 countries participated in the survey, which was based on closed questions but with some opportunities for comments by authors at the end of the questionnaire. One of the critical responses from participants is on their level of awareness of open access. Almost 82 percent of corresponding authors claimed to know nothing or very little about the open access movement. With regard to those who had some knowledge about the open access movement, the attitudes toward open access were generally

positive. The authors want high quality, well indexed, and cutting edge open access journals. The majority agree that free access and well indexed concepts are strongly associated with open access.

Swan and Brown (2004) conducted a study to learn more about authors and open access publishing. The study consisted of two online questionnaires, one for authors who had published in open access journals and one for authors who had not published in open access journals. A total of 150 responses was received from the first group and 160 from the second. Swan and Brown state that most authors who have published in open access journals are concerned with impact, but they consider free access to be a major influence on the decision to publish in open access journals. Unfamiliarity with open access journals is the major reason authors had not published in open access journals. In another study, Swan and Brown (2005) reported that a substantial proportion of authors are unaware of the possibility of providing open access to their work by self-archiving.

Schroter, Tite, and Smith (2005) carried out a study that examined authors' opinions about open access publishing and author charges. There were 28 participants in semi-structured telephone interviews. They concluded that authors' awareness of open access publishing is higher than previously reported. But, some authors continue not to publish in open access journals due to unfamiliarity with them. In some cases, authors may consider that the quality of the journal in which they publish is more important than free access to their articles.

Hoorn and Graaf (2006) presented the results of a study that explores the attitude of authors in the UK and the Netherlands towards open access. Respondents (71%) prefer to keep the copyright themselves while only (2%) prefer to transfer the copyright to a journal publisher. A study of Thomson-Scientific ISI-ranked Library and Information Science (LIS) journals revealed that copyright and open access can coexist. The study concluded that the majority of the ISI-ranked LIS journals (90%) do not prohibit self-archiving defined in any way (Coleman, 2006).

Covey (2009) confirmed that faculty self-archiving practice is often not aligned with publisher policy. She stated that many faculty members are simply not aware of publisher policies and some have little respect or concern for publisher policy. She suggested

disseminating policy information to raise awareness. Similarly, Antelman (2006) reported that publishers' self-archiving policies have no influence on author self- archiving practice.

In summary, authors' awareness of open access is growing (Schroter et al., 2005). The factors that encourage authors to publish in open access are the principle of free access, the speed of publishing, exposure to more readers, and the desire for greater impact. On the other hand, authors are concerned with issues such as the quality of peer review, availability of indexing, the pricing model, and how open access journals are perceived. The overall perception of open access may prevent them from publishing in journals following an open access model, and they fear that the lack of peer review and indexing may result in a negative publishing experience.

It should be noted, of course, that editors and members of editorial boards are also authors, and in fact may be selected for these roles because of their prominence as authors. Therefore their attitudes to open access in their role as authors are very likely to be reflected in their attitudes to open access in their role as editors and editorial board members, and it will be essential to obtain information on both of these roles in this study.

## 2.8 The RoMEO Project

RoMEO (Rights Metadata for Open Archiving) is one of many projects undertaken by Securing a Hybrid Environment for Research Preservation and Access (SHERPA). SHERPA is investigating issues in the future of scholarly communication. Currently, SHERPA is supported by 33 institutions, comprising the British Library and 32 institutions of higher education in the United Kingdom.

The RoMEO project was funded by the Joint Information Systems Committee (JISC) in 2002-2003 at the University of Loughborough to examine the rights issues surrounding the self-archiving of research in the academic community in the UK under the Open Archive Initiative's Protocol for Metadata Harvesting (OAI-PMH). As a result of this work, the RoMEO project established a list of publishers' policies for self-archiving. The publishers' policies are organized in four categories (each assigned a color code), as shown in Table 2.

**Table 2: RoMEO classification of publishers' access policies**

| ROMEO color (category) | Archiving policy |
|---|---|
| Green | Can archive pre-print and post-print |
| Blue | Can archive post-print (i.e. final draft post-refereeing) |
| Yellow | Can archive pre-print (i.e. pre-refereeing) |
| White | Archiving not formally supported |

As noted previously, the pre-print is the version that has not been peer-reviewed and the post-print is the version after it has been peer-reviewed.

On the RoMEO website, a user can use a search function to find the policy of a specific publisher or a browse function to look through the policies of all publishers. In the browse section a user can also go through the publisher's policies by selecting the color code as explained above, (green, blue, yellow, or white). A user can search for a specific journal using journal title or the International Standard Serial Number (ISSN).

## 2.9 Chapter Summary

There are three factors that led to the open access movement: the substantial increase in journal prices, the increase in the number of journal titles, and advances in technology. Open access opened up the opportunity for readers to access articles via the WWW free of charge. However, providing free content is associated with a number of issues, which include pricing models, peer reviewing, indexing and impact factors, archiving, and the stability of this new publishing model for scholarly literature.

The main publishers of scholarly work (commercial, scholarly societies, and academic presses) have been slow to adopt open access, for a number of reasons but primarily financial. Editors and editorial boards have in some cases expanded their role beyond content management to include influencing publishers in changing access policies, which appears to be an extension of their traditional role as gatekeepers of scholarly information. However, their role in the open access movement is not yet clear.

Authors are uncertain about publishing in open access. On the one hand, publishing in open access may have greater research impact (though there are contradictory findings on this issue), attract more readers, and provide free access and speed of publishing. On the other hand, publishing in open access brings issues in peer review, indexing, pricing model, and perceptions of quality. The majority of authors are still publishing in the traditional publishing system.

# CHAPTER 3: METHODOLOGY

## 3.1 Problem Statement

Editors and editorial boards play a role as gatekeepers to facilitate the dissemination of knowledge through scholarly journals. However, as previously discussed, the traditional publishing system is in crisis as a result of substantial increases in journal prices and in the number of journal titles, and this has resulted in the introduction of new publishing models. The open access models have emerged as possible alternatives to the traditional publishing system.

The role of editors and editorial boards as gatekeepers is affected by the scholarly crisis. Their potential to influence journal access policies could expand their traditional role. Editors and editorial boards have the experience and the knowledge to help publishers move toward an open access model (Watkinson, 2007). They can guide publishers and help them in the transition. An examination of their role and their relationship with their publishers could lead to the development of guidelines for others to follow.

This study aims to examine the role of editors and editorial boards in affecting journal access policies, and in particular, their role in supporting a move toward the green and gold roads to open access.

## 3.2 Overview of Methodology

To answer these research questions, a survey methodology was used. A survey methodology is an appropriate means to collect information from a sample of a larger population, and there are a number of possible collection methods such as mail questionnaires, Web-based questionnaires, structured interviews via telephone, and in-person interviews (Groves et al., 2004). The use of a survey methodology is also consistent with previous research on authors' attitudes toward open access (see for example studies by Park, 2007; Swan and Brown, 2004; Rowlands et al., 2004).

In this study, the population to be studied is editors and editorial board members serving scholarly journals. Since this population cannot be identified independently of the journals themselves, it was decided first to identify a sample of scholarly journals from an authoritative

source, and for each journal identified, to further select a sample of editors and editorial board members from the list of those serving in this role. A total of 770 journals were selected for the study, and 4,031 editors and editorial board members were selected from these journals. A Web-based questionnaire was designed to elicit responses which would answer the research questions in Section 3.1, and it was distributed by UBC's Applied Research and Evaluation Services (ARES) using SurveyMonkey. Excel, the Statistical Package for the Social Sciences (SPSS), and Atlas.ti were used to analyze the data.

## 3.3 Use of a Questionnaire for Data Collection

One of the traditional methods used to collect data is through soliciting answers to questions. The questions can be asked in many ways such as through interviews or questionnaires. A paper questionnaire is a traditional method used by researchers to collect answers based on carefully designed questions. The questions can be open ended to collect as much information as possible or closed to obtain specific information. More recently, advances in technologies have provided researchers with the opportunity to collect data via the Internet. The decision whether to use paper or Web questionnaires is based on the researcher's needs and other factors such as the kind of data to be collected and the subject of the study (Parkinson, 2000; Peterson, 2000; Silberman, 2003; Presser et al., 2004).

Some studies have shown no major differences between paper and Web questionnaires, while some have recommended Web questionnaires and others have favored paper questionnaires. Ekman, Dickman, Klint, Weiderpass, & Litton (2005) conducted a study to investigate the response rates in an epidemiological study using a Web questionnaire, and to examine whether socio-demographic patterns vary between responders to a Web and a paper questionnaire. They surveyed a total of 47,859 subjects who originally received a Web questionnaire, while non-respondents received either paper or email reminders and could reply using a Web questionnaire or a paper questionnaire. After two reminders, a total of 34,546 responses were received (72%). Overall, 19,596 (41%) of the subjects responded to the Web questionnaire and 14,750 (31%) responded to the paper questionnaire. The authors concluded that Web-based questionnaires are a feasible tool for data collection in large population-based epidemiological studies in Sweden.

Truell, Bartlett II, & Alexander (2002) conducted a similar study to compare Web and paper questionnaires. They concluded that there were no significant differences but Web questionnaires are more effective to use with large populations because they cost less and they are faster. Leece et al., (2004) concluded that an Internet-based survey to surgeons resulted in a significantly lower response rate than a traditional mailed survey. They caution researchers not to assume that the ease of use and the widespread availability of Web-based surveys will result in a higher response rate.

However, a Web-based questionnaire has many advantages that make it preferable for use in this study to collect data from editors and editorial boards. These advantages are:

1. Web questionnaires allow real time processing of data (Baer, Saroiu, & Koutsky , 2002). For example, the researcher can transfer the data from the survey website to a database for analysis in a short time.

2. There is a reduction in cost associated with Web questionnaire administration (Baer et al., 2002; Pettit, 2002).

3. It is easier to correct Web questionnaires (for example, typographic or grammatical errors) (Pettit, 2002).

4. The researcher can send a pre-notice to participants and follow up with reminders more quickly and easily (Manfreda, Batagelj, & Vehovar, 2002).

5. Responses to Web-based questionnaires tend to be diverse with respect to gender, socioeconomic status, geographic region, and age (Gosling, Vazire, Srivastava, & John, 2004).

Given these advantages a Web Questionnaire was found to be most suitable for this study.

### 3.3.1 Design of the Questionnaire

Most questions in the Web questionnaire were closed-ended to obtain specific answers but when appropriate a space was provided for additional comments to obtain detailed information. The questions focus solely on answering the major questions in this research, as shown in Table 3. The questionnaire is shown in Appendix E.

**Table 3: Research question and corresponding questions in the questionnaire.**

| Research Question | Questionnaire Items |
|---|---|
| Demographics | 4, 32, 33, 34, 35, 36, 37, 38, 39 |
| Editorial role | 1, 2, 3 |
| What positions have journal publishers (categorized as scholarly societies, commercial publishers, and university presses) adopted on open access as expressed in their current access policies on offering free content to users and allowing authors to self archive? | 5, 6, 11, 16 |
| How aware are editors and editorial boards of their publisher's access policies? | 8, 12, 17, |
| How consistent are the attitudes of editors and editorial boards to open access with those of the publishers they serve? | 7, 15, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31 |
| Have editorial boards acted as a force for change in access policies set by journal publishers (scholarly societies, commercial publishers, or university presses)? | 9, 10, 13, 14, 18, 19, |
| How is the perception and promotion of open access by editors and editorial board members related to (a) their level or responsibility at the journal and (b) their own open access publishing behaviour? | 9, 10, 11, 22, 23, 26, 27, 31, 32 |

The questionnaire consists of 39 questions in five sections. The first section, Service on the Editorial Board, covers the journal and the participant's role on the editorial board. It also contains some questions about the general role of editors and editorial boards regarding journal access policies. The second section, Policies on Free Access to Journal Articles, is about the participant's role in setting the publisher's policies on making all or some of the scholarly articles in this journal free to its readers. The third section, Journal Policies on Self-Archiving, is about the participant's role in setting the journal's policies to allow authors to self-archive their articles. The fourth section, Personal Experience with Journal Policies Regarding Access to Articles and Self-Archiving, is about the participant's own attitudes toward and experience with open access journals and self-archiving in all journals. The fifth section covers the demographic data of the participants.

The questions reflect the major themes of the study, which are the publishers' positions on open access, the awareness of editorial boards of their publisher's access policies, whether the attitudes of editors and editorial boards to open access are consistent with those of the publishers they serve, the editorial boards as a force for change in access policies in journal publishers, and the differences between the members of the editorial boards based on their level of responsibility at the journal.

## 3.4 Sample Selection

This section consists of two sub-sections. Section 3.4.1 discusses the process by which the journals were selected, and Section 3.4.2 covers the study population.

### 3.4.1 Scholarly Journals

The first step in the sample selection process was to identify a sample of scholarly journals, using *Ulrich's Periodicals Directory*. *Ulrich's Periodicals Directory* is:

> A bibliographic database providing detailed, comprehensive, and authoritative information on serials published throughout the world. It covers all subjects, and includes publications that are published regularly or irregularly and are circulated free of charge or by paid subscription (Bowker, 2005, p. 18).

The directory was first published in 1932 and at the present time it is updated daily (Bowker, 2005). Ulrich's is widely used and recognized worldwide. The directory contains information about more than 250,000 periodicals (Grimes and Morris, 2006). It is easy to use, current, organized, and detailed (Bopp and Smith, 2001; Katz, 2002). The directory is traditionally used by libraries to identify refereed and scholarly journals (Bachand and Sawallis, 2003). Therefore, for the purpose of this study, *Ulrich's Periodical Directory* provides an authoritative source to select journals. The directory defines some concepts that were used to identify journals for this study (Ulrich's Web[27], 2005):

> Active: a publication status that indicates that a title is currently being published.
>
> Refereed: otherwise known as peer-reviewed. Refers to the system of critical evaluation of manuscripts/articles by

[27] http://www.ulrichsweb.com/ulrichsweb/Help/Glossary.htm

> professional colleagues or peers. The content of refereed publications is sanctioned, vetted, or otherwise approved by a peer-review or editorial board. The peer-review and evaluation system is utilized to protect, maintain, and raise the quality of scholarly material published in serials. Publications subject to the refereeing process are assumed, then, to contain higher quality content than those that are not.
>
> Serial (magazine – journal): a serial is a publication issued over a period of time, usually on a regular basis (such as weekly or monthly), with enumeration used to identify issues (e.g. volumes, issue numbers, dates). Serials, unlike other multi-volume publications, are intended to be published indefinitely with no pre-determined end date. Monographic series or book series that bear a collective title also qualify as serials (Ulrich's Web, 2005, np).

The advanced search tool was used to select the journals from the entire database. The selection criteria were as follow:

- English language journals, because the language of the study is English.
- The status of journals must be "active" because the research focus is on analyzing policies of current journals that have converted to an open access model or still publish following a subscription-based model.
- The serial type is "academic/scholarly".
- The journal is refereed.
- The journal is covered in *Journal Citation Reports* (JCR).

The serial type "academic/scholarly" and the features "refereed" and "covered in *Journal Citation Reports*" were selected due to the scope of the study, which is scholarly communication. They might be treated as one element. For example, journals in JCR are usually refereed and most are scholarly; therefore, together they make a combination that fits the study focus, which is scholarly journals. Coverage in JCR is selected as a criterion because it assures that quality journals are selected for the study, as reflected in the publisher's description of their use of the impact factor:

> The JCR provides quantitative tools for ranking, evaluating, categorizing, and comparing journals. The impact factor is one of these; it is a measure of the frequency with which the

> "average article" in a journal has been cited in a particular year or period. The annual JCR impact factor is a ratio between citations and recent citable items published. Thus, the impact factor of a journal is calculated by dividing the number of current year citations to the source items published in that journal during the previous two years (Thomson website, 2009, np).

Because JCR journals are selected from among the world's most highly-cited journals, application of this criterion ensures that this study is based on a sample of the journals with the highest impact, and the greatest potential for scholarly communication, and therefore those for which open access would be the most significant. Rowlands et al. (2004) state that:

> ISI's editorial policy is to index only the highest quality journals, those that account for around 19 out of every 20 citations received in a particular discipline. This means that research of a primarily national orientation, as in much of the social sciences, for instance, or research that has low citation impact or is not peer-reviewed is excluded (Rowlands et al., 2004, p. 6).

Despite the fact that limiting journals to JCR means that humanities and social sciences may not be well represented, this is offset by the fact that it ensures that only scholarly journals of recognized quality are included. Moreover, the selection of journals from JCR ensures that the journals that are most widely used and cited are those covered in this study. It is therefore the editorial boards of these journals whose position and actions on open access is most significant.

The second step was to select journals from *Ulrich's Periodicals Directory* that met the study criteria. The total search result based on the criteria above was 6,677 journal titles as of August 2008. Each journal selected must have a Web link and the journal website must have the list of editors and editorial boards available. Every sixth title from the list of 6,677 journals was selected, and if it did not meet the web link/editor list criterion[28], the next following title with a web link and editorial board list was selected. A total of 770 journals was selected for this study. It should be noted that the required sample size for a 95% confidence level, 5%

[28] The expected number of journals based on the study criteria (every sixth title from the list of 6,677) was about 1,112 journals. However, there were many journals that did not list the full editorial board or did not provide the contact address for the editorial board, which resulted in significantly fewer journals than the target number.

confidence interval, and population of 6,677 is 363 journals (Campbell, Thomson, Ramsay, MacLennan, & Grimshaw, 2004).

### 3.4.2 Study Population

For each journal selected, the journal's website was accessed and the names of editors and members of editorial boards were collected. On average, one editor-in-chief was selected from each journal. In addition, about four editorial board members were selected for the study from each journal. The list of members was divided into four quadrants, and the first name in each group was selected. For example, if there were 20 members in the editorial board then they were divided into four groups, with five members in each group, and the first person in each group was selected. Moreover, if the journal divided the editorial board into more than two sections, such as a section for associate editors and a section for members of the editorial board, then the selection was based on the number of sections available. For example, if there were three sections (associate editors, subject editors, and members of the editorial board) then the selection of names was as follows: one editor-in-chief, two associate editors, two subject editors and two members of the editorial board. This ensures diversity in the population of the sample to include individuals with different level of responsibility at the journal.

In some cases where there was a very structured board, more than five names were selected from a single journal (for example, one editor, one managing editor, two subject editors, two from the advisory board, one book review editor). Similarly, in some cases fewer than five participants were selected from a single journal (for example, if the journal only listed one editor and two associate editors).

As the candidates' names and e-mails were collected, an Excel file was created that contained the following information: the first and last name, the e-mail address, the journal title, and the level of involvement at the journal (814 editors and 3,217 members of the editorial board). The file was later used to generate invitations to participate in the study.

This study requires input from human subjects. Therefore, the approval[29] of the Behavioural Research Ethics Board (BREB) at the University of British Columbia was obtained

[29] The application was approved on November 7th, 2008.

after review of the study description and the study protocols and instruments. A copy of the BREB approval certificate is shown in Appendix D.

## 3.5 Pilot Study

Before the final version of the questionnaire was distributed to participants, a pilot study was conducted for it. 'Pilot studies' are "mini versions of a full-scale study (also called 'feasibility' studies), as well as the specific pre-testing of a particular research instrument such as a questionnaire or interview schedule" (Teijlingen, 2001, np). In this case, the purpose of the pilot study was to gather comments and make any necessary changes to the questionnaire before the final version was distributed.

The researcher sent an e-mail to faculty members of the School of Library, Archival and Information Studies (SLAIS) at the University of British Columbia (UBC), to ask for volunteers who serve as an editor or editorial board member for a scholarly journal to participate in the pilot study. Four people agreed to participate in the pilot study. The e-mail had a link to the questionnaire at SurveyMonkey.com and an explanation of the study topic. The researcher received some comments and suggestions and modified the questionnaire as necessary prior to sending the final version to the participants. No significant changes were required. For example, an answer provided for question 31 was changed from (Yes, all the time) to (Yes, every time). Also, it was suggested that the background color of the questionnaire was dark and a brighter color would be more suitable, and that the contact information of the researcher be added at the end of the questionnaire. These minor changes were made to the questionnaire.

## 3.6 Administration of the Questionnaire

SurveyMonkey Software was used to design the questionnaire and collect the data. SurveyMonkey is easy to use, has all the essential tools required for sending, collecting and analyzing the data, and it is cost effective (Marra and Bogue, 2006; Gordon, 2002). A UBC policy recommends researchers not use survey websites that are located in the United States because participants' data is subject to US legislation which does not guarantee their privacy. However, if a researcher decides to use a web survey that is located in the United States then he/she is required to notify the participants of the issue of privacy in the invitation letter (see Appendix A), which may result in a decrease in the number of participants. The advantages of

SurveyMonkey for this study were felt to justify its use, while observing the requirement to notify participants of the privacy issue.

To administer the questionnaire, the Excel file with details of the study sample was provided to the Applied Research and Evaluation Services (ARES) at UBC. Sending the invitation through ARES rather than through SurveyMonkey provided more privacy to the participants[30]. As a final check, a test was sent to 150 participants before the invitation was sent to the full list. This step was performed as a confirmation that there was no problem with the dissemination routine that might be identified after sending the invitation to all subjects. Data collected from those 150 participants is included in the analysis. When this initial distribution proved successful, an e-mail invitation was sent to the rest of the candidates by ARES. In addition to the initial invitation, two reminders were sent. The initial invitation was sent on November 25, 2008. The first reminder was sent on December 2, 2008 and the final reminder was sent on December 16, 2008. A copy of the invitation letter and follow up reminders can be found in Appendices A, B, and C.

The invitations which were sent to candidates for the study included brief information about the study and the link to the survey website (SurveyMonkey). For each individual contacted, the journal for which they serve on the editorial board was identified in a cover letter, and participants were asked to base their answers on their role on that journal; however the journal title was not specified in the questionnaire itself.

Individuals who received the invitation to participate and who consented to be surveyed indicated their consent by following the link to the survey and completing and submitting it. Initial invitations were sent to 4,031 individuals from 770 journals. Some of these emails bounced back due to incorrect or out-of-date email addresses. These were removed, leaving 3879 individuals who were assumed to have received the invitation to participate in the study. A total of 727 responses was received but after removing uncompleted questionnaires and the

[30] If the invitation was sent through SurveyMonkey then it would be easy to determine who responded to the questionnaire. Sending the invitation through ARES means the association between the invitation and the response was not known, ensuring anonymity.

responses which violated the questionnaire rules[31] the number dropped to 704, giving a response rate of 18.2 percent.

## 3.7 Data Analysis

Once the data was collected, it was imported to an Excel file. Three questions were analyzed using Excel: a question about the journal subject area, a question about the country in which the participants work, and a question about the participant's current primary subject area. Excel was simple to use and adequate for the purpose, since Pivot tables were used to analyze the responses to these three questions (Questions 4, 34, and 38), see Appendix E.

Data from the responses to the remaining questions was exported to statistical software, the Statistical Package for the Social Sciences (SPSS)[32]. Various tests were performed to analyze the data such as a One-Way ANOVA and Chi-Square test. In the statistical analysis for this study a p-value of less than .05 is considered significant.

In this study, the mean is used to present the results of Likert scale items. It should be noted that the issue of taking means in an individual Likert scale item has been debated in a number of studies. Because Likert scale items are ordinal, intervals between the scale values cannot be assumed to be equal. However for purposes of data analysis, it is common to treat Likert scale items as interval (Clason and Dormody 1998; Jamieson, 2004; Lubke and Muthen, 2004). The use of the mean to report Likert scale data is a common practice in the research literature and many examples can be found (Jamieson, 2004). For example, Calson and Dormody (1998) reported in their study of the use of Likert-type items in the *Journal of Agricultural Education*, that 51 articles out of 95 articles used descriptive statistics, including means, to analyze individual Likert-type items, while t-tests or comparable tests were used to compare means for paired items in about a third of the cases they examined..

[31] Six subjects who responded "no" to questions that require them to skip as instructed, but who provided responses to intermediate questions. These six questionnaires were eliminated from the analysis. If a respondent only answered the first section from the questionnaire, his/her questionnaire was considered incomplete and was eliminated.

[32] SPSS Statistics GradPack 17.0

Atlas.ti[33] was used to analyze the open-ended questions. The data that was collected through each open-ended question was first analyzed manually to identify a candidate set of codes to be implemented in Atlas.ti. The manual analysis began with reading all the participants' input for each question, followed by additional readings to identify common themes, see Appendix F. Next, the common themes were entered as codes in Atlas.ti using the code manager. Each theme entered in the code manager was characterized by search expressions. For example, the theme "financial" was characterized by search expressions such as "money", "cost", "economic", etc.; the theme "access" was characterized by search expression such as "accessible", "disseminate", "circulation", etc. For the full list of codes and quotations see Appendix F.

In a final review, all results collected from Atlas.ti were reviewed manually and the selection of the themes was discussed with another researcher. The procedure was reviewed, the responses to open-ended questions were examined in the context of the assigned codes, and their use was discussed and justified. The results of this analysis are reported in Chapter 4.

## 3.8 Summary

For the purpose of this research, an online questionnaire was used to collect data. An online questionnaire is an appropriate choice since the population is large (over 6,600) and spread out over a large geographic area. The questionnaire was designed to collect data from editors and members of editorial boards in order to examine their role in journal access policies. *Ulrich's Periodicals Directory* was used to select the scholarly journals for this study. The total number of journals selected for the study was 770. Journals that were selected meet these criteria: academic/scholarly, active, covered in the *Journal Citation Reports* (JCR), refereed, and in the English language. The invitation to participate in the questionnaire was sent to 4,031 individuals through the UBC Applied Research and Evaluation Services (ARES). SurveyMonkey was used to design the questionnaire and collect the data. Excel and the Statistical Package for the Social Sciences (SPSS) were used for data analysis. Atlas.ti software was used to analyze open ended questions.

[33] Atlas.ti version 5.5 was used to analyze the open-ended questions.

# CHAPTER 4: RESULTS

## 4.1 Introduction

This chapter presents the overall results of the questionnaire on the roles of editors and editorial boards on journal access policies. A more detailed analysis and discussion is provided in Chapters 5 and 6.

The results and the analysis begin with a presentation of the demographic data. Skipped questions will be reported as "missing". Individuals who used a comment box where applicable to answer a question are either reported as "other" or added to the relevant answer selection where there was an obvious match. For example, in one case the question asked about the publisher type and a respondent did not select "Commercial Publisher" from the answer list provided, but chose "other" and commented that the publisher type was Elsevier. In this case, the respondent comment was deleted and the number of commercial publishers was increased by one.

## 4.2 Demographic Characteristics

Gender and age distribution of respondents is shown in Table 4. The majority of respondents are male (n=555, 78.8%) compared to 132 female (18.75%). Some people preferred not to answer the question (n=13). More than half of respondents (n=435, 61.8%) are in the range 45-64 years. Sixteen percent of the respondents (n=113) were in the 65 years or older category.

**Table 4: Gender and age of the respondents**

| Major characterization | | Frequency | Percentage |
|---|---|---|---|
| Gender | Male | 555 | 78.8 |
| | Female | 132 | 18.8 |
| | Prefer not to answer | 13 | 1.8 |
| | Missing | 4 | 0.6 |
| | **Total** | **704** | **100.0** |
| Age | Under 24 | 0 | 0.0 |
| | 24-34 | 21 | 3.0 |
| | 35-44 | 126 | 17.9 |
| | 45-54 | 212 | 30.1 |
| | 55-64 | 223 | 31.7 |
| | Over 64 | 113 | 16.0 |
| | Prefer not to answer | 9 | 1.3 |
| | Missing | 0 | 0.0 |
| | **Total** | **704** | **100.0** |

The respondents are from 48 countries. Only the 10 most frequently occurring countries are reported here, see Table 5; these comprise over 70% of the respondents who provided this information. The complete list can be found in Appendix G. One of the criteria used to select journals for this study was publication in English, and not surprisingly, countries such as the USA, UK, and Canada, where English is the main language and where there are large research communities, were the source of the highest numbers of respondents.

**Table 5: Countries of origins of the respondents**

| Country | Frequency | Percentage |
|---|---|---|
| USA | 268 | 38.1 |
| UK | 88 | 12.5 |
| Canada | 50 | 7.1 |
| Germany | 24 | 3.4 |
| Australia | 23 | 3.3 |
| Italy | 17 | 2.4 |
| Japan | 16 | 2.3 |
| Brazil | 8 | 1.1 |
| France | 8 | 1.1 |
| Sweden | 8 | 1.1 |
| Other | 118 | 16.9 |
| Missing | 76 | 10.7 |
| **Total** | **704** | **100.0** |

The majority of respondents hold a doctoral degree (n=644, 91.5%) and are affiliated with an academic institutions (n=583, 82.8%), see Table 6. Most of the respondents are in a tenured position (n=508, 72.2%), see Table 6. Of 537 respondents who reported that they were in a tenure-stream position, 508 or 94.6% were already tenured.

**Table 6: Education level, primary employer, and tenure status**

| Major characterization | | Frequency | Percentage |
|---|---|---|---|
| Education level | PhD degree | 644 | 91.5 |
| | Master's degree | 17 | 2.4 |
| | Bachelor's degree | 12 | 1.7 |
| | Other | 29 | 4.1 |
| | Missing | 2 | 0.3 |
| | **Total** | **704** | **100.0** |
| Primary employer | Academic institution | 583 | 82.8 |
| | Government agency | 53 | 7.5 |
| | Commercial entity | 32 | 4.5 |
| | Other | 36 | 5.1 |
| | Missing | 0 | 0.0 |
| | **Total** | **704** | **100.0** |
| Tenure or pre-tenure | Tenured faculty | 508 | 72.2 |
| | Pre-tenured faculty | 29 | 4.1 |
| | Other | 163 | 23.1 |
| | Missing | 4 | 0.6 |
| | **Total** | **704** | **100.0** |

Most respondents identified their current primary subject area as Mathematics, Science and Technology (n=408, 57.9%) while Arts & Humanities was the area least well represented (n=24, 3.4%), see Table 7.

**Table 7: Current primary subject area**

| Subject area | Frequency | Percentage |
|---|---|---|
| Arts and Humanities | 24 | 3.4 |
| Medicine | 113 | 16.0 |
| Mathematics, Science and Technology | 408 | 58.0 |
| Social Sciences | 141 | 20.0 |
| Other | 18 | 2.6 |
| Missing | 0 | 0.0 |
| **Total** | **704** | **100.0** |

## 4.3 Service on the Editorial Board

Respondents were relatively evenly divided between three categories for their primary role in the journal: the person primarily responsible for the overall content and direction of the journal (for example, with a title like Editor, Editor-in-chief, Managing Editor) (n=219, 31.1%); a person in a secondary role with responsibility for moving specific papers through the review process (for example, with a title like Associate or Assistant Editor) (n=247, 35.1%); and a member of the editorial board (n=198, 28.1%). The fewest responses are in the fourth category, which is a person in a secondary role with responsibility for a specific section of the journal (for example, a Book Review Editor or Section Editor) (n=32, 4.5%), see Table 8. For purposes of more detailed analysis in Chapter 5, this group is combined with the second category of Associate or Assistant Editors, since members of the two groups are similar in serving in a secondary role to the editor-in-chief.

In addition, eight respondents selected "other" to explain their role at the journal. For example, one respondent described his/her job as "technical editor" and another respondent stated that he/she is the "Chairman of the publications committee (dealing with policy matters relating to the Journal and books)".

**Table 8: Respondents role at the journal**

| Role | Frequency | Percentage |
|---|---|---|
| Primary responsibility (e.g. editor in chief) | 219 | 31.1 |
| Secondary responsibility (e.g. associate editor) | 247 | 35.1 |
| Secondary responsibility (e.g. section editor) | 32 | 4.5 |
| Member of the editorial board | 198 | 28.1 |
| Other | 8 | 1.1 |
| Missing | 0 | 0.0 |
| **Total** | **704** | **100.0** |

The largest group of respondents have held their position in the journal for 7 or more years (n=256, 36.4%) followed by 1-3 years (n=233, 33.1%). Only 44 respondents (6.2%) have held their role in the journal for less than a year, see Table 9.

**Table 9: Years working at the journal**

| Number of years | Frequency | percentage |
|---|---|---|
| Less than a year | 44 | 6.2 |
| 1-3 years | 233 | 33.1 |
| 4-6 years | 169 | 24.0 |
| 7 or more years | 256 | 36.4 |
| Prefer not to answer | 2 | 0.3 |
| Missing | 0 | 0.0 |
| **Total** | **704** | **100.0** |

As expected most of the journals are published by commercial publishers (n=423, 60.1%) followed by scholarly society publishers (n=185, 26.3%), see Table 10. In addition, 33 respondents selected "other" to describe the publisher type. For example, two said the publisher is a government research institute, four said a not-for-profit organization, and two said there was no publisher.

**Table 10: Type of publisher**

| Publisher | Frequency | Percentage |
|---|---|---|
| Commercial | 423 | 60.1 |
| Scholarly society | 185 | 26.3 |
| University press | 34 | 4.8 |
| Don't know | 29 | 4.1 |
| Other | 33 | 4.7 |
| Missing | 0 | 0.0 |
| **Total** | **704** | **100.0** |

More than half of the journals (n=405, 57.5%) are in the area of Mathematics, Science and Technology (MST). Twenty-three journals are considered to be in the subject area of Arts and Humanities; see Table 11-1.

**Table 11-1: Journal subject area**

| Journal subject area | Frequency | Percentage |
|---|---|---|
| Arts and Humanities | 23 | 3.3 |
| Medicine | 107 | 15.2 |
| Mathematics, Science and Technology | 405 | 57.5 |
| Social Sciences | 145 | 20.6 |
| Other | 22 | 3.1 |
| Missing | 2 | 0.3 |
| **Total** | **704** | **100.0** |

Because there is a preponderance of journals from the MST area, these percentages were compared with the percentage of journals in comparable categories in *Journal Citation Reports* (JCR), since inclusion in JCR was a criterion used in selecting the journals for the study sample. There are more than 10,250 scholarly and technical journals in JCR, divided between two editions, Science and Social Science. The Science Edition contains data from 8,125 journals in all areas of science, technology and medicine. The Social Science Edition contains data from 2,125 journals in the social sciences. Although JCR does not state that journals from the area of Arts and Humanities are included, it is likely that there are journals from this subject area in the Social Sciences Edition. For example, the Social Sciences Edition contains journals from the subject category History which is also included in the Arts & Humanities Citation Index[34]. The number of journals in each of these two broad subject areas, shown as a percentage of the total number of journals included in JCR is presented in Table 11-2. A similar grouping can be made for the journal categories in this study by combining Medicine with Mathematics, Science and Technology, and Arts and Humanities with Social Sciences, shown in Table 11-3. A comparison of Tables 11-2 and 11-3 shows very similar representation for the two broad subject areas, indicating that the representation of scholarly journals in this study is comparable to that of scholarly journals in JCR and therefore to the representation in the sciences and social sciences in general.

[34] Source (http://toby.library.ubc.ca/resources/infopage.cfm?id=684) access date July 2009

**Table 11-2: Journals subject area percentages in JCR**

| Subject (database) | Count | Percentage |
|---|---|---|
| Science Citation Index Expanded[35] | 8,125 | 79.3 |
| Social Sciences Citation Index[36] | 2,125 | 20.7 |
| **Total** | **10,250** | **100.0** |

**Table 11-3: Journals subject area percentages in this study**

| Subject (database) | Count | Percentage |
|---|---|---|
| Medicine, Mathematics, Science and Technology | 512 | 75.3 |
| Arts and Humanities and Social Sciences | 168 | 24.7 |
| **Total** | **680** | **100.0** |

Most respondents identified the business model of the journal at the time when they joined the editorial board, as a subscription-based journal (n=637, 90.5%), compared to 44 who said it was an open access journal, see Table 12. In addition, four chose "other" and provided comments; three of these stated that the journal has a mixed model (open access and subscription-based) and one said the journal was in a transitional stage.

**Table 12: Journal business model at the time when joining the editorial board**

| Journal model at the time when joining the editorial board | Frequency | Percentage |
|---|---|---|
| An open access journal | 44 | 6.2 |
| A subscription-based journal | 637 | 90.5 |
| Don't know | 16 | 2.3 |
| Other | 4 | 0.6 |
| Missing | 3 | 0.4 |
| **Total** | **704** | **100.0** |

The above numbers did not change much when respondents were asked about the current business model of the journal. However, the number of respondents from open access journals

[35] Source (http://science.thomsonreuters.com/cgi-bin/jrnlst/jlresults.cgi?PC=D) as of October 15, 2009.
[36] Source (http://science.thomsonreuters.com/cgi-bin/jrnlst/jlresults.cgi?PC=J) as of October 15, 2009.

increased from 44 to 60 and the number of respondents from subscription-based journals dropped from 637 to 605, see Table 13.

Eleven respondents selected "other" to describe the current business model of the journal. Ten described the journal model as mixed (open access and subscription-based) and one respondent said the journal was in a transitional stage.

**Table 13: Current business model of the journal**

| Current business model of the journal | Frequency | Percentage |
|---|---|---|
| An open access journal | 60 | 8.5 |
| A subscription-based journal | 605 | 86.0 |
| Don't know | 25 | 3.5 |
| Other | 11 | 1.6 |
| Missing | 3 | 0.4 |
| **Total** | **704** | **100.0** |

More than half of the respondents are somewhat satisfied to very satisfied (n=397, 56.4%) with the current business model of the journal, see Table 14-1. Of the 700 who answered this question, 158 respondents elaborated on their answers. Three themes emerged after content analysis, which are financial issues, quality, and access, see Table 14-2. These themes are discussed in more detail in Chapter 5. For coding associated with these themes see Appendix F.

**Table 14-1: Degree of satisfaction with the current business model of the journal**

| Satisfaction with the current business model of the journal | Frequency | Percentage |
|---|---|---|
| Very dissatisfied | 53 | 7.5 |
| Somewhat dissatisfied | 69 | 9.8 |
| Neither dissatisfied nor satisfied | 181 | 25.7 |
| Somewhat satisfied | 176 | 25.0 |
| Very satisfied | 221 | 31.4 |
| Missing | 4 | 0.6 |
| **Total** | **704** | **100.0** |

**Table 14-2: Respondents' elaboration on their satisfaction with the current business model of the journal**

| Theme | Frequency[37] | Percentage of frequency (213) | Percentage of respondents (158) |
|---|---|---|---|
| Financial | 83 | 39.0 | 52.5 |
| Quality | 24 | 11.3 | 15.2 |
| Access | 79 | 37.1 | 50.0 |
| Other | 27 | 12.7 | 17.1 |
| **Total** | **213** | **100.0** | **134.8** |

The majority of respondents were aware of the journal's policy regarding users' access to journal articles (n=588, 83.5%) when they were invited to join the editorial board. However, they were fairly evenly divided between those who were aware of the journal's policy on self-archiving by authors (n=337, 47.9%) when they were invited to join the editorial board, and those who were not aware of it (n=347, 49.3%), see Table 15.

**Table 15: Level of awareness of the journal policies**

| Awareness of | | Frequency | Percentage |
|---|---|---|---|
| The journal's policy regarding users' access to journal articles. | Yes | 588 | 83.5 |
| | No | 110 | 15.6 |
| | Missing | 6 | 0.9 |
| | **Total** | **704** | **100.0** |
| The journal's policy on self-archiving by authors. | Yes | 337 | 47.9 |
| | No | 347 | 49.3 |
| | Missing | 20 | 2.8 |
| | **Total** | **704** | **100.0** |

Almost two thirds of the respondents felt that as editors and editorial board members they have a responsibility to influence journal policies regarding access to scholarly articles (n=453, 64.3%), see Table 16.

[37] 158 respondents addressed at least one theme, 44 addressed two themes, 2 addressed three themes, and none addressed more than three themes.

**Table 16: Responsibility to influence journal policies regarding access to scholarly articles**

| Responsibility to influence journal policies regarding access to scholarly articles | Frequency | Percentage |
|---|---|---|
| Yes | 453 | 64.3 |
| No | 247 | 35.1 |
| Missing | 4 | 0.6 |
| **Total** | **704** | **100.0** |

More than half of the respondents also felt they have a responsibility to influence journal policies regarding self-archiving (n=394, 56.0%), see Table 17. However, respondents who felt that they have a responsibility to influence journal policies regarding self-archiving were fewer (56.0%) than those who felt that they have a responsibility to influence journal policies regarding access to scholarly articles (64.3%).

**Table 17: Responsibility to influence journal policies regarding self-archiving**

| Responsibility to influence journal policies regarding self-archiving | Frequency | Percentage |
|---|---|---|
| Yes | 394 | 56.0 |
| No | 304 | 43.2 |
| Missing | 6 | 0.8 |
| **Total** | **704** | **100.0** |

More than 70 percent are very unlikely to somewhat unlikely to resign from the editorial board, and more than 87 percent are very unlikely to somewhat unlikely to launch an open access journal in the same subject area, see Table 18. Nine respondents selected "other" to describe possible actions that they might take to influence changes in journal access policies. Of these, four said it depends on the type of the change; three indicated that they are not involved; one said that the policy should not change; and one said "None of these are possibilities".

**Table18: Possible actions to influence changes in journal access policies**

| Action | Very unlikely | Somewhat unlikely | Neither unlikely nor likely | Somewhat likely | Very likely |
|---|---|---|---|---|---|
| Resign from the editorial board (N=683) | 369 (54.0%) | 123 (18.0%) | 115 (16.8%) | 55 (8.1%) | 21 (3.1%) |
| Launch a new open access journal in the same subject (N=679) | 532 (78.4%) | 62 (9.1%) | 48 (7.1%) | 26 (3.8%) | 11 (1.6%) |
| Negotiate the access policies with the publisher (N=681) | 195 (28.6%) | 75 (11.0%) | 107 (15.7%) | 183 (26.9%) | 121 (17.8%) |
| Raise the issue for discussion on the editorial board (N=679) | 51 (7.5%) | 28 (4.1%) | 54 (8.0%) | 225 (33.1%) | 321 (47.3%) |
| Other | 9 | | | | |

## 4.4 Policies on Free Access to Journal Articles

Generally, respondents have a positive opinion about offering free access to journal articles[38]. More than 60 percent of the respondents strongly support to somewhat support offering free access to journal articles. About 15 percent of the respondents have a negative opinion about offering free access to journal articles, see Table 19-1. Moreover, 179 respondents elaborated on their responses. Three themes emerged after performing content analysis. These themes are financial issues, quality, and access, see Table 19-2. These themes are discussed in more detail in Chapter 5. For coding associated with these themes see Appendix F.

[38] It should be noted that the respondents answered the question based on their own experience with the journal they serve and which was selected for this study.

**Table 19-1: Respondents' opinion on offering free access to journal articles**

| Opinion on offering free access to journal articles | Frequency | Percentage |
|---|---|---|
| Strongly oppose | 34 | 4.8 |
| Somewhat oppose | 78 | 11.1 |
| Neither oppose nor support | 162 | 23.0 |
| Somewhat support | 240 | 34.1 |
| Strongly support | 188 | 26.7 |
| Missing | 2 | 0.3 |
| **Total** | **704** | **100.0** |

**Table 19-2: Respondents' elaboration on their opinion on offering free access to journal articles**

| Theme | Frequency[39] | Percentage of responses (205) | Percentage of respondents (179) |
|---|---|---|---|
| Financial | 122 | 59.5 | 68.2 |
| Quality | 18 | 8.8 | 10.1 |
| Access | 43 | 21.0 | 24.0 |
| Other | 22 | 10.7 | 12.3 |
| **Total** | **205** | **100.0** | **114.6** |

Despite their positive opinion about free access, not many respondents reported having requested changes in policy to make access to some or all articles free. The majority (n=582, 82.7%) had not requested changes that allow users to access journal articles for free, see Table 20-1. Moreover, 77 respondents elaborated on their responses, and seven themes emerged after performing content analysis on their comments. These themes are access for specific people, already free, embargo time, financial issues, full access, authors' responsibility for self-archiving, and special access, see Table 20-2. These themes are discussed in more detail in Chapter 5. For coding associated with these themes see Appendix F.

[39] 179 respondents addressed at least one theme, 23 addressed two themes, 1 addressed three themes, and none addressed more than three themes.

**Table 20-1: Respondents' actions to make access to some or all articles free**

| Did you request changes in policy to make access to some or all articles free? | Frequency | Percentage |
|---|---|---|
| Yes | 120 | 17.0 |
| No | 582 | 82.7 |
| Missing | 2 | 0.3 |
| **Total** | **704** | **100.0** |

**Table 20-2: Respondents' elaboration regarding actions to make access to some or all articles free**

| Theme | Frequency[40] | Percentage of responses (81) | Percentage of respondents (77) |
|---|---|---|---|
| Access to specific people | 7 | 8.6 | 9.1 |
| Already free | 4 | 4.9 | 5.2 |
| Embargo time | 8 | 9.9 | 10.4 |
| Financial | 6 | 7.4 | 7.8 |
| Full access | 9 | 11.1 | 11.7 |
| Authors' responsibility | 7 | 8.6 | 9.1 |
| Special access | 24 | 29.6 | 31.2 |
| Other | 16 | 19.8 | 20.8 |
| **Total** | **81** | **100.0** | **105.2** |

Close to half of the respondents stated that their journal offers all or some of its scholarly articles free to readers (n=322, 45.7%) in contrast to one-third of respondents who stated that their journal does not provide free articles (n=236, 33.5%), see Table 21. About twenty-one percent of the respondents (n=146) did not know whether or not the journal provides free access to articles.

**Table 21: Journal policy regarding access to its articles**

| Does the journal offer all or some of its scholarly articles free to readers | Frequency | Percentage |
|---|---|---|
| Yes | 322 | 45.7 |
| No | 236 | 33.5 |
| Don't know | 146 | 20.7 |
| Missing | 0 | 0.0 |
| **Total** | **704** | **100.0** |

[40] 77 respondents addressed at least one theme, 4 addressed two themes, and none addressed more than two themes.

Respondents who stated that the journal offers all or some of its scholarly articles free to readers (n=322) have identified the source of the initiative to make access to some or all articles free as follows: editors (n=71, 22%), members of the editorial board (n=50, 15.5%), the publisher (n=108, 33.5%), other (n=17, 5.3%). Seventy-six respondents did not know the source of the initiative, see Table 22.

**Table 22: The source of the initiative to make access to some or all articles free**

| The initiative came from | Frequency | Percentage |
|---|---|---|
| The editor | 71 | 22.0 |
| Members of the editorial board | 50 | 15.5 |
| The publisher | 108 | 33.5 |
| Don't know | 76 | 23.6 |
| Other | 17 | 5.3 |
| Missing | 0 | 0.0 |
| **Total** | **322** | **100.0** |

More than a third of the respondents who stated that the journal offers all or some of its scholarly articles free to readers acknowledged that the policy was made prior to the date when they joined the editorial board (n=130, 37.0%), see Table 23. On the other hand, the respondents who had a role on the board when the journal policy was changed to make access to some or all articles free stated that they participated in board discussions about offering all or some of the journal's scholarly articles free (n=80, 22.8%); helped to formulate the journal's access policy (n=65, 18.5 %); were on the editorial board when the policy was made but were not consulted about the decision (n=45, 12.8%); or were asked to vote on the journal's access policy (n=24, 6.8%), see Table 23. In other words, of 214 participants who reported that they were on the board when the policy was made, 169 or 79.0% were involved in some way, though almost half of these simply participated in board discussions on the subject.

**Table 23: Respondents' role in changing the journal policy to make access to some or all articles free**

| Type of involvement | Frequency | Percentage of frequency (351) | Percentage of respondents (322) |
|---|---|---|---|
| I helped to formulate the journal's access policy | 65 | 18.5 | 20.2 |
| As a board member, I was asked to vote on the journal's access policy | 24 | 6.8 | 7.5 |
| I participated in board discussions about offering all or some of the journal's scholarly articles free | 80 | 22.8 | 24.8 |
| I was on the editorial board when the policy was made but I was not consulted about the decision | 45 | 12.8 | 14.0 |
| The policy was made prior to the date when I joined the editorial board | 130 | 37.0 | 40.4 |
| Other | 7 | 2.0 | 2.2 |
| **Total** | **351** | **100.0** | **109.0**[41] |

## 4.5 Journal Policies on Self-Archiving

More than half of the respondents (n=411, 58.4%) somewhat support to strongly support allowing authors to self-archive. About 13% of the respondents somewhat oppose to strongly oppose allowing authors to self-archive, see Table 24-1. Moreover, 145 respondents elaborated on their responses and five themes emerged after performing content analysis. These themes are access, archival type, financial issues, quality, and authors' responsibility, see Table 24-2. These themes are discussed in more detail in Chapter 5. For coding associated with these themes see Appendix F.

[41] The number is more than 100% because some respondents selected more than one type of involvement.

**Table 24-1: Respondents' opinion on allowing authors to self-archive**

| Position on allowing authors to self-archive | Frequency | Percentage |
|---|---|---|
| Strongly oppose | 29 | 4.1 |
| Somewhat oppose | 61 | 8.7 |
| Neither oppose nor support | 200 | 28.4 |
| Somewhat support | 164 | 23.3 |
| Strongly support | 247 | 35.1 |
| Missing | 3 | 0.4 |
| **Total** | **704** | **100.0** |

**Table 24-2: Respondents' elaboration on their opinion on allowing authors to self-archive**

| Theme | Frequency[42] | Percentage of responses (172) | Percentage of respondents (145) |
|---|---|---|---|
| Access | 24 | 14.0 | 16.5 |
| Archival type | 19 | 11.0 | 13.1 |
| Financial | 22 | 12.8 | 15.2 |
| Quality | 31 | 18.0 | 21.4 |
| Authors' responsibility | 28 | 16.3 | 19.3 |
| Other | 48 | 27.9 | 33.1 |
| **Total** | **172** | **100.0** | **118.6** |

The vast majority of the respondents have not requested changes in journal policy to allow authors to self-archive (n=658, 93.5%), while about 5 percent of the respondents (n=46) have requested such changes, see Table 25-1. Moreover, 27 respondents elaborated on their responses and three themes emerged after performing content analysis. These themes are archival type, compliance with NIH policies, and existing policy, see Table 25-2. These themes are discussed in more detail in Chapter 5. For coding associated with these themes see Appendix F.

[42] 145 respondents addressed at least one theme, 18 addressed two themes, 4 addressed three themes, and none addressed more than three themes.

**Table 25-1: Respondents' actions to allow authors to self-archive**

| Requested changes in policy to allow authors to self-archive | Frequency | Percentage |
|---|---|---|
| Yes | 46 | 6.5 |
| No | 658 | 93.5 |
| Missing | 0 | 0.0 |
| **Total** | **704** | **100.0** |

**Table 25-2: Respondents' elaboration on actions to allow authors to self-archive**

| Theme | Frequency[43] | Percentage of responses (28) | Percentage of respondents (27) |
|---|---|---|---|
| Archival type | 7 | 25.00 | 25.92 |
| Compliance with NIH policies | 3 | 10.71 | 11.11 |
| Existing policy | 9 | 32.14 | 33.33 |
| Other | 9 | 32.14 | 33.33 |
| **Total** | **28** | **100.0** | **103.70** |

Interestingly, almost half of the respondents (n=330, 46.9%) do not know the journal policy regarding authors' self-archiving. About 11 percent of the respondents (n=78) stated that the journal allows archiving of pre-prints only and about 9 percent of the respondents (n=64) stated that the journal allows archiving of post-prints only, compared to 13.2 percent of the respondents (n=93) who stated that the journal allows both pre-prints and post-prints to be archived. About 19 percent of the respondents (n=135) stated that the journal does not allow either pre-prints or post-prints to be archived, see Table 26.

[43] 27 respondents addressed at least one theme, 1 addressed two themes, and none addressed more than two themes.

**Table 26: Journal policy regarding authors to self-archive**

| Does the journal allow authors to post their articles as | Frequency | Percentage |
|---|---|---|
| Pre-prints only | 78 | 11.1 |
| Post-prints only | 64 | 9.1 |
| Both pre-prints and post-prints | 93 | 13.2 |
| Neither pre-prints nor post-prints | 135 | 19.2 |
| Don't know | 330 | 46.9 |
| Missing | 4 | 0.6 |
| **Total** | **704** | **100.0** |

Respondents identified the source of the initiative to allow authors to self-archive as follows: the editor (n=32, 13.6%); members of the editorial board (n=24, 10.2%); the publisher (69, 29.4%); other (n=8, 3.4%). About 43.4 percent of the respondents (n=102) do not know the source of the initiative, see Table 27.

**Table27: The source of the initiative to allow authors to self-archive**

| The initiative came from | Frequency | Percentage |
|---|---|---|
| The editor | 32 | 13.6 |
| Members of the editorial board | 24 | 10.2 |
| The publisher | 69 | 29.4 |
| Don't know | 102 | 43.4 |
| Other | 8 | 3.4 |
| Missing | 0 | 0.0 |
| **Total** | **235** | **100.0** |

Some respondents stated that the policy was made prior to the date when they joined the editorial board (n=118, 48.2%). Thirty-six respondents helped to formulate the journal's access policy and nine were asked to vote on the journal's access policy. Some respondents (n=40) stated that they participated in board discussions about offering all or some of the journal's scholarly articles free. About 15 percent of the respondents stated that they were on the editorial board when the policy was made but were not consulted about the decision, see Table 28. In other words, of 123 participants who reported that they were on the board when the self-archiving policy was made, 86 or 69.9% were involved in some way, though almost half of these simply participated in board discussions on the subject.

**Table 28: Respondent's role in changing the journal policy to allow authors to self-archive**

| Type of involvement | Frequency | Percentage of responses (245) | Percentage of respondents (235) |
|---|---|---|---|
| I helped to formulate the journal's access policy | 36 | 14.7 | 15.3 |
| As a board member, I was asked to vote on the journal's access policy | 10 | 4.1 | 4.3 |
| I participated in board discussions about offering all or some of the journal's scholarly articles free | 40 | 16.3 | 17.0 |
| I was on the editorial board when the policy was made but I was not consulted about the decision | 37 | 15.1 | 15.7 |
| The policy was made prior to the date when I joined the editorial board | 118 | 48.2 | 50.2 |
| Other | 4 | 1.6 | 1.7 |
| **Total** | **245** | **100.0** | **104.3** |

## 4.6 Personal Experience with Journal Policies

The next section of the questionnaire asked about the respondents' personal experience, that is, their own publishing behaviour and their perceptions of open access. Almost three-quarters of the respondents (n=506, 71.9%) reported that they do not consider the journal business model as a factor in deciding where to publish, while the remaining quarter (n=191, 27.1%) do consider it a factor in their decision, see Table 29-1. Moreover, 178 respondents elaborated on their answers and four themes emerged, which are financial issues, quality, access, and not an author, see Table 29-2. These themes are discussed in further detail in Chapter 5. For coding associated with these themes see Appendix F.

**Table 29-1: The journal business model as a factor in where to publish**

| Is the journal business model a factor in where to publish? | Frequency | Percentage |
|---|---|---|
| Yes | 191 | 27.1 |
| No | 506 | 71.9 |
| Missing | 7 | 1.0 |
| **Total** | **704** | **100.0** |

**Table 29-2: Respondents' elaboration on the journal business model as a factor in where to publish**

| Theme | Frequency[44] | Percentage of responses (205) | Percentage of respondents (178) |
|---|---|---|---|
| Financial | 42 | 20.5 | 23.6 |
| Quality | 82 | 40.0 | 46.1 |
| Access | 43 | 21.0 | 24.2 |
| Not an author | 5 | 2.4 | 2.8 |
| Other | 33 | 16.1 | 18.5 |
| **Total** | **205** | **100.0** | **115.2** |

When respondents were asked if they themselves have published articles in open access journals, 292 (41.5%) said yes and 410 (58.2%) said no, see Table 30.

**Table 30: Respondents published in an open access journal**

| Have you published articles in open access journals? | Frequency | Percentage |
|---|---|---|
| Yes | 292 | 41.5 |
| No | 410 | 58.2 |
| Missing | 2 | 0.3 |
| **Total** | **704** | **100.0** |

More than half of the respondents who have published in open access journals (n=171, 58.6%) have published 1-3 articles in open access journals. Respondents who published more than 10 articles account for about 15 percent. The respondents who have published 7-9 articles

[44] 178 respondents addressed at least one theme, 19 addressed two themes, 2 addressed three themes, and none addressed four or more themes.

account for 4 percent and respondents who published 4-6 articles account for about 21 percent, see Table 31.

**Table 31: Number of published articles in open access journals**

| Number of articles published in open access journals | Frequency | Percentage |
|---|---|---|
| 1-3 | 171 | 58.6 |
| 4-6 | 63 | 21.6 |
| 7-9 | 14 | 4.8 |
| More than 10 articles | 44 | 15.1 |
| **Total** | **292** | **100.0** |

More than a third of the respondents (n=113, 38.7%) who have published articles in open access journals submitted their first article four years ago or more. Forty-five respondents (15.4%) published their first article in an open access journal within the last year, see Table 32.

**Table 32: Time of the first submitted article to an open access journal**

| When did you submit your first article to an open access journal? | Frequency | Percentage |
|---|---|---|
| Within the last year | 45 | 15.4 |
| Two years ago | 81 | 27.7 |
| Three years ago | 53 | 18.2 |
| Four years ago or more | 113 | 38.7 |
| **Total** | **292** | **100.0** |

Most respondents (n=585, 83.1%) do not consider the journal policy regarding self-archiving as a factor in where to publish, while only about 15 percent of the respondents do consider the journal policy as a factor, see Table 33.

**Table 33: The journal policy regarding self-archiving as a factor in where to publish**

| Are the policies of the journal regarding self-archiving a factor in deciding where to publish? | Frequency | Percentage |
|---|---|---|
| Yes | 105 | 14.9 |
| No | 585 | 83.1 |
| Missing | 14 | 2.0 |
| **Total** | **704** | **100.0** |

Respondents who have never self-archived an article count for about 62 percent compared to 38 percent of the respondents who have self-archived, see Table 34. As a publishing behaviour, publishing in open access journals was slightly more frequent (41.5%) than self-archiving (37.9%) for these respondents.

**Table 34: Respondents who have self-archived articles**

| Have you ever self-archived an article? | Frequency | Percentage |
|---|---|---|
| Yes | 267 | 37.9 |
| No | 435 | 61.8 |
| Missing | 2 | 0.3 |
| **Total** | **704** | **100.0** |

More than half of the respondents who self-archived (n=150, 56.2%) have self-archived more than 10 articles. Respondents who self-archived 1-3 articles count for about 14 percent, 4-6 articles count for about 21 percent and 7-9 articles count for about 9 percent, see Table 35.

**Table 35: Number of self-archived articles**

| Number of articles self-archived | Frequency | Percentage |
|---|---|---|
| 1-3 | 37 | 13.8 |
| 4-6 | 55 | 20.6 |
| 7-9 | 25 | 9.4 |
| More than 10 articles | 150 | 56.2 |
| **Total** | **267** | **100.0** |

Most self-archiving respondents (n=165, 61.8%) self-archived their first article four years or more ago compared to respondents (n=40, 15.0%) who self-archived their first article within the last year. Respondents who self-archived their articles two years ago or three years ago count for 11.6 percent each, see Table 36.

**Table 36: Time of first self-archived article**

| When article was first self-archived | Frequency | Percentage |
|---|---|---|
| Within the last year | 40 | 15.0 |
| Two years ago | 31 | 11.6 |
| Three years ago | 31 | 11.6 |
| Four years ago or more | 165 | 61.8 |
| **Total** | **267** | **100.0** |

Almost half of the respondents (n=171, 50.4%) selected a personal website as the place where they usually self-archive. An institutional repository (n=104, 30.7%) was the second choice and a subject repository (n=46, 13.6%) was least popular of the three, see Table 37.

**Table 37: Where respondents usually self-archive**

| Where articles are self-archived | Frequency | Percentage of responses (339) | Percentage of respondents (267) |
|---|---|---|---|
| Personal website | 171 | 50.4 | 64.0 |
| Subject-based repository | 46 | 13.6 | 17.2 |
| Institutional repository | 104 | 30.7 | 39.0 |
| Other | 18 | 5.3 | 6.7 |
| **Total** | **339** | **100.0** | **127.0** |

Over half of the respondents who self-archive stated that they check the journal policy regarding self archiving before they themselves self archive, either every time (n=90, 33.7%) or sometimes (n=66, 24.7%). About 42 percent of the respondents (n=111) do not check the journal policy about self-archiving if they are not aware of it, see Table 38.

**Table 38: Awareness of the journal policy regarding self-archiving**

| Do you check the journal policy about self-archiving if you are not aware of it? | Frequency | Percentage |
|---|---|---|
| Yes, every time | 90 | 33.7 |
| Yes, sometimes | 66 | 24.7 |
| No | 111 | 41.6 |
| **Total** | **267** | **100.0** |

Respondents showed varying degrees of agreement with statements about open access, as shown in Table 39. More than half of the respondents (n=428, 60.8%) somewhat agree to strongly agree that open access articles can carry the same level of peer review as traditional journals. More than a third of the respondents (n=286, 40.6%) somewhat agree to strongly agree that open access articles are as well indexed (for example, through coverage in electronic databases) as articles published in traditional journals.

Close to half of the respondents neither disagree nor agree about whether open access journals can be financially viable (n=304, 43.2%) and about whether long term preservation of open access articles is reliable (n=329, 46.7%). And with regard to impact, almost half of the respondents (n=339, 48.2%) strongly disagree to somewhat disagree that open access articles have greater impact than articles published in traditional journals.

**Table 39: Level of agreement with statements about open access**

| Statement | Strongly disagree | Somewhat disagree | Neither disagree nor agree | Somewhat agree | Strongly agree | Missing | Total |
|---|---|---|---|---|---|---|---|
| Open access journals can be financially viable. | 52 (7.4%) | 125 (17.7%) | 304 (43.2%) | 164 (23.3%) | 47 (6.7%) | 12 (1.7%) | **704 (100%)** |
| Open access articles can carry the same level of peer review as traditional journals | 68 (9.7%) | 105 (14.9%) | 97 (13.8%) | 185 (26.3) | 243 (34.5%) | 6 (0.8%) | **704 (100%)** |
| Open access articles are as well indexed (for example, coverage in electronic databases) as articles published in traditional journals | 60 (8.5%) | 131 (18.6%) | 216 (30.7%) | 159 (22.6%) | 127 (18.0%) | 11 (1.6%) | **704 (100%)** |
| Open access articles have greater impact than articles published in traditional journals. | 166 (23.6%) | 173 (24.6%) | 236 (33.5%) | 77 (10.9%) | 41 (5.8%) | 11 (1.6%) | **704 (100%)** |
| Long term preservation of open access articles is reliable. | 62 (8.8%) | 149 (21.2%) | 329 (46.7%) | 95 (13.5%) | 53 (7.5%) | 16 (2.3%) | **704 (100%)** |

## 4.7 Summary

This chapter presented the results of a Web questionnaire. The initial invitation was sent to 4,031 individuals and the final usable responses numbered 704. The data were analyzed in five major sections: demographic characteristics, service on the editorial board, policies on free access to journal articles, journal policies on self-archiving, and personal experience with open access.

The majority of respondents are males and in the range 45-64 years. Responses were from 48 countries around the world, though most came from the United States, the United

Kingdom, and Canada. The majority of respondents hold a doctoral degree and are affiliated with academic institutions and in a tenured position. Most respondents identified their current primary subject area as Mathematics, Science and Technology, while Arts and Humanities was the area least well represented.

Respondents described their role at the journal as a primary role such as editor in chief (31.1%); a secondary role such as associate or assistant editor (35.1%); a secondary role such as book review editor or section editor (4.5%); or as a member of the editorial board (28.1%). More than a third of respondents have held their position on the journal for 7 or more years (36.4%) followed by 1-3 years (33.1%).

Most of the journals which the respondents serve are published by commercial publishers, followed by scholarly society publishers. More than half of the editors and editorial board members reported on journals which are in the area of Mathematics, Science and Technology, while only 23 respondents reported on journals which are considered to be in the subject area of Arts and Humanities.

Most respondents identified the business model of the journal at the time when they joined the editorial board as a subscription-based journal (n=637) compared to only 44 who said it was an open access journal. Moreover, most respondents identified the current business model of the journal as a subscription-based journal (n=605) compared to 60 who served on open access journals. More than half of the respondents are somewhat satisfied to very satisfied with the current business model of the journal.

The majority of the respondents (83.5%) were aware of the journal's policy regarding users' access to journal articles. In contrast, fewer than 48% of the respondents were aware of the journal's policy on self-archiving by authors.

More than half of the respondents felt that they have a responsibility to influence journal policies regarding self-archiving and policies regarding access to scholarly articles, yet the majority did not report that they were willing to take strong measures to influence changes in journal access policies.

Generally, respondents have a positive opinion about free access to journal articles and somewhat support to strongly support allowing authors to self-archive. However, the vast majority of the respondents had not requested changes in policy to make access to some or all articles free nor did they request changes in journal policy to allow authors to self-archive.

Close to half of the respondents stated that their journal provides free access to journal articles, compared to 33% who stated that the journal allows authors to self-archive. Also, close to half of the respondents indicated that the journal policies, regarding allowing authors to self-archive and to make access to some or all articles free, were made prior to the date when they joined the editorial board. There was no single main source identified for the initiative which led a journal to provide free access to journal articles or to allow authors to self-archive.

In their own publishing behaviour, most respondents (71.9%) do not consider the journal business model as a factor in where to publish. However, more than half of the respondents have never published an article in an open access journal. Similarly, most respondents (83.1%) do not consider the journal policy regarding self-archiving as a factor in where to publish and about 62% of the respondents have never self-archived an article.

In general, most respondents somewhat agree to strongly agree that open access articles can carry the same level of peer review as traditional journals (n=428, 60.8%), and somewhat agree to strongly agree that open access articles are as well indexed (for example, coverage in electronic databases) as articles published in traditional journals (n=286, 40.6%). They neither disagree nor agree that long term preservation of open access articles is reliable (n=329, 46.7%) or whether open access journals can be financially viable (n=304, 43.2%). They somewhat disagree to strongly disagree that open access articles have greater impact than articles published in traditional journals (n=339, 48.2%),

A more detailed analysis of this data is presented in the next chapter. In particular, more analysis is provided relating to the role of editorial boards in journal access policies and in relation to the major questions posed by the study.

# CHAPTER 5: ANALYSIS OF RESULTS

## 5.1 Introduction

This chapter presents an analysis of the data relating to the major themes of the study: the attitudes of journal publishers to open access (as expressed by their approach to, and position on, open access models), editorial boards' awareness of their publishers' access policies, the attitudes of editorial boards to open access (including the relationship of their attitudes to their editorial role and their own publishing behaviour), and editorial boards as a force for change. It should be noted that for the analysis in this chapter, two groups have been combined: assistant/associate editors and those in a secondary role with responsibility for a specific section of the journal (for example, a book review editor or section editor). Data on these two groups was collected separately, and is reported separately in the descriptive data presented in Chapter 4. However the number of participants in the section editor category is small (n=32, 4.5%), and since both associate editors and section editors have a subsidiary responsibility to the editor, it was decided to treat them together for statistical purposes to facilitate data analysis.

## 5.2 Positions of Journal Publishers on Open Access

*What positions have journal publishers (categorized as scholarly societies, commercial publishers, and university presses) adopted on open access as expressed in their current access policies on offering free content to users and allowing authors to self archive?*

Publishers have gradually started to consider open access models although the majority still operate within the traditional publishing system, as discussed in Chapter 2. In this study, it was found that publishers in general were the second most frequent source of the initiative which resulted in making some or all articles in the journal free to readers (n=108, 33.5%), and they were the most frequent source of the initiative which resulted in allowing authors to self-archive (n=69, 29.4%). Editors and editorial boards (n=121, 37.5%) were the most frequent source of the initiative that resulted in making some or all articles in the journal free to readers and they were the second most frequent source of the initiative which resulted in allowing authors to self-archive (n=56, 23.8%).

When considered by publisher type, editorial board members from journals from commercial publishers reported the availability of free articles at a lower level than those from the other two groups, as shown in Table 40. However, a One-Way ANOVA Test shows that there is no statistically significant difference between types of publishers in term of their policy on permitting journals to offer all or some of its articles free to readers.

**Table 40: Journal policy regarding making all or some articles free to readers based on publisher type (Cross-tabulation)**

| Does the journal offer free articles? | | Publisher type | | | **Total** |
|---|---|---|---|---|---|
| | | Commercial publisher | Scholarly society publisher | University press | |
| Yes | Count | 172 | 94 | 18 | **284** |
| | % of all 'yes' responses | 60.6% | 33.1% | 6.3% | **100.0%** |
| | % of all responses within publisher type | 52.4% | 59.9% | 66.7% | **55.5%** |
| No | Count | 156 | 63 | 9 | **228** |
| | % of all 'no' responses | 68.4% | 27.6% | 3.9% | **100.0%** |
| | % of all responses within publisher type | 47.6% | 40.1% | 33.3% | **44.5%** |
| **Total** | **Count** | **328** | **157** | **27** | **512** |
| | **% of all responses** | **64.1%** | **30.7%** | **5.3%** | **100.0%** |
| | **% of all responses within publisher type** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

A cross-tabulation by publisher type was also performed to examine more closely publishers' policies on allowing authors to self-archive, see Table 41. A similar pattern to that for offering free articles is observed: the highest level of permission is shown by university presses, followed next by scholarly publishers, with commercial publishers showing the lowest level of permission. However, a One-Way ANOVA Test shows no statistically significant difference between types of publishers in terms of their policy on allowing authors to self-archive.

**Table 41: Journal policy regarding allowing authors to self-archive based on publisher type (Cross-tabulation)**

| Does the journal allow authors to self-archive? | | Publisher type | | | **Total** |
|---|---|---|---|---|---|
| | | Commercial publisher | Scholarly society publisher | University press | |
| Yes | Count | 137 | 61 | 15 | **213** |
| | % of all 'yes' responses | 64.3% | 28.6% | 7.0% | **100.0%** |
| | % of all responses within publisher type | 58.5% | 69.3% | 71.4% | **62.1%** |
| No | Count | 97 | 27 | 6 | **130** |
| | % of all 'no' responses | 74.6% | 20.8% | 4.6% | **100.0%** |
| | % of all responses within publisher type | 41.5% | 30.7% | 28.6% | **37.9%** |
| **Total** | **Count** | **234** | **88** | **21** | **343** |
| | **% of all responses** | **68.2%** | **25.7%** | **6.1%** | **100.0%** |
| | **% of all responses within publisher type** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Because the number of the respondents who indicated the type of publisher as a university press was small, additional tests were performed to examine if there is a difference between the three types of publishers. A Chi-square Test indicated that there are no significant differences between publishers in term of offering free articles through the journal. Similarly, a Chi-square Test indicated that there are no significant differences between publishers in term of allowing authors to self-archive. Another test was conducted to examine if there is a difference between commercial publishers and scholarly society publishers. The result of a Chi-Square Test indicated that there is no difference between the two types of publishers in term of offering free articles through the journal and in term of allowing authors to self-archive.

It should be noted that 146 respondents (about 21%) do not know the policy of their journal toward making articles free to readers, and over twice as many respondents (330, about 47%) do not know if the journal allows self-archiving (Tables 21 and 26).

With respect to the satisfaction[45] expressed by respondents with the journal model, analyzed by the three different types of publisher, the university presses scored a mean[46] of 3.8 compared to 3.7 for scholarly society publishers and 3.5 for commercial publishers. Respondents' level of satisfaction with the different type of publishers is shown in Table 42. A One-Way ANOVA Test found that the difference in the respondents' satisfaction is not statistically significant and therefore the business model of the journal of the three type of publisher cannot be shown to affect the respondents' satisfaction.

**Table 42: Mean of satisfaction with the business model by type of journal publisher**

| Publisher type | Mean | N | Std. Deviation |
|---|---|---|---|
| Commercial publisher | 3.53 | 423 | 1.235 |
| Scholarly society publisher | 3.71 | 182 | 1.260 |
| University press | 3.76 | 34 | 1.182 |
| **Total** | **3.60** | **639** | **1.240** |

In summary, according to editorial boards' responses in this study, publishers were the second most frequent source of the initiative that resulted in making the journal offer some or all of its articles free and they were the most frequent source of the initiative that resulted in allowing authors to self-archive (Tables 22 and 27).

## 5.3 Editorial Boards' Awareness of Their Publisher's Access Policies

*How aware are editors and editorial boards of their publisher's access policies?*

Editors, associate editors, and members of editorial boards demonstrate some awareness, when they were invited to join the editorial board, about the journal's policy regarding users' access to journal articles and the journal's policy on self-archiving by authors (Table 15).

The awareness of journal policies varies based on the respondents' level of responsibility as expressed in position title at the journal. Members of the editorial boards demonstrate the

[45] Based on a five-point Likert scale where 1= very dissatisfied and 5=very satisfied.
[46] See discussion in Section 3.7 on recording the mean for Likert-type items.

least awareness of policies on users' access to journal articles and editors the highest awareness. The awareness increased from 73.0% for members of the editorial boards to 86.6% for associate editors, to 90.8% for editors, see Table 43. The results of a Chi-square Test indicate that these differences are statistically significant, see Table 44. The fact that a higher level of responsibility seems be accompanied by greater awareness of the journal's policy on open access may indicate a stronger interest in or attention to the journal's policies on the part of editors and associate editors, and/or more direct, detailed or frequent communication with their publishers.

**Table 43: Awareness of users' access to journal articles (Cross-tabulation)**

| Users' access to journal articles | | Level of responsibility at the journal | | | **Total** |
|---|---|---|---|---|---|
| | | Editor | Associate editor | Member of the editorial board | |
| Yes | Count | 198 | 240 | 143 | **581** |
| | % of all 'yes' responses | 34.1% | 41.3% | 24.6% | **100.0%** |
| | % of all responses within the level of responsibility at the journal | 90.8% | 86.6% | 73.0% | **84.1%** |
| No | Count | 20 | 37 | 53 | **110** |
| | % of all 'no' responses | 18.2% | 33.6% | 48.2% | **100.0%** |
| | % of all responses within the level of responsibility at the journal | 9.2% | 13.4% | 27.0% | **15.9%** |
| **Total** | **Count** | **218** | **277** | **196** | **691** |
| | **% of all responses** | **31.5%** | **40.1%** | **28.4%** | **100.0%** |
| | **% of all responses within the level of responsibility at the journal** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

**Table 44: Awareness of users' access to journal articles (Chi-Square Test)**

| Awareness of users' access to journal | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 26.880[a] | 2 | .000 |

A similar pattern is seen with regard to journal policies on allowing authors to self-archive: members of the editorial boards demonstrated the least awareness and editors the highest awareness, increasing from 37.0% for members of the editorial boards to 49.1% for associate editors, to 59.6% for editors, see Table 45. A Chi-square Test shows that this difference is statistically significant, see Table 46. While the pattern is the same, the percentage of respondents in each category who were aware of the self-archiving policy when joining the journal is much lower, particularly for editorial board members, of whom only slightly over one-third were aware of the policy.

**Table 45: Awareness of journal's policy on self-archiving by authors (Cross-tabulation)**

| Journal's policy on self-archiving | | Level of responsibility at the journal | | | **Total** |
|---|---|---|---|---|---|
| | | Editor | Associate editor | Member of the editorial board | |
| Yes | Count | 127 | 134 | 71 | **332** |
| | % of all 'yes' responses | 38.3% | 40.4% | 21.4% | **100.0%** |
| | % of all responses within the level of responsibility at the journal | 59.6% | 49.1% | 37.0% | **49.0%** |
| No | Count | 86 | 139 | 121 | **346** |
| | % of all 'no' responses | 24.9% | 40.2% | 35.0% | **100.0%** |
| | % of all responses within the level of responsibility at the journal | 40.4% | 50.9% | 63.0% | **51.0%** |
| **Total** | **Count** | **213** | **273** | **192** | **678** |
| | **% of all responses** | **31.4%** | **40.3%** | **28.3%** | **100.0%** |
| | **% of all responses within the level of responsibility at the journal** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

**Table 46: Awareness of journal's policy on self-archiving by authors (Chi-Square)**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 20.724[a] | 2 | .000 |

If a respondent does not know the journal's policy on users' access to journal articles then he/she is not likely to know the policy of the journal on self-archiving by authors. However, if a respondent knows the policy on users' access to journal articles then he/she will possibly know the policy on self-archiving by authors, see Table 47. Almost half of the respondents (330 respondents out of 700) did not know the policies of the journal regarding self-archiving and about 146 respondents out of 704 did not know if the journal offers all or some of its scholarly articles free to readers. It should be noted that many publishers do not make public their access policies, although it is reasonable to expect that this information would be available to the editorial board.

**Table 47: Awareness of journal's policies (Cross-tabulation)**

| | | | Self-archiving by authors | | **Total** |
|---|---|---|---|---|---|
| | | | Yes | No | |
| Users' access to journal articles | Yes | Count | 333 | 240 | **573** |
| | | % of Total | 48.9% | 35.2% | **84.1%** |
| | No | Count | 2 | 106 | **108** |
| | | % of Total | .3% | 15.6% | **15.9%** |
| **Total** | | **Count** | **335** | **346** | **681** |
| | | **% of Total** | **49.2%** | **50.8%** | **100.0%** |

In terms of their own publishing behaviour, there is no statistically significant difference between editors, associate editors and members of editorial boards with regard to their answers about whether the business model of the journal is a factor in deciding where to publish, as indicated by a Chi-square Test. More than 70 percent of respondents reported that the business model of the journal is not a factor in deciding where to publish, see Table 48.

**Table 48: Journal model as factor in where to publish and role at the journal (Cross-tabulation)**

| Is the journal model a factor in where to publish? | | Level of responsibility at the journal | | | **Total** |
|---|---|---|---|---|---|
| | | Editor | Associate editor | Member of the editorial board | |
| Yes | Count | 63 | 81 | 43 | **187** |
| | % of all 'yes' responses | 33.7% | 43.3% | 23.0% | **100.0%** |
| | % of all responses within the level of responsibility at the journal | 29.4% | 29.1% | 21.8% | **27.1%** |
| No | Count | 151 | 197 | 154 | **502** |
| | % of all 'no' responses | 30.1% | 39.2% | 30.7% | **100.0%** |
| | % of all responses within the level of responsibility at the journal | 70.6% | 70.9% | 78.2% | **72.9%** |
| **Total** | **Count** | **214** | **278** | **197** | **689** |
| | **% of all responses** | **31.1%** | **40.3%** | **28.6%** | **100.0%** |
| | **% of all responses within the level of responsibility at the journal** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Respondents who elaborated on their answers (n=178) believe that quality and financial issues are far more important than the business model when they consider where to publish. One respondent said:

> My main concern is always the scholarly reputation of the journal, as indicated by impact factors, editorial board, or general regard in my field.

Some respondents expressed their concerns about the financial obligations that they could face if they decided to publish in open access journals. They stated that they cannot afford open access fees and they consider this a crucial factor in deciding where to publish. One respondent stated that "it depends on the publication fees". Another respondent stated "I don't send papers to [a] journal for which the author is expected to pay for publishing".

On the other hand, some respondents believe that the access issue is very important when they consider where to publish. One respondent stated that he/she will not publish in a journal that prohibits self-archiving. Another respondent stated that "I check sherpa/romeo first and advise my students to do so". It should be noted that Sherpa/Romeo lists journal policies, which helps authors when deciding whether they are permitted to self-archive or when they want to check a journal policy.

More than half of the respondents who self-archive do consider the policy of the journal regarding self-archiving as a factor in deciding where to publish, see Table 49. However a Chi-square Test shows that there is no statistically significant difference between editors, associate editors and members of editorial boards with regard to whether they consider the policies of the journal regarding self-archiving as a factor in deciding where to publish. Thus, as for awareness of open access policies, no link was found between individuals' own publishing behaviour and their level of responsibility on their own journal.

**Table 49: The policies of the journal regarding self-archiving as a factor in deciding where to publish and role at the journal (Cross-tabulation)**

| Do you check the journal policy about self-archiving? | | Level of responsibility at the journal | | | **Total** |
|---|---|---|---|---|---|
| | | Editor | Associate editor | Member of the editorial board | |
| Yes, every time | Count | 29 | 41 | 18 | **88** |
| | % of all 'Yes, every time' responses | 33.0% | 46.6% | 20.5% | **100.0%** |
| | % of all responses within the level of responsibility at the journal | 38.7% | 33.9% | 26.5% | **33.3%** |
| Yes, sometimes | Count | 16 | 32 | 18 | **66** |
| | % of all 'Yes, sometimes' responses | 24.2% | 48.5% | 27.3% | **100.0%** |
| | % of all responses within the level of responsibility at the journal | 21.3% | 26.4% | 26.5% | **25.0%** |
| No | Count | 30 | 48 | 32 | **110** |
| | % of all 'no' responses | 27.3% | 43.6% | 29.1% | **100.0%** |
| | % of all responses within the level of responsibility at the journal | 40.0% | 39.7% | 47.1% | **41.7%** |
| **Total** | **Count** | **75** | **121** | **68** | **264** |
| | **% of all responses** | **28.4%** | **45.8%** | **25.8%** | **100.0%** |
| | **% of all responses within the level of responsibility at the journal** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

This behaviour by editorial boards may affect their awareness about such policies. In other words, if editorial boards do not consider the business model of the journal as a factor in where to publish and/or do not consider the policies of the journal regarding self-archiving as a factor in deciding where to publish then there may be little incentive for them to develop awareness of journal policies in this area.

In summary, editorial boards seem to be more familiar with the journal policy on users' access to the journal articles than with self-archiving policies. However, many respondents did

not know the current policies of the journal they serve and it is something that publishers may need to consider seriously. Service on the editorial board did not seem to increase respondents' awareness of self archiving policies. This indicates that the respondents' association with the journal did not influence their knowledge about the journal policies on authors self-archiving.

There was a statistically significant difference between editors, associate editors, and members of the editorial board with regard to their awareness of the journal's policy regarding users' access to journal articles and with regard to their awareness of the journal's policy on self-archiving by authors. On the other hand, there was no statistically significant difference between editors, associate editors, and members of the editorial board on issues related to their own publishing behaviour, that is on considering the journal model or policies of the journal regarding self-archiving as a factor in deciding where to publish.

## 5.4 Attitude of Editorial Boards to Open Access

*How consistent are the attitudes of editors and editorial boards to open access with those of the publishers they serve? How is the perception and promotion of open access by editors and editorial board members related to (a) their level or responsibility at the journal and (b) their own open access publishing behaviour?*

To explore the attitude of editorial boards to open access, the opinions of participants on offering free access to scholarly articles in the journal were analysed in the context of their role on the journal. Editors scored the lowest mean[47] (3.5) followed by associate editors with a mean of (3.7) then members of the editorial board with the highest mean of (3.9), see Table 50. A One-Way ANOVA Test shows that there is a statistically significant difference between editors, associate editors, and members of the editorial board with regard to their opinion, see Table 51. In other words, editors are the least likely to support offering free access to scholarly articles and members of the editorial board are the most likely to support offering free access to scholarly articles.

[47] Based on a five-point scale where 1= strongly oppose and 5=strongly support.

**Table 50: Editorial role and opinion on offering free access to scholarly articles in the journal (Means)**

| | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum |
|---|---|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound | | |
| Editor | 218 | 3.45 | 1.229 | .083 | 3.29 | 3.61 | 1 | 5 |
| Associate editor | 279 | 3.70 | 1.090 | .065 | 3.57 | 3.83 | 1 | 5 |
| Member of the editorial board | 197 | 3.93 | .961 | .068 | 3.79 | 4.06 | 1 | 5 |
| Total | 694 | 3.69 | 1.116 | .042 | 3.60 | 3.77 | 1 | 5 |

**Table 51: Editorial role and opinion on offering free access to scholarly articles in the journal (One-Way ANOVA)**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 23.890 | 2 | 11.945 | 9.835 | .000 |
| Within Groups | 839.258 | 691 | 1.215 | | |
| Total | 863.148 | 693 | | | |

Those who elaborated on their answers (n=179) reported three major themes, which are financial issues, quality, and access. The majority of those who addressed the financial aspect believe that publishers are dependent on subscriptions or other fees to be financially viable. Also, the majority of those who addressed the quality aspect have a concern over the quality of published articles in open access. One respondent stated:

> The publication is expensive. Someone has to pay for it. If the reader does not pay (open access), then the authors should pay. Then, only "rich" authors can publish articles; it will not be possible for "poor" authors. The money will be a pre-requisite for publication, not the quality of the article.

There was less difference in opinion on allowing authors to self-archive. Editors scored the lowest mean[48] (3.67) followed by members of editorial board with a mean of 3.81 then associate editors with highest mean of 3.83, see Table 52. A One-Way ANOVA Test shows no statistically significant difference between editors, associate editors, and members of the editorial board with regard to their opinion on allowing authors to self-archive

**Table 52: Editorial role and opinion about self-archiving (Means)**

| | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum |
|---|---|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound | | |
| Editor | 218 | 3.67 | 1.207 | .082 | 3.51 | 3.84 | 1 | 5 |
| Associate editor | 278 | 3.83 | 1.084 | .065 | 3.70 | 3.96 | 1 | 5 |
| Member of the editorial board | 197 | 3.81 | 1.147 | .082 | 3.65 | 3.97 | 1 | 5 |
| **Total** | **693** | **3.77** | **1.142** | **.043** | **3.69** | **3.86** | **1** | **5** |

Those who elaborated on their answers (n=145) about their opinion on allowing authors to self-archive addressed a number of themes. In general, these answers represented two perspectives. From one perspective, some respondents think it is the author's responsibility to make his/her article free by paying some fee to the publisher to allow that. Other respondents think the principle of free access is a good one and they support allowing authors to self-archive.

From the other perspective, some respondents think that self-archived articles do not maintain the same quality as articles that are published in subscription-based journals. Other respondents think self-archiving will impact the subscription-based journal financially. One respondent stated "If this affects journal circulation to a great extent this will lead to [the] demise of [the] journal and the peer review service it provides".

The attitudes of editorial boards to open access were also explored by asking about their level of agreement with a series of five statements about open access (Table 39). Agreement with these statements may be influenced by the respondent's age and gender. First, respondent's

[48] Based on a five-point scale where 1= strongly oppose and 5=strongly support.

age is a factor in agreement with the above statements. Respondents with an age of 44 or younger differ from those of age 55 or older. The results of a One-Way ANOVA Test show that there is a statistically significant difference between the respondents based on their age with regard to agreement with the statements about open access, see Table 54. Similarly, those who reported their age as 24-34 were more likely to agree that an open access model could be financially viable and can carry the same level of peer review than those who reported their age as over 64, see Table 53.

These five statements, on financial viability, level of peer review, quality of indexing, impact, and long term preservation, present aspects of open access that have been identified in the literature as concerns for those considering an open access model. (These issues were discussed in Chapter 2, and also emerged in the comments provided by participants to open-ended questions in this study). Therefore, the level of agreement of participants with these positive statements about open access can be seen in some measure as an indicator of their acceptance of an open access model.

**Table 53: Level of agreement with the statements and the respondent's age (Means)**

| | N | Mean[49] | 95% Confidence Interval for Mean | | Minimum | Maximum |
|---|---|---|---|---|---|---|
| | | | Lower Bound | Upper Bound | | |
| 24-34 | 21 | 3.4190 | 3.1051 | 3.7330 | 2.00 | 5.00 |
| 35-44 | 124 | 3.1915 | 3.0516 | 3.3314 | 1.00 | 5.00 |
| 45-54 | 211 | 3.1069 | 2.9913 | 3.2224 | 1.00 | 5.00 |
| 55-64 | 223 | 2.9709 | 2.8637 | 3.0780 | 1.00 | 5.00 |
| Over 64 | 111 | 2.9788 | 2.8100 | 3.1477 | 1.00 | 5.00 |
| **Total** | **690** | **3.0670** | **3.0046** | **3.1295** | **1.00** | **5.00** |

[49] Based on a five-point scale where 1= strongly disagree and 5=strongly agree.

**Table 54: Level of agreement with the statements and the respondent's age (One-Way ANOVA)**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 7.786 | 4 | 1.946 | 2.819 | .024 |
| Within Groups | 472.902 | 685 | .690 | | |
| **Total** | **480.687** | **689** | | | |

Second, respondent's gender was a factor in the above statements. In general, female respondents show more agreement with the five statements than male respondents, see Table 55. The results of a T-Test show that there is a statistically significant difference between female respondents and male respondents with regard to their agreement about the statements on open access, see Table 56. It should be noted that the number of female respondents is much lower than the number of male respondents, see Table 57.

**Table 55: Gender and statements (Means)**

| Gender | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|
| Male | 551 | 3.0098 | .84368 | .03594 |
| Female | 131 | 3.2775 | .77294 | .06753 |

**Table 56: Gender and statements (T-Test)**

| | t-test for Equality of Means | | | | |
|---|---|---|---|---|---|
| | | | | 95% Confidence Interval of the Difference | |
| | t | df | Sig. (2-tailed) | Lower | Upper |
| Equal variances assumed | -3.315 | 680 | .001 | -.42621 | -.10915 |
| Equal variances not assumed | -3.499 | 210.095 | .001 | -.41849 | -.11687 |

**Table 57: Gender and level of responsibility at the journal (Cross-tabulation)**

| Gender | | Editors Role | | | Total |
|---|---|---|---|---|---|
| | | Editor | Associate editor | Member of the editorial board | |
| Male | Count | 182 | 212 | 155 | **549** |
| | % within Gender | 33.2% | 38.6% | 28.2% | **100.0%** |
| | % within Editors Role | 83.5% | 76.5% | 78.3% | **79.2%** |
| Female | Count | 34 | 57 | 40 | **131** |
| | % within Gender | 26.0% | 43.5% | 30.5% | **100.0%** |
| | % within Editors Role | 15.6% | 20.6% | 20.2% | **18.9%** |
| Prefer not to answer | Count | 2 | 8 | 3 | **13** |
| | % within Gender | 15.4% | 61.5% | 23.1% | **100.0%** |
| | % within Editors Role | .9% | 2.9% | 1.5% | **1.9%** |
| **Total** | **Count** | **218** | **277** | **198** | **693** |
| | **% within Gender** | **31.5%** | **40.0%** | **28.6%** | **100.0%** |
| | **% within Editors Role** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Participants in general were asked about their satisfaction with the current business model of the journal. Those who identified the journal model as open access were more satisfied than those who identified the journal model as subscription-based. A One-Way ANOVA Test shows the difference is statistically significant, see Table 58.

**Table 58: Satisfaction with the journal model (One-Way ANOVA)**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 22.366 | 1 | 22.366 | 14.863 | .000 |
| Within Groups | 993.168 | 660 | 1.505 | | |
| Total | 1015.535 | 661 | | | |

In examining responses to this question in more detail, it was found that editors showed no statistically significant difference between their level of satisfaction based on the journal business model, open access or subscription-based. However, associate editors and members of the editorial boards showed a statistically significant difference between their level of satisfaction and the business models of the journal, see Table 59. Associate editors and members of the editorial board are more satisfied with open access journals than subscription-based journals.

**Table 59: Satisfaction with the journal model based on the level of responsibility at the journal (Means)**

| Level of responsibility at the journal | Business model | Mean[50] |
|---|---|---|
| Editors | Open access journal<br>Subscription-based journal | 4.0<br>3.7 |
| Associate editors | Open access journal<br>Subscription-based journal | 4.2<br>3.6 |
| Member of the editorial board | Open access journal<br>Subscription-based journal | 4.4<br>3.5 |

Editorial boards who elaborated on their answers (n=158) about their satisfaction with the current business model of the journal expressed their concerns with three aspects: quality, financial issues, and access. It should be noted that the majority of those who elaborated on their answers have significant reservations about open access. In general, they are concerned with the quality of the published articles in open access models and they are concerned with the financial viability of open access models. On the other hand, those who support open access are concerned with the restrictions of access to journal articles.

Those who addressed the journal's quality and financial aspects think that an open access model is not an acceptable substitute for the subscription-based model. They believe that the quality of published articles will be low and that an open access model will not survive financially. One respondent said:

> The subscription basis ensures that we can support the necessary staff to maintain the high quality of the journal.

[50] Based on a five-point Likert scale where 1= very dissatisfied and 5=very satisfied,

On the other hand, those who addressed the access aspect believe that the open access models will increase the knowledge dissemination by extending access to many readers around the world. One respondent stated:

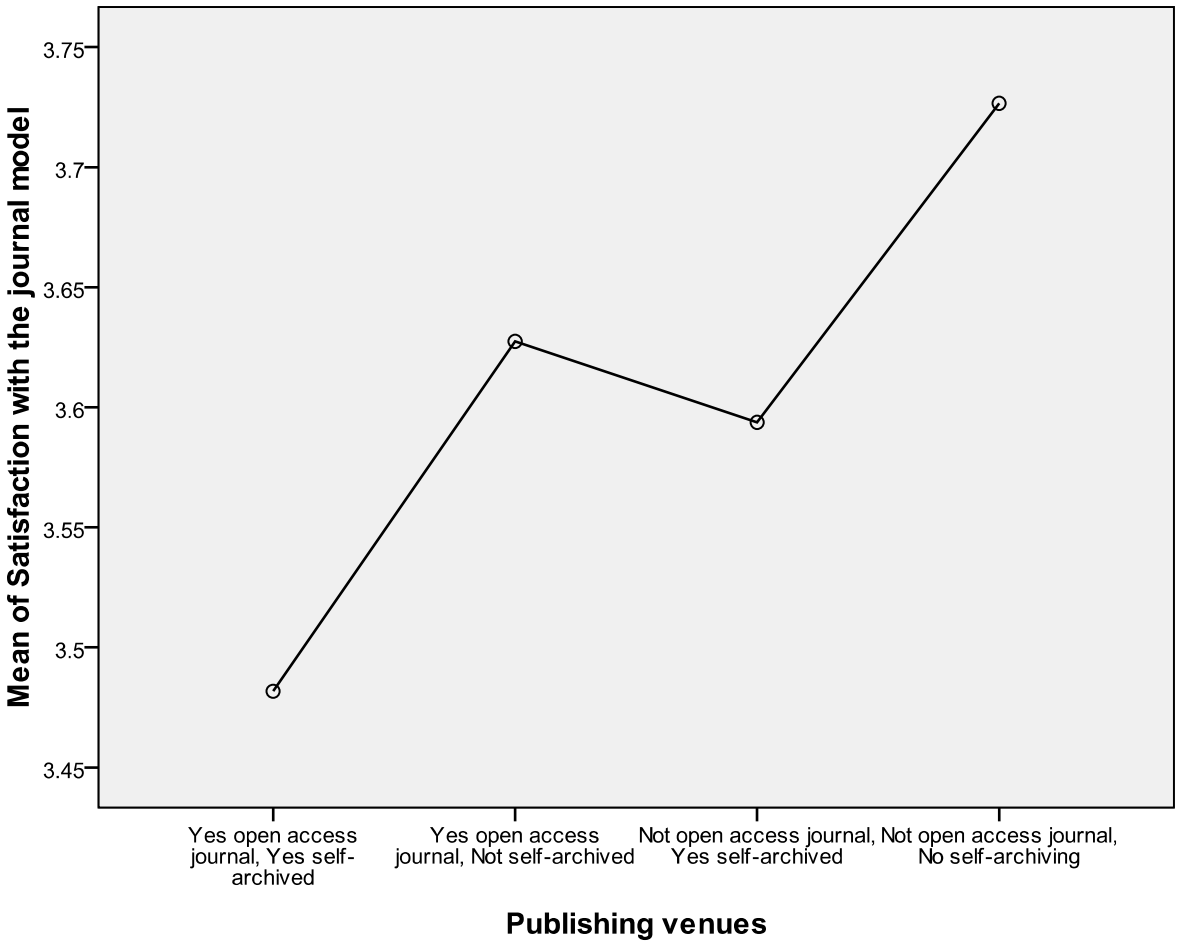
> As an editor/scientist I am interested in disseminating information as widely as possible, which is at odds with the commercial requirement for the publisher to make a profit. Hence, I feel the subscription rate for individuals is too expensive.

The attitudes of editorial boards toward the business model of their journal differs based on their publishing behaviour, i.e., whether they have published in open access journals, self-archived, or have never done either. In general, those who have never published in open access journals nor self-archived recorded the highest satisfaction with the business model of the journal, as shown in Figure 1. Although it is a five-point Likert scale the figure only shows the numbers that are relevant to the analysis, which range from 3.45 to 3.75.

In more detail, those who indicated that the journal model is subscription-based have expressed their satisfaction as follows: published in open access journal and self-archived, mean=3.4; published in open access journal but never self-archived, mean=3.3; never published in open access journal but self-archived, mean of 3.6; never published in open access journal and never self-archived, mean of 3.9. On the other hand, those who indicated the journal model is open access have expressed their satisfaction as follows: published in open access journal and self-archived mean of 4.1; published in open access journal but never self-archived, mean of 4.3; never published in open access journal but self-archived, mean of 3.9; never published in open access journal and never self-archived, mean of 3.7.

The average mean of satisfaction of those who indicated that the journal is subscription-based is 3.6 and the average mean of satisfaction of those who indicated that the journal model is open access is 4.0.

**Figure 1: Means of satisfaction with the journal model and publishing behaviour**




The satisfaction of editors and associate editors with the journal model shows a statistically significant difference based on their publishing behaviour. For example, an editor who has published in open access journals and self-archived indicates a much lower satisfaction with the journal model than those who have never published in open access journals and never self-archived. It should be noted that the majority of the respondents have identified the journal model as subscription-based. This means, in general, editors and associate editors who published in open access journals and self-archived are less satisfied with subscription-based journals. A One-Way ANOVA Test was used to test if there is a statistical significance difference, see Table 60.

However, members of editorial boards show no statistically significant difference between their publishing behaviour and their satisfaction with the current business model of the journal.

**Table 60: Satisfaction with the journal model and publishing behaviour**

**-Editors-**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 17.370 | 3 | 5.790 | 3.286 | .022 |
| Within Groups | 375.322 | 213 | 1.762 | | |
| Total | 392.691 | 216 | | | |

**-Associate editors-**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 11.217 | 3 | 3.739 | 2.748 | .043 |
| Within Groups | 372.811 | 274 | 1.361 | | |
| Total | 384.029 | 277 | | | |

Editors and associate editors who have published in open access journals and self-archived have a much more supportive opinion on offering free access to the scholarly articles in the journal than editors and associate editors who have never published in open access journals and never self-archived. A One-Way ANOVA Test shows that the difference is statistically significant, see Table 61.

Members of editorial boards show no statistically significant difference between their publishing behaviour and their opinion on offering free access to the scholarly articles in the journal.

**Table 61: Opinion about offering free access to the scholarly articles in the journal and publishing behaviour (One-Way ANOVA)**

**-Editors-**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 32.185 | 3 | 10.728 | 7.751 | .000 |
| Within Groups | 293.440 | 212 | 1.384 | | |
| Total | 325.625 | 215 | | | |

**-Associate editors-**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 9.591 | 3 | 3.197 | 2.736 | .044 |
| Within Groups | 320.222 | 274 | 1.169 | | |
| Total | 329.813 | 277 | | | |

Generally, the opinion on offering free access to scholarly articles differs based on the publishing behaviour of the respondents, see Figures 2, 3, and 4. For example, those who have published in open access journals and self-archived generally support offering free access to the scholarly articles in the journal and those who have never published in open access journals and never self-archived generally oppose offering free access to the scholarly articles in the journal.

**Figure 2: Means of opinion on offering free access to scholarly articles based on the respondents' publishing behaviour (Editors)**

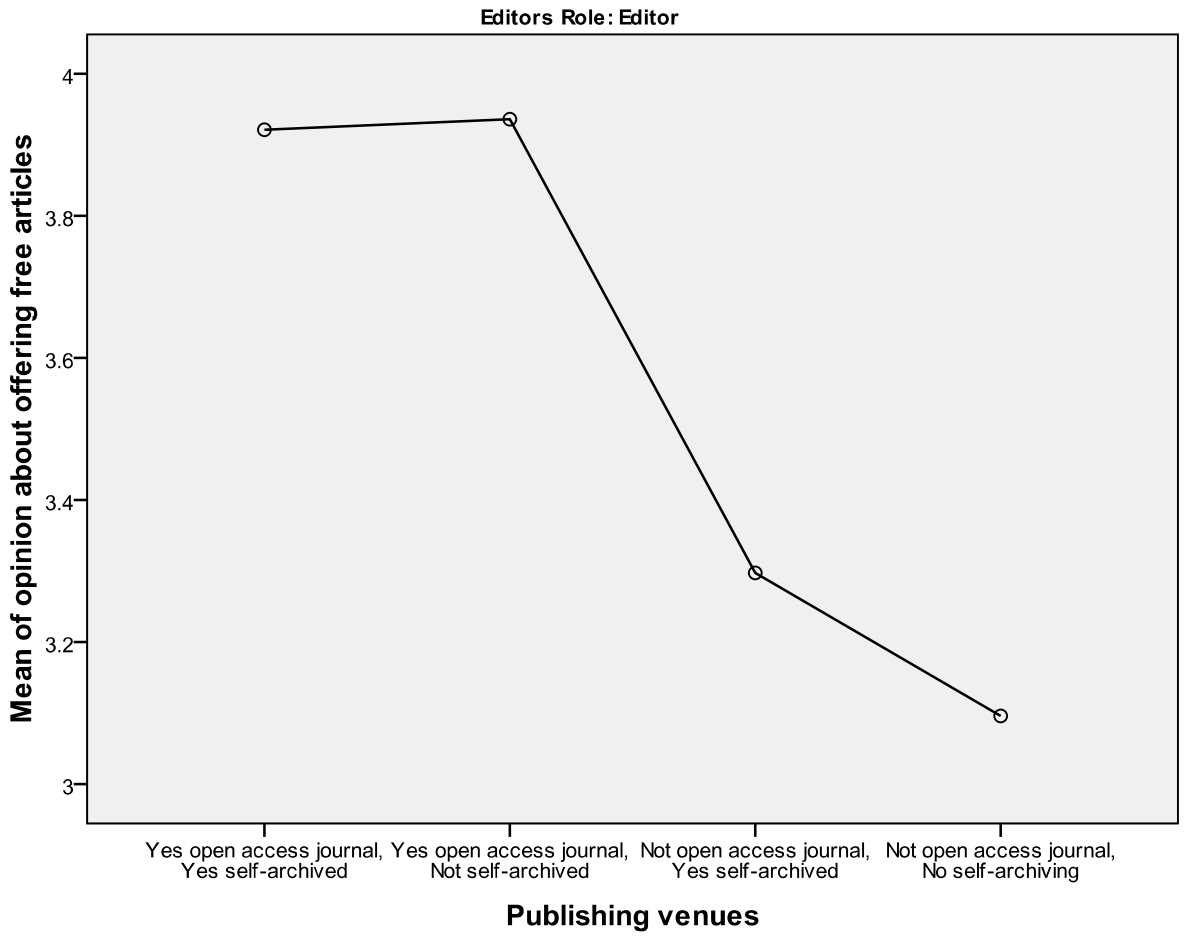


**Figure 3: Means of opinion on offering free access to scholarly articles based on the respondents publishing behaviour (Associate editors)**

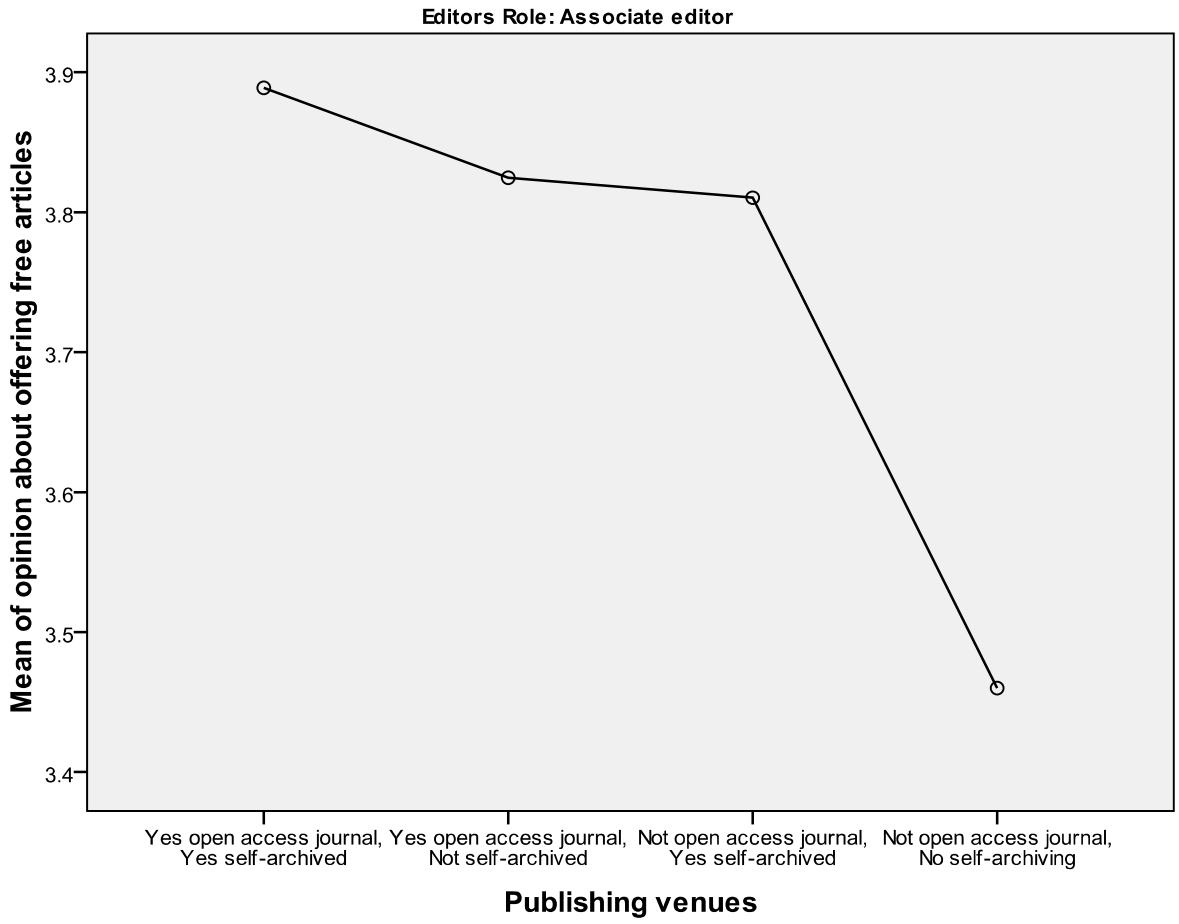
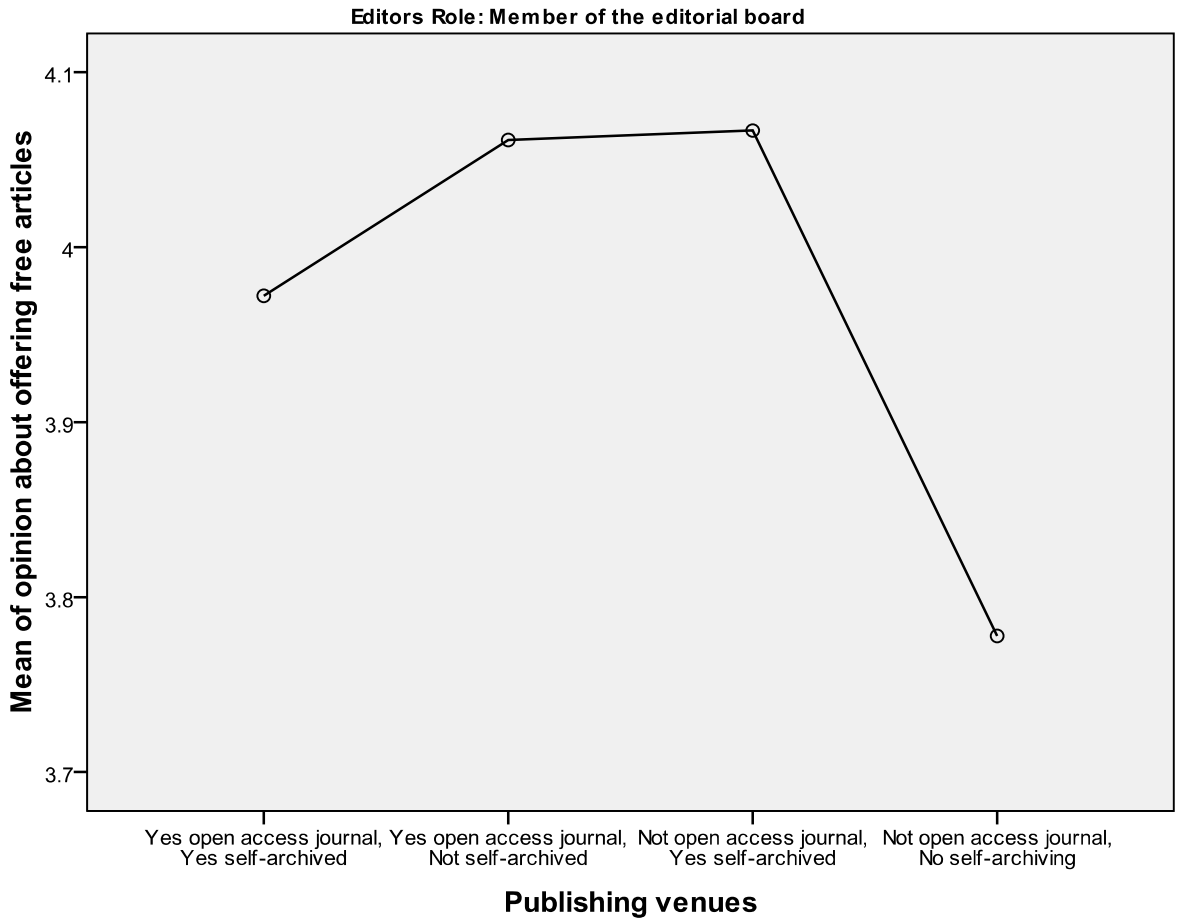


**Figure 4: Means of opinion on offering free access to scholarly articles based on the respondent publishing behaviour (Members of editorial board)**




In contrast, editors, associate editors, and members of editorial boards all have a statistically significant difference (based on a One-Way ANOVA Test) between their publishing behaviour and their opinion on allowing authors to self-archive, see Table 62.

**Table 62: Publishing behaviour and opinion on allowing authors to self-archive**

**-Editors-**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 62.517 | 3 | 20.839 | 17.981 | .000 |
| Within Groups | 245.700 | 212 | 1.159 | | |
| Total | 308.218 | 215 | | | |

**-Associate editors-**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 21.357 | 3 | 7.119 | 6.400 | .000 |
| Within Groups | 303.668 | 273 | 1.112 | | |
| Total | 325.025 | 276 | | | |

**-Members of editorial board-**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 50.019 | 3 | 16.673 | 15.391 | .000 |
| Within Groups | 207.996 | 192 | 1.083 | | |
| Total | 258.015 | 195 | | | |

Generally, those who have both published in open access journals and self-archived are more supportive of allowing authors to self-archive than those who have never published in open access journals or self-archived. An interesting observation is that those who have published in open access journals but have never self-archived have nearly the same opinion about self-archiving as those who have never published in open access journals and never self-archived, see Figure 5, 6, and 7. This means that publishing in open access journals does not in general influence the respondents to support self-archiving.

**Figure 5: Means of opinion about allowing authors to self- archive based on the respondents publishing behaviour (Editors)**

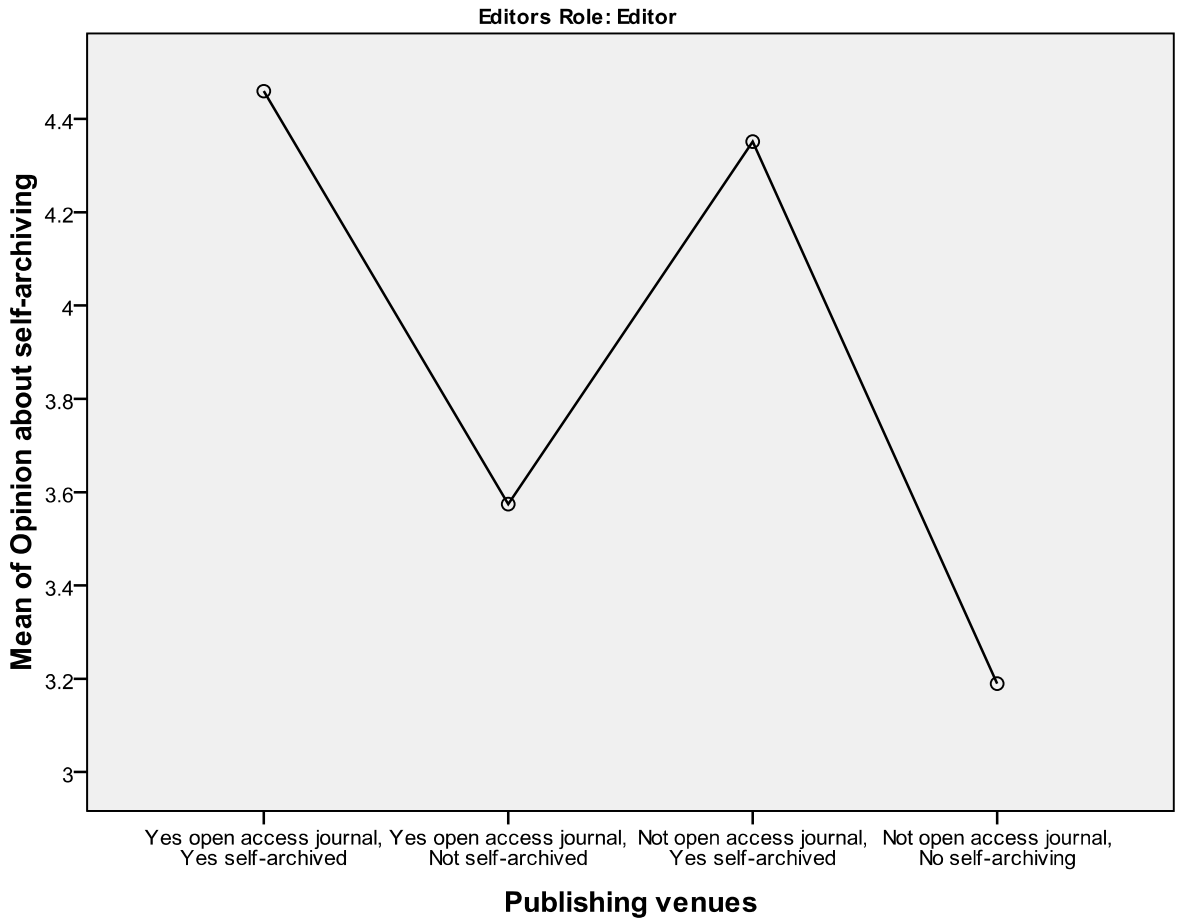


**Figure 6: Means of opinion about allowing authors to self- archive based on the respondents publishing behaviour (Associate editors)**

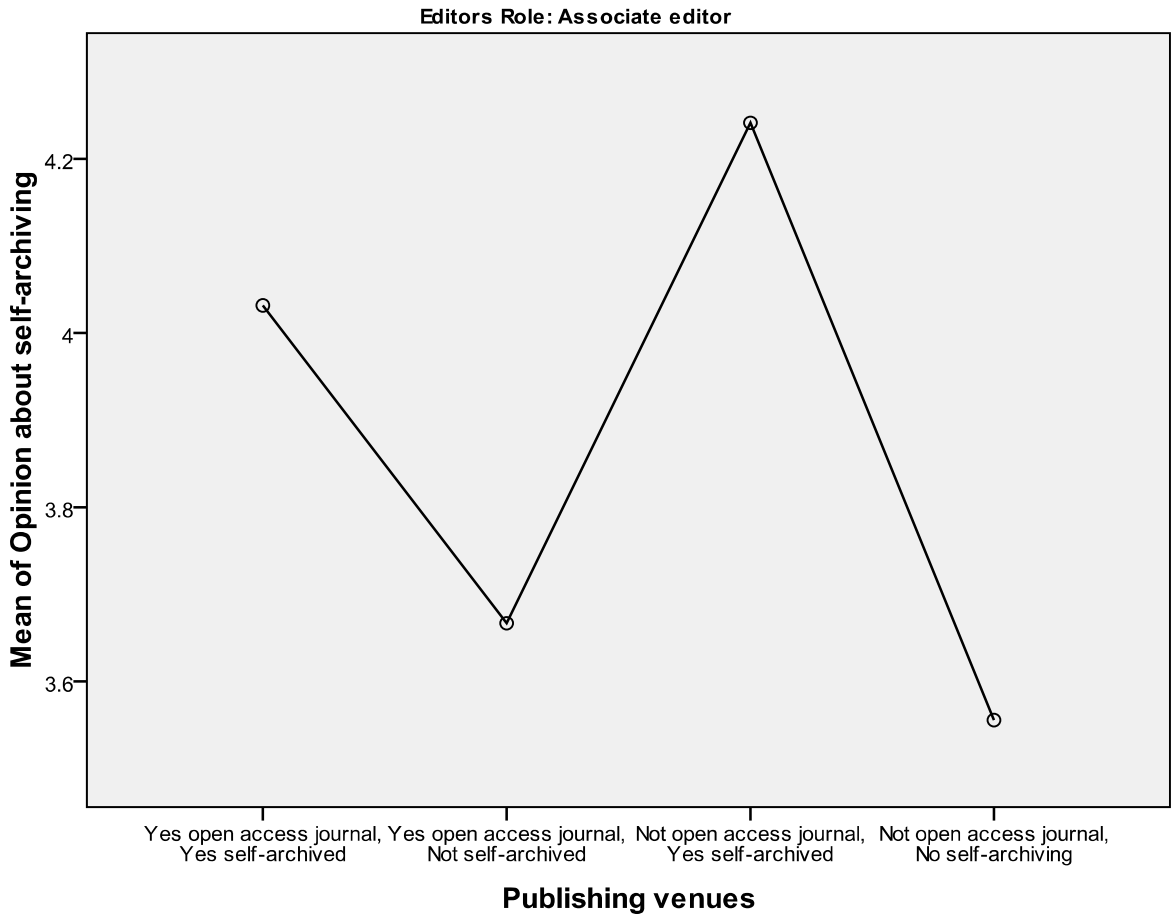
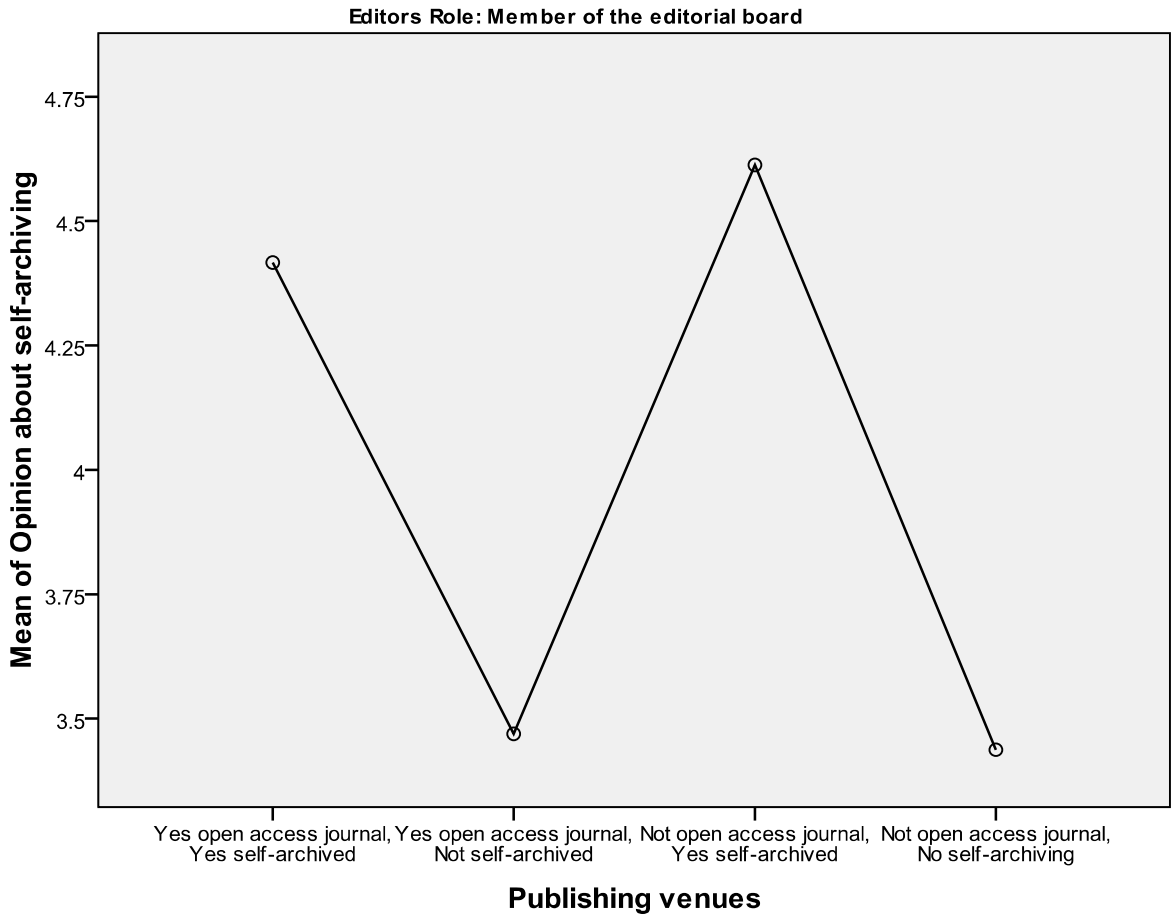


**Figure 7: Means of opinion about allowing authors to self-archive based on the respondents publishing behaviour (Members of the editorial board)**




In summary, editorial boards differ significantly in terms of their opinion on offering free access to scholarly articles in the journal. Editors are the least likely to support offering free access to scholarly articles in the journal and members of the editorial board are the most likely to support it; the difference is statistically significant. However, the editorial boards did not differ by role in terms of their opinion on allowing authors to self-archive.

The age of the respondents was a factor in the level of agreement with the statements about open access. Respondents who reported their age as 44 or younger are statistically different from those of age 55 or older in agreeing with the statements about open access. The gender of the respondents was also a factor on the level of agreement with the statements about

open access. In general, female respondents reported a higher level of agreement with the statements than male respondents, and the difference is statistically significant.

The publishing behaviour of the respondents, whether they published in open access journals, self-archived, both, or had never published in open access journals or self-archived, influenced the respondents' satisfaction with the journal model. The satisfaction of editorial boards with open access journals is higher than their satisfaction with subscription-based journals; the difference is statistically significant.

In addition, the publishing behaviour of the respondents influenced their opinion on offering free access to the scholarly articles in the journal. Editors and associate editors who published in open access journals and self-archived have a much more supportive opinion on offering free access to the scholarly articles in the journal than editors and associate editors who have never published in open access journals and never self-archived; the difference is statistically significant. Moreover, the publishing behaviour of the respondents influenced their opinion on allowing authors to self-archive. In general, those who both published in open access journals and self-archived have more support for allowing authors to self-archive than those who have never published in open access journals or self-achieved; the difference is statistically significant.

In general, respondents have strong reservations about the quality of open access journals and about the financial aspects of open access. However, many support the idea of making all articles freely accessible to readers.

## 5.5 Editorial Boards as a Force for Change

*Have editorial boards acted as a force for change in access policies set by journal publishers (scholarly societies, commercial publishers, or university presses)?*

Editorial boards in some cases have exercised their options to influence the journal publisher to change the journal's access policies. There are strong measures possible, such as resigning from the editorial board, and less extreme measures such as raising the issue for discussion on the editorial board.

It seems likely that the individual's overall level of responsibility on the editorial board could be related to his or her sense of responsibility about the journal's access policies, and this was borne out by the data. A Chi-square Test shows that there is a statistically significant difference between editors, associate editors and members of editorial boards with regard to their perception of their responsibility to influence journal policies regarding access to scholarly articles, see Table 63. Members of the editorial boards did not indicate the same level of responsibility as editors or associate editors.

**Table 63: Editorial role and responsibility to influence journal policies regarding access to scholarly articles (Chi-Square test)**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 37.484[a] | 2 | .000 |

The same question can be raised about overall level of responsibility on the board and sense of responsibility regarding policies on self-archiving. A Chi-square Test shows that there is a statistically significant difference between editors, associate editors and members of editorial boards with regard to their perception of their responsibility to influence journal policies regarding self-archiving, see Table 64. Members of the editorial boards did not appear to feel as strongly as editors or associate editors that they have a responsibility to promote change.

**Table 64: Editorial role and responsibility to influence journal policies regarding self-archiving (Chi-Square test)**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 38.932[a] | 2 | .000 |

Overall, editorial boards indicated a higher degree of responsibility to influence journal policies regarding access to scholarly articles than to influence journal policies regarding self-archiving. This responsibility for influencing journal policies regarding access to scholarly articles and the responsibility to influence journal policies regarding self-archiving was felt most

strongly by editors, next by associate editors, and least by members of editorial boards, see Tables 65-1 and 65-2. This order reflects the common level of responsibility on editorial boards at scholarly journals.

**Table 65-1: Responsibility to influence journal policies among editorial boards regarding access to scholarly articles**

| Do you feel you have a responsibility to influence journal policies regarding access to scholarly articles? | | Level of responsibility at the journal | | | **Total** |
|---|---|---|---|---|---|
| | | Editor | Associate editor | Member of the editorial board | |
| Yes | Count | 171 | 178 | 98 | **447** |
| | % of all 'yes' responses | 38.3% | 39.8% | 21.9% | **100.0%** |
| | % of all responses within the level of responsibility at the journal | 78.8% | 63.8% | 50.0% | **64.6%** |
| No | Count | 46 | 101 | 98 | **245** |
| | % of all 'no' responses | 18.8% | 41.2% | 40.0% | **100.0%** |
| | % of all responses within the level of responsibility at the journal | 21.2% | 36.2% | 50.0% | **35.4%** |
| **Total** | **Count** | **217** | **279** | **196** | **692** |
| | **% of all responses** | **31.4%** | **40.3%** | **28.3%** | **100.0%** |
| | **% of all responses within the level of responsibility at the journal** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Those who elaborated on their answers (n=77) regarding actions to make some or all articles free to readers addressed a number of themes. These themes are access to specific people, already free, embargo time, financial issues, full access, authors' responsibility, and special access.

The majority requested some form of access such as access to readers in developing countries, access after an embargo time (for example, 12 months after publication), or making articles of a special issue free to all. However, some respondents gave their view that it is the

authors' decision whether or not to make an article free. For example, an author could pay some pre-determined fee to make his/her article free to all. Also, some respondents indicated that they requested that articles be made free to readers but that ultimately it is the publisher's decision. One respondent stated "In response to reader feedback we have set content free after 12 months. It's a publisher decision, of course".

**Table 65-2: Responsibility to influence journal policies among editorial boards regarding allowing authors to self-archive**

| Do you feel you have a responsibility to influence journal policies regarding self-archiving? | | Level of responsibility at the journal | | | **Total** |
|---|---|---|---|---|---|
| | | Editor | Associate editor | Member of the editorial board | |
| Yes | Count | 156 | 152 | 82 | **390** |
| | % of all 'yes' responses | 40.0% | 39.0% | 21.0% | **100.0%** |
| | % of all responses within the level of responsibility at the journal | 71.9% | 54.9% | 41.6% | **56.4%** |
| No | Count | 61 | 125 | 115 | **301** |
| | % of all 'no' responses | 20.3% | 41.5% | 38.2% | **100.0%** |
| | % of all responses within the level of responsibility at the journal | 28.1% | 45.1% | 58.4% | **43.6%** |
| **Total** | **Count** | **217** | **277** | **197** | **691** |
| | **% of all responses** | **31.4%** | **40.1%** | **28.5%** | **100.0%** |
| | **% of all responses within the level of responsibility at the journal** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Those who elaborated on their answers (n=27) about actions to allow authors to self-archive have addressed a number of themes: archival type, compliance with NIH policies, and existing policy. Some stated that the journal already allows authors to self-archive while others requested compliance with the National Institutes of Health access policy. Some respondents who elaborated on their answers had requested self-archiving of only a specific archival type

such as the final version of the article, or self-archiving the article after a period of time (for example, six months).

In general, there is a sense that editorial boards have some responsibility to influence journal policies. The level of responsibility to influence access policies to scholarly articles expressed was higher than the level of responsibility expressed to influence self-archiving policies. The responsibility to influence access policies to scholarly articles and to influence self-archiving policies differ based on the level of responsibility at the journal.

However, a feeling of responsibility to influence journal policies does not imply that editorial boards are prepared to take strong actions to influence any type of change. Most respondents, whether editors, associate editors or members of the editorial board, are unlikely to resign from the editorial board or launch a new open access journal in the same subject to influence changes in journal access policies. In general, respondents are more likely to take more moderate actions such as raise the issue for discussion on the editorial board or negotiate the access polices with the publisher than to take more extreme actions such as resigning from the editorial board or launching a new open access journal.

There is a statistically significant difference between editors, associate editors, and members of the editorial board in term of negotiating the access policies with the publisher, see Table 66. Editors were more likely to negotiate the journal access policies with the publisher than members of the editorial board. However a One-Way ANOVA Test shows that there is no statistically significant difference between editors, associate editors, and members of the editorial board in term of resigning from the editorial board, or in term of launching a new open access journal in the same subject, or in terms of raising the issue for discussion on the editorial board.

**Table 66: Editorial role and actions (One-Way ANOVA)**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 134.011 | 2 | 67.006 | 32.998 | .000 |
| Within Groups | 1360.491 | 670 | 2.031 | | |
| Total | 1494.502 | 672 | | | |

The respondent's years of association with the journal in an editorial capacity did not make a difference in how likely a respondent might be to take a particular action in changing the journal policies; the difference is not statistically different based on a One-Way ANOVA Test. For example, the probable actions of those who spent 7 years or more at the journal in an editorial capacity were not statistically different from those who have been associated with the journal in an editorial capacity for less than a year. A Chi-square Test was performed to determine if the level of responsibility at the journal made a difference in terms of requesting changes in policy to make some or all articles free to readers. The results show that there is a statistically significant difference between the level of responsibility at the journal (editors, associate editors, and members of the editorial board) and whether they have requested changes in policy to make access to some or all articles free, see Table 67. Editors were most likely to have requested changes, then associate editors, then members of the editorial board, see Table 68.

**Table 67: Editorial role and whether changes in policy were requested to make access to some or all articles free (Chi-Square test)**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 67.351[a] | 2 | .000 |

**Table 68: Editorial role and whether changes in policy were requested to make access to some or all articles free**

| Did you request changes in journal policy to make access to some or all articles free? | | Level of responsibility at the journal | | | **Total** |
|---|---|---|---|---|---|
| | | Editor | Associate editor | Member of the editorial board | |
| Yes | Count | 72 | 36 | 8 | **116** |
| | % of all 'yes' responses | 62.1% | 31.0% | 6.9% | **100.0%** |
| | % of all responses within the level of responsibility at the journal | 33.0% | 12.9% | 4.0% | **16.7%** |
| No | Count | 146 | 242 | 190 | **578** |
| | % of all 'no' responses | 25.3% | 41.9% | 32.9% | **100.0%** |
| | % of all responses within the level of responsibility at the journal | 67.0% | 87.1% | 96.0% | **83.3%** |
| **Total** | **Count** | **218** | **278** | **198** | **694** |
| | **% of all responses** | **31.4%** | **40.1%** | **28.5%** | **100.0%** |
| | **% of all responses within the level of responsibility at the journal** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Editors were most likely to have requested changes to the journal policy to allow authors to self-archive, followed by associate editors, then members of the editorial board, see Table 69. A Chi-square Test shows that there is a statistically significant difference between the level of responsibility at the journal (editors, associate editors, and members of the editorial board) and whether they requested changes in policy to allow authors to self-archive, see Table 70.

**Table 69: Editorial role and whether changes in policy were requested to allow authors to self-archive (Chi-Square test)**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 25.261[a] | 2 | .000 |

**Table 70: Editorial role and whether changes in policy were requested to allow authors to self-archive**

| Did you request changes in journal policy to allow authors to self-archive? | | Level of responsibility at the journal | | | **Total** |
|---|---|---|---|---|---|
| | | Editor | Associate editor | Member of the editorial board | |
| Yes | Count | 29 | 12 | 4 | **45** |
| | % of all 'yes' responses | 64.4% | 26.7% | 8.9% | **100.0%** |
| | % of all responses within the level of responsibility at the journal | 13.2% | 4.3% | 2.0% | **6.5%** |
| No | Count | 190 | 267 | 194 | **651** |
| | % of all 'no' responses | 29.2% | 41.0% | 29.8% | **100.0%** |
| | % of all responses within the level of responsibility at the journal | 86.8% | 95.7% | 98.0% | **93.5%** |
| **Total** | **Count** | **219** | **279** | **198** | **696** |
| | **% of all 'no' responses** | **31.5%** | **40.1%** | **28.4%** | **100.0%** |
| | **% of all responses within the level of responsibility at the journal** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

More than half of the respondents have indicated that the policy was made prior to the date when they joined the editorial board and/or they participated in board discussions about offering all or some of the journal's scholarly articles free. With regard to their role in helping to formulate the journal's access policy, a majority of editors were involved (about 85%) during their tenure in the editorial board in the decision. Fifty-two editors (85.2%) were involved compared to eight associate editors (13.1%) and one member of the editorial board (1.6%). This is not surprising since editors have the primary responsibility for the journal and they are typically the ones who communicate with the publisher.

Moreover, editors were also very involved (about 85%) during their tenure in the editorial board in helping to formulate the journal's self-archiving policy. Twenty-nine editors (85.3%) were involved compared to four associate editors (11.8%) and one member of the editorial board

(2.9%). It should be noted that most editorial boards indicated that the policy was made prior to the date when they joined the editorial board.

In summary, editors, associate editors, and members of the editorial board differ significantly in terms of the responsibility that they expressed on influencing journal policies regarding access to scholarly articles. Editors felt more responsible for influencing journal policies regarding access to scholarly articles than associate editors or members of the editorial board. Also, editors, associate editors, and members of the editorial board differ significantly in terms of the responsibility to influence journal policies regarding allowing authors to self-archive that they expressed. Editors felt more responsible for influencing journal policies regarding allowing authors to self-archive than associate editors or members of the editorial board.

Editorial boards differ, based on their role, in terms of negotiating the access policies with the publisher, the difference is statistically significant. Editors were more likely to negotiate the journal access policies with the publisher than members of the editorial board. Editorial boards also differ in terms of requesting changes to make some or all articles free in the journal or requesting changes to allow authors to self-archive. In both cases, editors were more likely to request changes than associate editors or members of the editorial board; the difference is statistically significant.

# CHAPTER 6: DISCUSSION AND CONCLUSIONS

## 6.1 Introduction

This chapter reports the major findings from the data analysis and discusses the result in relation to the study's research questions, and in relation to prior research. The relevance of gatekeeping theory with respect to the role of editorial boards in shaping access policies is discussed. The overall conclusions from the study are discussed in the context of the study's limitations and its significance. Finally, recommendations are offered for future research.

The research questions addressed in this study are:

1. What positions have journal publishers (categorized as scholarly societies, commercial publishers, and university presses) adopted on open access as expressed in their current access policies on offering free content to users and allowing authors to self archive?
2. How aware are editors and editorial boards of their publisher's access policies?
3. How consistent are the attitudes of editors and editorial boards to open access with those of the publishers they serve?
4. Have editorial boards acted as a force for change in access policies set by journal publishers (scholarly societies, commercial publishers, or university presses)?
5. How is the perception and promotion of open access by editors and editorial board members related to (a) their level or responsibility at the journal and (b) their own open access publishing behaviour?

## 6.2 Composition of the Editorial Board

The data collected for this study shows that the majority of those who work in scholarly journal editorial boards are male, hold a doctoral degree, are tenured faculty members, and are in the age range 45-64 years. And, since the sample was drawn from top-ranked scholarly journals in *Journal Citation Reports*, this suggests that this is the profile of editorial boards for these journals.

Based on previous studies that examined the relative presence of men and women on the editorial boards of scholarly journals (see Section 2.5.1) it was expected that the percentage of those who served in a secondary responsibility (i.e. as associate editors) or as a member of the editorial board who were female would be much higher than the percentage of females acting as editor-in-chief (primary responsibility at the journal). However, when the respondents' gender and their level of responsibility at the journal are cross-tabulated, the results show that the number of females acting as editor is 34 (15.6%) and as associate editor (secondary responsibility) is 57 (20.6%), and as a member of the editorial board is 40 (20.2%) (see Table 57). This suggests that the presence of women on editorial boards relative to men is low in all categories, not just in the editor-in-chief role.

More than half of the editors in this study have served on the journal for seven or more years, while of participants with secondary responsibility (i.e. associate editors and members of the editorial board), fewer than 30% have served this long. Participants with a secondary responsibility and members of editorial board have most frequently served the journal between one and three years.

## 6.3 Question One

*What positions have journal publishers (categorized as scholarly societies, commercial publishers, and university presses) adopted on open access as expressed in their current access policie on offering free content to users and allowing authors to self archive s?*

Journal publishers play a critical role in scholarly communication by managing and distributing scholarly journals. However, over the years publishers have regularly increased the subscription fees for their journals and the escalating subscription prices resulted in what has been referred to as a "serials crisis" (Cole, 2004). Alternative publishing models, open access, were introduced which provide scholarly articles to readers for free. Generally, publishers did not welcome the new publishing models because of their concerns with pricing models, peer reviewing, indexing and impact factors, archiving, and the stability of the new publishing models for scientific literature (Kwasik and Fulda, 2005).

Nonetheless, publishers started gradually to consider open access and experiment with new publishing models (Cox and Cox, 2003; Cox and Cox, 2006; Björk and Hedlund 2009).

For example, Cox and Cox (2006) found that a fifth of the 400 publishers they surveyed were experimenting with open access journals. While the American Psychological Association (APA) policy in 1996 stated that authors were not permitted to put their manuscripts on the Internet at any stage (cited in Kling and McKim, 1998), the APA's policy has changed and now authors are permitted to put their manuscripts on the Internet.

In 2007 and 2008, over 100 journals converted from a subscription-based model to open access, including some journals that have existed for more than 25 years (Suber, 2009). A major publisher, Elsevier, currently allows self-archiving for almost all of its journal titles (Peek, 2007). In this study, 44 respondents[51] (6.3%) identified their journal as open access at the time when they were invited to join the editorial board compared to 60 respondents (8.6%) whose journal was open access at the time when they responded to the questionnaire, an increase of 2.3% based on the total count of 701. This result is very similar to the 8.5% of all active, peer-reviewed, scholarly/academic journals represented by open access journals as reported by Björk and Hedlund (2009). In this study, the responses represent 60 study participants rather than individual journals, but the similarity to Björk and Hedlund's figure suggests that the representation in the data is similar to that in the journal population.

It should be noted that the number of journals that offer free articles is much higher than the total number of open access journals. For example, in this study 322 respondents (46%) stated that their journal offers all or some of its articles free to readers, which is much higher than the number of respondents (60) who identified the journal as open access.

With regard to self-archiving, only 135 respondents (19%) stated that their journal does not allow pre-prints or post-prints as a form of self-archiving, although about 47% were unaware of the journal's policy.

In this study, publishers in general were the second most frequent source of the initiative which resulted in making some or all articles in the journal free to readers and the most frequent source of the initiative that resulted in allowing authors to self-archive. There are some factors which may motivate publishers to experiment with open access.

[51] Note that these numbers refer to respondents, not necessarily to number of journals.

- Some funding agencies have established policies that force publicly funded projects to be published in open access. For example, the US National Institutes of Health (NIH) is required by US government to adopt an open access mandate for NIH-funded research (Suber, 2009).

- Open access can be viable from an economic perspective and some publishers, such as Hindawi Publishing and BiomMed Central, have successfully used an open access model for years and they report that they are making a profit (Suber, 2009).

- Some universities and schools such as Massachusetts Institute of Technology, Oregon State University, and Harvard's Faculty of Arts and Sciences have adopted a mandate requiring faculty to make their publications available through an institutional repository. This type of policy will impact publishers because they will lose authors at these institutions if they are unable to make their articles freely available (Oder, Albanese, & Lau-Whelan, 2009; Suber, 2009).

- The issue of open access is now too significant to ignore and publishers generally have three options to respond to open access issue, by fully supporting, opposing, or experimenting with it (Suber, 2009; Davis, 2009; Björk and Hedlund, 2009).

However, this does not mean that publishers have changed their behaviour completely to open access. According to Watkinson (2007) the great majority of scholarly journal publishers do not embrace open access. In their annual survey of library periodical prices, Van Orsdel and Born (2009) note that while the number of publishers offering an author-fee open access option is increasing, others are responding to the growth in institutional repositories and the practice of self-archiving by placing restrictions on authors' rights to post final manuscripts on the Web.

Although Lamb (2004) suggested that university presses are more innovative and experimental with open access, the difference in responses in this study from university presses and other types of publishers were not statistically significant.

As of March 2009, RoMEO listed policies on self-archiving for over 560 publishers of whom 351 allow some type of self-archiving[52]. The total number of publishers who have clear

[52] SHERPA/RoMEO (http://www.sherpa.ac.uk/romeo/) access date March 2009.

policies about open access is hard to measure since there are thousands of publishers who are not listed in RoMEO. It is made more difficult by the fact that many publishers have not publicly announced their policies on open access.

In summary, external evidence suggests that although many publishers are experimenting with open access models, they are not convinced that open access models are the appropriate replacement to the traditional publishing system, and the majority of journals are published following a subscription-based model. In this study, over 85% of respondents report that their journal follows a subscription-based model, while 45.7 % of those for whom the policy was known offer at least some articles for free, and 33.4% of those for whom the policy was known allow some form of self-archiving. This shows that even within the subscription-based model publishers are finding some ways to experiment with open access.

In this study the publishers are the second most frequent source of the initiative that resulted in offering free scholarly articles in journals and they were the most frequent source of the initiative allowing authors to self-archive. This suggests that publishers are active in instituting open access policies for their journals, within certain limitations. No clear-cut difference could be confirmed between categories of publisher. While a pattern emerged which suggested that in terms of offering some or all of their articles free to users, and in allowing authors to self-archive, university presses had more generous policies than scholarly publishers, which were again more generous than commercial publishers, this pattern could not be confirmed as statistically significant.

## 6.4 Question Two

*Are editors and editorial boards aware of their publisher's access policies?*

Editorial boards demonstrated some awareness about the journal access policies. Their awareness of journal policies regarding making articles free to users was higher than their awareness of journal policies regarding self-archiving. This awareness was shown to be related to the level of responsibility associated with the respondents' role on their journal's board. There is a statistically significant difference between editors, associate editors and members of the editorial board with regard to their awareness about whether the journal offers free articles. Also, there is a statistically significant difference between editors, associate editors and members

of the editorial board with regard to their awareness about whether the journal allows authors to self-archive. In both cases editors scored the highest awareness and members of the editorial board scored the lowest awareness.

An interesting finding of this study is that if a respondent does not know the journal's policy on users' access to journal articles then he/she is not likely to know the policy of the journal on self-archiving by authors, which suggests that awareness of the respondents on self-archiving relies heavily on their awareness of the journal policies on users' access to journal articles. In other words, it seems that the respondents of this study regard their knowledge about journal policies on users' access to journal articles as more important than their knowledge about journal policies on self-archiving by authors. It should be noted that many of the respondents who self-archive do not check the journal policy about self-archiving if they are not aware of it before they self-archive an article, which may indicate that the policy on self-archiving is not a major concern for authors. Covey (2009) found that faculty self-archiving practice is often not aligned with publisher policy, and similarly Antelman (2006) reported that publishers' self-archiving policies have no influence on author self-archiving practice.

Throughout the survey, respondents made clear that they felt the journal policy regarding self-archiving to be less important than the journal policy to offer some or all articles free to readers. Evidence for this is found in their responses to several questions. First, their awareness of the journal's policy regarding users' access to journal articles was much higher than their awareness of the journal's policy on self-archiving by authors. Second, their perceived responsibility to influence journal policies regarding access to scholarly articles was higher than their perceived responsibility to influence journal policies regarding self-archiving. Third, their positive opinion on offering free access to the scholarly articles in the journal was higher than their positive opinion on allowing authors to self-archive. Four, more respondents requested changes in policy to make access to some or all articles free than those who requested changes in policy to allow authors to self-archive. Five, more respondents reported that they have published in open access journals than self-archived. All of the above are indications that the respondents of this study believe that self-archiving is less important or less of an issue than making articles free to users.

Swan and Brown (2004) found that awareness of open access journals among those who had not published in them was quite high. However, the awareness among all respondents in their study of eprint archives was low, demonstrating that awareness of open access journals is higher than awareness of eprint archives. The findings in this study appear to be consistent with those of Swan and Brown, though it is surprising, given the growth in eprint repositories since their study was performed (Van Orsdel and Born, 2009), that respondents in this study did not exhibit more awareness of their journal's policy on self-archiving, nor engage in self-archiving activities to a greater extent.

It should be noted that close to 21% of the respondents did not know if the journal offers all or some of its articles free to readers and close to 47% of the respondents did not know if the journal allows authors to self-archive. This means that although many respondents in this study were aware of the journal policies there were also many who did not know it. Earlier studies reported low awareness of open access by authors. For example, Rowlands et al. (2004) reported that about 82 percent of authors know nothing to very little about the open access movement. However, the number of people who have knowledge about the open access movement has been growing. Schroter et al. (2005) concluded in their study that authors' awareness of open access publishing was higher than previously reported. Awareness of open access is higher in this study but of course respondents have a different role, that of editors and editorial board members, and might be expected to be privy to their journal's policies, so their lack of awareness of the journal's policy on self-archiving is somewhat surprising.

About two-thirds of the respondents do not consider the business model of the journal (for example, whether it is open access or subscription-based) a factor in deciding where to publish. They consider other issues such as the quality of the journal and the published work to be more important. This is consistent with other studies which show that quality of open access journals and the published work in open access is not yet comparable to the quality of subscription-based journals and the published work in them. Schroter et al. (2005) concluded in their study that the journal quality is more important for authors than open access when deciding where to submit their papers. Swan and Brown (2004) in their study reported that about 69% of the respondents who do did not publish in open access journals perceived open access journals in their field to have low impact and have low prestige. Moreover, the Kaufman-Wills Group

(2005) reported that open access journals did not achieve the same level of impact as more established journals, which mirrors the concern of respondents in this study about the quality of open access journals.

However, others have indicated that perceived difference in quality is not an issue in open access journals. For example, Poynder (2006) and Suber (2006b) pointed out that peer reviewing in open access journals could be as rigorous as peer reviewing in traditional journals. This may indicate that the respondents who consider the business model of the journal may 2be aware of such studies and therefore the concern over the quality of published work in open access is not an issue for them.

Moreover, the majority of respondents do not consider the policies of the journal regarding self-archiving as a factor in deciding where to publish. For those who elaborated on their reasons, this is also mainly due to concerns over the quality of the self-archived work. One respondent stated:

> Journals perform quality control: if an article appears in the journal, it was read and critiqued by at least 3 referees + someone like me. Self-archiving is a great idea, but not under the journal brand.

Another concern that a few respondents specifically commented on as a more important factor than the business model of the journal or the policies of the journal regarding self-archiving is the financial obligation that they may face when publishing in open access journals or self-archive, which is consistent with concerns expressed by authors in a study by Schroter et al. (2005). They found that authors who participated in their study did not have positive views on the author-pays model. It should be noted that close to half of the respondent neither disagree nor agree about whether open access journals can be financially viable which may indicate that more studies need to cover this area in order for the parties involved in scholarly publishing to have an informed opinion.

In summary, respondents demonstrated some awareness about the journal access policies. The awareness increases as their level of responsibility for the journal increases. Their awareness of journal policies regarding offering free articles was higher than their awareness of journal policies regarding self-archiving. In fact, the study revealed that if respondents did not

know the journal policies regarding offering free articles then they will not know the journal policy governing self-archiving.

## 6.5 Question Three

*Are the attitudes of editors and editorial boards to open access consistent with those of the publishers they serve?*

Respondents' attitudes to offering free access to the scholarly articles in the journal and to allow authors to self-archive are generally positive, although there are some reservations about the quality of open access journals and concerns about the financial viability when publishing in open access. The main advantage expressed by respondents in their comments is the principle of free access to readers.

The level of responsibility at the journal influenced the respondents' opinion on offering free access to the scholarly articles in the journal. Editors gave the lowest support to offering free articles while members of the editorial board gave the highest support. The difference between editors, associate editors and members of the editorial board is statistically significant. On the other hand, the level of responsibility at the journal did not influence the respondents' opinion about allowing authors to self-archive. This may be because editors feel responsible for the continued financial security of the journal, which may be affected by offering journal content for free, while self-archiving may be seen as an activity which does not affect the journal's revenue.

The attitudes to offering free access to the scholarly articles in the journal and to allow authors to self-archive are influenced by factors such as age and gender. Younger respondents seem to have a more positive opinion about open access than older respondents; the difference is statistically significant. Also, female respondents have a more positive opinion about open access than male respondents; again the difference is statistically significant. Rowlands et al. (2004) reported a similar result, finding that older, more senior authors were more devoted to the traditional print-based publishing system than their younger peers.

Respondents in this study are generally satisfied with the current publishing model of their journal. Those who identified the current model as open access were more satisfied than those who identified the journal as subscription-based; the difference is statistically significant.

Editors showed no statistically significant difference between their satisfaction with open access journals and subscription-based journals. However, associate editors and members of the editorial board showed a higher level of satisfaction with open access journals than with subscription-based journals, and this difference was statistically significant.

This difference between editors on the one hand and associate editors and members of the editorial board on the other may be due to the type of responsibility they have for the journal. Editors hold more responsibility at the journal and have more obligations (McGinty, 1998; Hames, 2007). Therefore, in general they have a stronger commitment to the journal than other individuals on the editorial board. Moreover, they usually accept the position as editor of the journal as an honor and a service to their academic community, and the journal reputation is a key factor when they accept the position (Harnad, 1996; Mulligan, 2005). This may mean that their satisfaction with the journal in general is high regardless of the journal's publishing model.

The respondents' satisfaction with the journal model is tempered by some reservations. Some are concerned with the quality of the published work in open access journals and with the quality of the self-archived work. Also, they are concerned with the financial obligation that they may face when publishing in open access journals or self-archive. However, some are not happy with restricting access to scholarly articles. They state that they consider knowledge dissemination to be a very important element in scholarly communication. These findings are consistent with those of Rowlands et al., (2004), who stated that authors have positive attitudes toward the open access movement although there are significant reservations about quality and preservation in the digital information landscape.

Respondents here seem to have two positions, based perhaps on the conflict between practical realities and an idealistic vision, because on the one hand they have a positive opinion about making articles freely accessible to readers and in allowing authors to self-archive and at the same time they are committed to the traditional publishing system. Although this may seem to indicate contradictory views held by the respondents of this study the result is consistent with

those of other studies. For example, Dow (2000) conducted a similar study which drew on Lewin's theory to examine the attitudes of editorial gatekeepers toward a transition from paper-formatted to electronic journals. He found that 59% of the respondents favoured the development of electronic journals but he concluded that editorial gatekeepers, although supportive of the creation of electronic journals, were still very committed to the paper format.

The satisfaction with the business model differs based on the publishing behaviour of respondents. Those who have published in open access journals and self-archived scored the lowest satisfaction with the business model of the journal. Since the majority of the respondents (637 of 704) identified the current business model of the journal as subscription-based, this means the majority of those who publish in open access journals and self-archive are not satisfied with subscription-based journals. On the other hand, those who have never published in open access journals nor self-archived scored the highest satisfaction with the current business model. This could be due to the lack of awareness or personal experience with alternative models, which may lead to a greater level of satisfaction with the model the respondents are familiar with.

Those who publish in open access journals and self-archive may not be satisfied with subscription-based journals because they want fewer restrictions on their published work. This would be consistent with the findings of Hoorn and Graaf (2006) on the attitude of authors in the UK and the Netherlands towards open access. They reported that 71% of respondents prefer to retain the copyright to their publications.

Both editors and associate editors show a statistically significant difference with respect to their publishing behaviour and their satisfaction with the current business model of the journal. Those who published in open access journals and self-archived have much lower satisfaction with the current business model. However, members of the editorial board have no statistically significant difference with respect to their publishing behaviour and their satisfaction with the current business model of the journal.

Analyzing this relationship more closely, both editors and associate editors have a statistically significant difference with respect to their publishing behaviour and their opinion on offering free articles. Those who have published in open access journals and self-archived

support offering free access to scholarly articles in the journal. Those who have not published in open access journals nor self-archived do not support offering free access to scholarly articles in the journal. However, members of the editorial board show no statistically significant difference between their publishing behaviour and their opinion on offering free articles. In other words, their publishing behaviour did not influence their opinion on offering free articles to the same extent as it did that of editors or associate editors. On the other hand, the publishing behaviour of the respondents (editors, associate editors, and members of the editorial board) did influence their opinion about self-archiving. Generally, those who publish in open access journals and self-archive support allowing authors to self-archive.

An interesting observation is that those who have published in open access journals have nearly the same opinion about self-archiving as those who have never published in open access journals or self-archived. In other words, publishing in open access journals did not influence the respondents' opinion about self-archiving to a great extent. This is very clear among members of the editorial board as shown by Figure 7 in Chapter 5.

In summary, the majority of respondents are satisfied with subscription-based journals. The respondents' satisfaction with open access journals was higher than the respondents' satisfaction with subscription-based journals. The opinion of the respondents about offering free articles and about self-archiving is generally positive. The publishing behaviour of the respondents did show a relationship with the respondents' satisfaction with the journal model and their opinion about offering free articles and self-archiving. In general, those who have published in open access journals and self-archived are not satisfied with subscription-based journals. On the other hand, those who have neither published in open access journals nor self-archived have a less positive opinion about offering free articles and self-archiving.

## 6.6 Question Four

*Have editorial boards acted as a force for change in access policies set by journal publishers (scholarly societies, commercial publishers, or university presses)?*

In this study some respondents expressed some responsibility for the journal's policies regarding offering free access to scholarly articles and self-archiving. They felt more responsible for the journal's policies regarding offering free access to scholarly articles than for those on

self-archiving. There is a statistically significant difference between editors, associate editors and members of the editorial board with regard to the responsibility they feel to influence journal policies on offering free access to scholarly articles in the journal. Editors felt most responsible for offering free access to scholarly articles and for allowing self-archiving, and members of the editorial board felt least responsible. As discussed earlier in this chapter, this is understandable because editors have more obligations and responsibilities for the journal.

There is a sense of responsibility for changing journal access policies, but editorial boards were unlikely to take strong measures to influence changes in journal policies. Most respondents of this study were very unlikely to unlikely to take strong actions such as resigning from the editorial board to influence changes in journal policies. Also, the majority were very unlikely to unlikely to launch a new open access journal in the same subject in order to influence changes in journal access policies.

However, they were likely to take less extreme actions, such as raising the issue for discussion on the editorial board. More than 75% of editorial boards (editors, associate editors and members of the editorial board) support such an action. More than half of editors were very likely to somewhat likely to negotiate the access policies with the publisher. However, members of the editorial board did not feel that they would negotiate access policies with the publisher.

In some cases universities have advised their faculty members to take actions that support affordable journal prices. For example, the University of California advised their faculty to boycott unreasonably expensive journals[53]. Also, Watkinson stated that:

> For publishers the bottom line is that if authors and editors voted with their feet, they (the publishers) would have to adopt OA or go out of business. This exodus has not happened, for only a tiny number of editors and editorial boards have thrown off an uncongenial publisher and gone elsewhere (Watkinson, 2007, p. 15).

However, these calls from universities and some scholars to editorial boards to take these actions have generally not resulted in this type of behaviour by editorial boards that lead to changes in

[53] University of California, Office of Scholarly Communication (http://osc.universityofcalifornia.edu/sustainable/influence.html) access date March 2009.

journal policies. This general inaction is reflected in the results of this study. The majority of respondents did not request changes in journal policies to offer free access to scholarly articles, nor did they request changes in journal policies to allow authors to self-archive.

Based on the data collected in this study, the cases that have been reported of editors and editorial boards resigning to protest the high subscription prices and demand that journal access policies change[54], though highly publicized when they occurred, do not represent actions that most editorial boards are likely to take. Most editorial boards have not taken strong actions to change journal policies. This indicates that editorial boards are not convinced that aggressive measures such as resigning from the editorial board and/or launching a new open access journal in the same subject are the right ways to influence such changes in journal access policies, in spite of the fact that they feel responsible for influencing journal access policies.

The majority of editorial boards did not request any changes in policy to make access to some or all articles free, nor did they request changes in policy to allow authors to self-archive. A number of possible reasons are suggested by the data:

- First, less than 18% of editorial boards are dissatisfied with the current business model of the journal and therefore they may not feel they need to request any changes.
- Second, there are a number of respondents who do not feel that they have a responsibility to influence changes to journal access policies. In fact, about 40% of the respondents do not feel they have a responsibility to influence journal policies regarding access to scholarly articles or a responsibility to influence journal policies regarding self-archiving. It should be noted that more than half of the 40% (the respondents) are members of editorial boards.

- Third, about 21% of respondents did not know if the journal offers all or some of its scholarly articles free to readers and about 47% of respondents did not know if the journal allows authors to self-archive. Therefore, if a respondent does not know the policy of the journal then he/she is perhaps not interested in the issue, or at least not likely to request changes.

[54] These cases were discussed in more detail in Chapters 1and 2.

- Fourth, the respondent's publishing behaviour does not indicate a high level of involvement in open access. For example, 58% of respondents have never published in an open access journal, and 62% have never self-archived an article. If editorial board members do not take advantage of journal policies allowing these activities, they may not feel any need to promote changes in their own journal's policies to allow them.

- Fifth, some respondents expressed significant reservations about the quality of the published work in open access and the financial aspects in their written comments. Their reservations range from concerns over the quality of open access journals to concerns over the fees that authors may pay to publish in open access. So, even if they desire change, they may not be sure that promoting open access is the right approach.

In summary, respondents expressed some responsibility for open access policies for their journal. However, that did not motivate them to take strong actions such as resigning from the editorial board to influence journal access policy changes. A number of reasons are suggested by the data. These reasons range from respondents' reservations about the financial viability of an open access model, such as open access journals, to the fact that they are satisfied with the subscription-based model for the journal.

## 6.7 Question Five

*How is the perception and promotion of open access by editors and editorial board members related to (a) their level or responsibility at the journal and (b) their open access publishing behaviour?*

Statistically significant differences between attitudes and behaviours of editors, associate editors and editorial board members were found in several areas, as discussed in the context of Research Questions One to Four. These are summarized briefly below:

- Editors demonstrated the highest awareness of journal policies on users' access to journal articles and members of the editorial demonstrated the least awareness, this difference is statistically significant. Similarly, editors demonstrated the highest awareness of journal policies on authors self-archiving and members of the editorial board demonstrated the least awareness.

- There is a difference between editors, associate editors, and members of the editorial board with regard to their opinion on offering free access to scholarly articles in the journal. Members of the editorial board are the most likely to support offering free access to scholarly articles in the journal and editors are least likely to support offering free access to scholarly articles in the journal.

- Associate editors and members of the editorial boards differ in term of their level of satisfaction and the business models of the journal. Associate editors and members of the editorial board are more satisfied with open access journals than subscription-based journals.

- Editors and associate editors who have never published in open access journals nor self-archived recorded the highest satisfaction with the business model of the journal. On the other hand, editors and associate editors who have published in open access journals and self-archived recorded the lowest satisfaction with the business model of the journal. It should be noted that the majority identified the journal model as subscription-based.

- Editors and associate editors who have published in open access journals and self-archived have a much more supportive opinion on offering free access to the scholarly articles in the journal than editors and associate editors who have never published in open access journals and never self-archived.

- Editors, associate editors, and members of editorial boards differ in term of their publishing behaviour and their opinion on allowing authors to self-archive. Those who have both published in open access journals and self-archived are more supportive of allowing authors to self-archive than those who have never published in open access journals or self-archived.

- Editors, associate editors and members of the editorial board differ with regard to the responsibility they feel to influence journal policies on offering free access to scholarly articles in the journal, the difference is statistically significant. Editors felt most responsible for offering free access to scholarly articles and for allowing self-archiving, and members of the editorial board felt least responsible.

## 6.8 The Gatekeeping Theory

Gatekeeping theory focuses on the role of the gatekeeper in selecting what will pass through the gate (Lewin 1947a, 1947b; White, 1950; Snider, 1967, Shoemaker and Vos, 2009), and the forces which act on the gatekeeper to influence the decision which is made. Editors and members of the editorial board have a responsibility to manage the peer review process, and therefore they serve as gatekeepers in determining what is published in their field (Hames, 2007; McGinty, 1998). This study examines whether the editors and members of the editorial board act as gatekeepers not only by selecting what will pass through the gate, but also by selecting the means of its transmission to its community of recipients.

The traditional role of journal editorial boards is to assess scholarly work and select what will be published. Some editors and editorial board members, as discussed in Chapters 1 and 2, have expanded this role by demanding that the published scholarly work should reach the readers without any restrictions. The design of the questionnaire for this study included a set of questions about the role of editors and members of the editorial board in promoting the dissemination of scholarly work, which is viewed as a gatekeeping function.

Although more than half of the respondents of this study have a positive opinion about making some or all articles free to readers and on allowing authors to self-archive, they are still very committed to the traditional publishing system of scholarly journals. The majority of the respondents in this study were not willing to take strong measures, such as resigning from the editorial board, to influence the journal's policies on offering free articles to the readers or on allowing authors to self-archive. Although more than half of respondents felt that they have a responsibility to influence journal policies regarding access to scholarly articles and a responsibility to influence journal policies regarding self-archiving, they indicated that they would prefer to work with the publisher in a more reasoned way. This is similar to the conclusion which Dow (2000) drew, which indicated that editorial gatekeepers, although supportive of the creation of electronic journals, were still very committed to the communication model they were familiar with, in their case, print journals.

A framework to analyze the role of editorial boards as gatekeepers in promoting change in the way journal content is accessed is provided by the five levels of gatekeeping decisions and

forces identified by Shoemaker (1991) and Shoemaker and Vos (2009). At each of these levels (individual, routine, organizational, social institution, and social system) forces act to influence the decisions made by gatekeepers. At the individual level, the respondents' demographic profiles play a role. They indicated a range of perceptions of open access arising from their own knowledge of, and experience with, open access journals. As Dow (2000) points out, the attitudes of gatekeepers at scholarly journals may account for actions for change that they initiate. Therefore, if they feel that open access is not the desirable, or the only, replacement to subscription-based journals, as was true for some respondents of this study who indicated that they are satisfied with the traditional publishing system of scholarly journals, or lacked personal experience with open access publication, they are unlikely to see it as their role to promote it. The majority of respondents expressed either some level of satisfaction, or neutrality to the current business model of their journal, which suggests that they are not strongly motivated to influence further changes to the journal's access policies. Similarly, if they see their role as primarily, and in some cases only, as assessing journal articles and selecting what is to be published, they are unlikely to promote change. However other evidence suggests that editorial boards are aware of the issues and do take action, although in less dramatic fashion.

Routines are seen by Shoemaker and Vos (2009) as a set of patterns and practices that are uniformly applied to gatekeeping decisions. In the traditional role of the editorial gatekeeper, these would include the practices by which papers are reviewed and decisions are made. To the extent that the respondents of this study feel that their role is based on a pre-established and generalized set of practices, which focuses on reviewing and deciding what will be published, change in the gatekeeper's role is unlikely. For respondents (about 88%) who did not request any changes to the journal access policies, one explanation may be that they see their job as based on the routines of traditional gatekeeping. As an example, one respondent stated "My ONLY job is to review articles, full stop".

As Shoemaker and Vos (2009) note, "organizations hire the gatekeepers and make the rules" (p. 62). At the organizational level, respondents may feel that since they were appointed to serve the organization, their role should be aligned with the publisher's values and norms, or that there are limits on the extent to which they can deviate from the role to which they were appointed. For example, some respondents in this study do not think it is appropriate or possible

to negotiate the access policies with the publisher. One respondent stated "I don't like it that the journal is not open access. But, the publisher will not consult us about that, they would just say it is their business model and we are not involved in that". The respondents' perception of their place in the organizational hierarchy (i.e. whether editor, associate editor or member of the board) influences their willingness to negotiate and/or their sense of what their responsibility is. In this study, those who hold a high level of responsibility at the journal such as editors (n=135, 64.4%) indicate that they were more likely to negotiate the access policy of the journal with the publisher than those who hold a low level of responsibility at the journal such as members of the editorial board (n=57, 29.7%),

Also at the organizational level, some respondents of this study may face a barrier based on their knowledge of economic forces and interest groups within the publishing company. For example, a number of respondents were concerned with the survival of publishers economically if all articles are available free to readers; one respondent, who was in favour of open access, stated "As long as [the] publisher does not lose money". A large percentage of the respondents (72%) were very unlikely to somewhat unlikely to go against the publisher and resign from the editorial board, which may be an indication that the respondents do not want to take strong measures and confront the publisher. It is possible that the respondents' sense of loyalty and/or responsibility to the organization inhibits them from taking strong measures, such as resigning from the editorial board; that is, that forces at the organizational level encourage them to work within, rather than outside of, the current organizational structure.

This study did not expressly examine whether the respondents saw the organization which they serve as the journal itself, or more broadly as the publisher, which would be expected to influence their response to questions about their responsibility to promote open access. Respondents who view the journal, rather than the publisher, as the organization which they serve, may be more likely to promote change in open access since the success of the journal as a medium for scholarly communication may be seen to be more important than the success of the publisher. One respondent stated:

> Support to the extent that free access does not undermine the financial viability of the journal. Journal content is a public good, privately supported. When universities and non-profit professional societies published scholarly journals, there was no

> conflict between the two goals. When commercial publishers took over the scholarly journals, an inherent conflict was set in motion and is playing out today. In the long term, it is possible that scholarly journals will go back to the societies that own them and the conflict will be muted or eradicated.

At the level of social institutions, the journal publishing system exists alongside other social institutions involved in scholarly communication, which also affect the gatekeeping process and act as a force for change which in turn influences how editorial gatekeepers respond to or promote change. These external institutions might include authors, academic institutions, libraries, markets which influence supply and demand, granting agencies which require open access publication of funded research, etc. One respondent stated:

> Because scholarly journal publishers are being FORCED to accept this model, primarily because funding agencies like those of the EU and also the Wellcome Trust, we decided to provide the 'Author Pays,' OA option to our authors at a VERY reasonable cost - less than $2,000 per article on average.

Another respondent, who was under pressure economically, stated "I am a graduate student funded through my work on this journal, I can't rock the boat".

Finally, at the level of social systems, respondents in this study may be influenced by socio-cultural factors. As (for the most part) academics, they are aware of the role of the journal in scholarly communication. They may be influenced by the ideology of the traditional publishing system and the stereotype that suggests that it has been working for more than 300 years and it should continue with no change. As an example, one respondent stated "A solid, long-time journal with a history of fairness, rigor. Generally friendly on access issues. Goal is to disseminate the work of the authors and this has worked exceptionally well for decades". The respondents' attitude toward open access in general is positive. They support offering free access to the scholarly articles in the journal and they support allowing authors to self-archive. More than a third of the respondents have published an article in an open access journal, and more than a third have self-archived an article. Their attitude toward open access in general and their own publishing behaviours with respect to open access and self-archiving are shaped by the social system of scholarly communication within which they operate.

At each of these levels respondents in this study may face barriers that deter them from extending their traditional role as gatekeepers to include influencing journal access policies, or factors that encourage them to participate in change. Findings in this study show that some respondents played an active role in influencing journal access policies, while others did not promote, or were against, change.

The editors and members of the editorial board (n=121, 37.5%) in this study were the most frequent source of the initiative that resulted in making the journal offer some or all of its articles free. Also, they were the second most frequent source of the initiative that resulted in allowing authors to self-archive (n=56, 23.8%). This indicates that editors and members of the editorial boards are active in the initiatives that led to making the journal offer some or all of its articles free and in allowing authors to self-archive, suggesting that they believe that their role is not only in assessing and selecting scholarly articles but also in making sure the published work reaches the readers with no restrictions.

Editorial board members were active in the initiatives that led to journal policy changes and were involved in these decisions. For example, they helped to formulate the journal's access policy and in some cases were asked to vote on the journal's access policy. Editors were the most involved in the above two types of activities. The majority of the members of the editorial board were involved in less direct participation with the publisher such as raising the issue for discussion in the editorial board.

All of the above are indications that journal editorial boards have to some degree extended their role beyond assessing and selecting scholarly work that will be published, to include a new role that is facilitating the communication of scholarly articles to reach the readers with no restrictions. A more detailed study that is directly tied to the theory of gatekeeping would be desirable, in order to more fully investigate the role of the editorial board.

## 6.9 Limitations of the Study

In addition to the general limitations described in Chapter 1, this study is also subject to several limitations that arise from the methodology used. For example, the fact that the data was collected by means of a questionnaire means that respondents are self-selecting and may not be

representative of the study population as a whole. Because respondents were self-reporting, the data may not be an objective representation of their opinions and behaviours.

The *Journal Citation Reports* was used as the source of scholarly journals for this study. While this ensures that the study was based on editorial representation from high quality scholarly journals, as selected by ISI on the basis of their impact factor, it does mean that the journals represented in this study have the bias toward journals in the sciences that is found in *Journal Citation Reports*.

Respondents to this study represent individual editors and editorial board members, not journals, so some journals and publishers may be under- or over-represented in the data.

## 6.10 Conclusions

The results of this study suggest that journal publishers are experimenting with open access models. Even though fewer than 9% of the respondents reported the journals as open access, about 46% of respondents indicated that their journal offers all or some of its scholarly articles free to readers. Also, about 34% of respondents indicated that their journal allows authors to self-archive. Publishers were frequently the initiators of these moves to allow greater access to journal content. Their journals, even though they are subscription based, are experimenting with open access in some form. While primarily subscription based, many of these journals were looking for ways to incorporate open access features within the subscription based model.

Respondents have reported that their awareness of the journal's policy regarding users' access to journal articles is higher than their awareness about the journal policies regarding self-archiving, and it is clear that if they do not know the journal's policies regarding free access to articles then they will not know the journal's policy on self-archiving. In fact, editorial boards as a group were relatively uninformed about journal policies on self-archiving.

More than half of the respondents are satisfied with current business model of the journal. The satisfaction of respondents with open access journals is higher than their satisfaction with subscription-based journals. The respondents' opinion about offering free access to scholarly articles and to self-archiving is in general positive. The publishing behaviour of respondents was

related to their satisfaction with the journal model and their opinion about offering free articles and self-archiving. Those who have published in open access journals and self-archived are less satisfied with subscription-based journals. Also, those who have published in open access journals and self-archived have a more positive opinion about offering free articles through the journal and about allowing authors to self-archive than those who did not publish in open access journals or self-archived. This group of editorial board members was conservative in their approach to open access publishing, with about 60% having never published in open access journals or self-archived an article.

Respondents, even though they expressed some responsibility to change journal policies, were not willing to take strong actions such as resigning from the editorial board to influence change. However, they were willing to take more moderate actions such as raising the issue for discussion in the editorial board, and editors and members of the editorial board were the most frequent source of the initiative that resulted in making the journal offer some or all of its articles free to readers. Also, only 122 respondents (17.3%) are very dissatisfied to somewhat dissatisfied with the current business model of the journal, which may indicate that respondents are satisfied with their journal and they see no necessity for change. For example, the majority of the respondents in this study did not request any changes in policy to make access to some or all articles free and did not request any changes in policy to allow authors to self-archive, which indicates that they do not see a necessity for change and they are satisfied with the current business model of the journal they serve.

Although a number of respondents expressed some responsibility to influence journal policies they did not take strong actions to change journal policies. Some editorial boards have expanded their role beyond the boundaries of traditional gatekeeping, that is, focusing not only on what should be published but also by making sure it reaches the readers. This role of editorial boards is not common. Possible explanations for the respondents' not taking strong actions to change journal policies is that they are not convinced that open access models are the proper replacement to the subscription-based journals, or their level of satisfaction with the current business model of their journal; or, they may feel that less dramatic approaches are more appropriate and/or effective.

In summary, this study provided some answers about the role of the editorial board in shaping journal policies. It showed that journal editorial boards feel that they have some responsibility to change journal policies, although they were not willing to take any strong actions to influence such change. The result of this study confirms that the publishing behaviours of the respondents have influenced their opinions on offering free access to scholarly articles and on self-archiving by authors. In general, those who published in open access journals and self-archived have more support for offering free access to scholarly articles and for allowing authors to self-archive. This means in the future if more authors who serve on editorial boards publish in open access journals and self-archive then more support could be given to open access models.

Also, the study confirms that the age and the gender of the respondents influenced their level of agreement with open access. The composition of editorial boards in this study suggest that an older, male, senior (in terms of service) population are the group who mainly run the journals and are responsible for their content. They hold more power than other editorial board members to influence change in journal policies but have been reluctant to institute these changes. In this study, younger editorial board members, and those who were female, tended to have more positive views of open access, as expressed in their levels of agreement with statements on open access. This suggests that in the future, if more younger individuals join the editorial boards of scholarly journals then more support could be given to open access models. Similarly, if more women join the editorial boards of scholarly journals, then more support may be given to open access models.

This study also shows that there are some differences between the respondents based on their level of responsibility at the journal. For example, editors were more likely to request changes in journal policies than members of the editorial board. In addition, this study indicates that some editorial boards feel a responsibility for journal policies relevant to their position on the board, and a willingness to take moderate rather than extreme measures to influence journal policies. For example, higher levels of responsibility on the journal in the traditional gatekeeping sense seem to be correlated with a great sense of responsibility for journal polices regarding the dissemination of information, suggesting an expanded role for the editor as gatekeeper. This means that those who feel more responsibility to the journal have more

conservative views on changing journal policies by taking strong actions rather than moderate measures, which suggests that they have a more traditional view of the gatekeeping role.

The editorial boards of scholarly journals are an important element in the publishing industry. They are the gatekeepers of knowledge. Their role is crucial and this study shed some light on how they view another publishing model, in this study open access. If they have a good understanding of open access and engage in discussions about open access, and publish in open access journals, their actions and behaviour in the future could be more important than ever.

## 6.11 Significance of the Study

This is the first study to provide an in-depth analysis of editors and editorial board members for major scholarly journals, considered in the context of current changes in the landscape of scholarly publishing. The study explored their opinions and behaviours with respect to open access in the context of the scholarly journals that they serve, and also examined their publishing behaviours in general. As such, this study has made a number of significant contributions:

- It has provided a profile of editors and editorial board members for major scholarly journals. While this was not the primary focus of the study, the demographic data collected from study participants provides an informative profile of the gatekeepers who manage the flow of scholarly information from manuscript to published paper.

- The study has explored the role of editors and members of the editorial board as gatekeepers. It has demonstrated that many have been involved in discussions with the publisher about journal policies on open access, and that editors and associate editors, in particular, feel that their responsibility extends to influencing these policies, indicating an extension of their role as gatekeepers.

- The study has examined editors and editorial board members in the context of their relationship with their publishers. While dramatic actions such as the resignation of entire editorial boards have been widely publicized, this study describes a group which is in general unlikely to take such actions. They are relatively satisfied with the business model of the journal, and prefer to work collaboratively with their publisher to promote

change. The study suggests that, at least as far as editors and editorial board members are concerned, movement toward open access is likely to be gradual rather than dramatic.

- The study has also examined the behaviour of editors and editorial board members as authors, that is, their own publishing behaviour, in the context of open access. Their behaviour is relatively conservative, particularly in the case of self-archiving activities, and indicates that as a group of authors, editors and editorial board members have not been leading participants in the open access movement.

- By distinguishing participants by their role on the editorial board, this study has shed light on the hierarchical nature of editorial boards, and the different ways in which editors and editorial board members interpret their roles and responsibilities.

In general, the study has provided an in-depth examination of a previously unstudied group in the context of the open access movement: editors and editorial board members. It has examined their contribution as editors, and also their behaviour as authors in contributing to open access journals, and compared these findings with those from studies which looked at the open access behaviours of other groups of authors. It has considered the attitudes and behaviours of editors and editorial board members in the context of Kewin's Theory of Gatekeeping,. This examination has led to a better understanding of this group and their potential to affect change in a journal's access policies.

## 6.12 Future Research

This study focused on the role of the editorial board with regard to offering free access to scholarly articles in the journal and in allowing authors to self-archive, considered in the context of publishers' current policies. In order to add a historical perspective on journal policies and how they have developed, a future study could focus on one type of publisher or treat a small number of journals as case studies, and examine their policies and their change over time in one detailed study.

An analysis of the range of different methods for implementing open access was beyond the scope of this study. A future study could focus on one business model of open access such as the author-pays model and study the editorial board perception of this type of model and whether

they would support it. Or, it would be possible to structure a study to assess the editorial board reaction to the full range of business models for open access, and then examine their willingness to support these models and whether they indicate a preference for one model over others.

Although there was some evidence that journals covered in this study had converted to open access while the respondent(s) from that journal were on the editorial board, a detailed analysis of the process by which that transition occurred was beyond the scope of this study. Case studies could be conducted which focused on one journal or a few journals that converted from a subscription-based to an open access model, in order to examine the role of the editorial board in the conversion process. By examining a small number of cases in depth, greater insight into the role of the editorial board and the factors which motivated it could be obtained, as well as a determination of other factors which had contributed to the change.

This study suggested that members of the editorial board, and to a lesser extent editors, had limited interaction with their publisher. Investigating the nature of the relationship between journal publishers and their editorial board could explain why many respondents in this study were not willing to negotiate the access policies with the publisher. Also, it could clarify whether editorial boards are not interested in changing the policies because of their understanding that open access is not the proper replacement to subscription-based journals or because they feel that they have no power to change such policies.

In some cases, authors and journals have been forced to move towards open access because of decisions made by parties involved in scholarly communication which necessitate changes in journal policies. An example is the decision made by some funding agencies such as NIH to require that the authors they fund publish in an open access journal (Suber, 2009). It would be valuable to know what the impact of these policies has been. How do authors change their publishing behaviour to meet the new requirement? What adaptations have been required by journal publishers? Have the changes affected authors not funded by the funding agency who publish in this field? What has the impact been on users of the published research? In general, it would be interesting to know if this has been a successful route to open access.

This study suggests that further examination of the relationship between editors and members of the editorial board is needed, and the nature of communication between them. The high level of satisfaction that participants in this study expressed with the business model of the journal suggests that they identify positively with the journal. Yet, they showed a lack of awareness of some of the journal's policies. Examining the attitudes of the editorial board and its awareness of journal policies would make an interesting study. More information on the editorial board's awareness of their journal's pricing policy, for instance, might clarify their attitude of satisfaction with the business model of the journal. This study revealed some information about editorial boards' awareness of journal policies but more information should be collected about why many respondents are not aware of their journal policies.

Although it was not the purpose of this study to provide a profile of the editorial boards of the major scholarly journals in the sciences and social sciences, the demographic data describing respondents of this study provides an interesting snapshot of editors and editorial board members who are primarily senior male academics with tenure, and who have been on the board for some time. A more extensive study is needed to examine the nature of editorial boards of major scholarly journals, and their role as gatekeepers and whether they perceive that role as extending to the dissemination of scholarly information.

## BIBLIOGRAPHY


AAUP. (2007). AAUP statement on open access. Retrieved December 2007, from http://aaupnet.org/aboutup/issues/oa/statement.pdf

AAUP. (2009). About AAUP. Retrieved October 2007, from http://aaupnet.org/news/press/keane.html

Academic Council's Special Committee on Scholarly Communication at the University of California (2005). Responding to the challenges facing scholarly communication: Scholarly societies and scholarly communication. Retrieved September 2007, from http://www.universityofcalifornia.edu/senate/committees/scsc/scholarlysocieties.scsc.0506.pdf

Addis, E., & Villa, P. (2003). The editorial boards of Italian economics journals: Women, gender, and social networking. *Feminist Economics, 9*(1), 75-91.

Albert, K. M. (2006). Open access: Implications for scholarly publishing and medical libraries. *Journal of the Medical Library Association, 94*(3), 253–262.

Allen, B., Qin, J., & Lancaster, F. W. (1994). Persuasive communities: A longitudinal analysis of references in the Philosophical Transactions of the Royal Society, 1665-1990. *Social Studies of Science, 24*(2), 279-310.

American Psychological Association (2008). APA journals internet posting guidelines. Retrieved October 2009, from www.apa.org/journals/posting.html

Antelman, K. (2006). Self-archiving practice and the influence of publisher policies in the social sciences. *Learned Publishing, 19*(2), 85-95.

Association of College and Research Libraries (2009). Integrating scholarly communication into your library. Retrieved October 2009, from http://www.acrl.ala.org/scholcomm/node/21

Atkinson, R. (2002). The crisis in scholarly communication. Retrieved May 2008, from http://www.library.cornell.edu/colldev/StatementOnCrisis.htm

Ayris, P. (2005). *Are they open yet? The impact of open access publishing on research libraries.* Paper presented at the UK Serials Group 28th Annual Conference and Exhibition, Heriot-Watt University, Edinburgh.

Ayris, P. (2006). Success and failure in scholarly communications: Where do we go from here? Retrieved November 2006, from http://www.curl.ac.uk/Presentations/AyrispresentationApril06.pdf

Bachand, R. G., & Sawallis, P. P. (2003). Accuracy in the identification of scholarly and peer-reviewed journals and the peer-reviewed process across disciplines. *The Serials Librarian, 45*(2), 39-59.

Baer, A., Saroiu, S., & Koutsky, L. A. (2002). Obtaining sensitive data through the web: An example of design and methods. *Epidemiology, 13*(6), 640-645.

Bedeian, A. G., Van Fleet, D., & Hyman III, H. (2009). Scientific achievement and editorial board membership. *Organizational Research Methods, 12*(2), 211-238.

Bergstrom, C. T., & Bergstrom, T. C. (2001). The economics of scholarly journal publishing. Retrieved May 2008, from http://octavia.zoology.washington.edu/publishing/

Berkowitz, D. (1990). Refining the gatekeeping metaphor for local television news. *Journal of Broadcasting & Electronic Media, 34*(1), 55-68.

Björk, B-C., & Hedlund, T. (2009). Two scenarios for how scholarly publishers could change their business model to open access. *Journal of Electronic Publishing, 12*(1). doi: 10.3998/3336451.0012.102

Björk, B-C. (2004). Open access to scientific publications: An analysis of the barriers to change? *Information Research, 9*(2). Retrieved April 2007, from http://informationr.net/ir/9-2/paper170.html

BOAI (2002). Budapest Open Access Initiative. Retrieved November 2007, from http://www.soros.org/openaccess/read.shtml

Bopp, R. E., & Smith., L. C. (2001). *Reference and Information Services: An Introduction* (3 ed.). Englewood, Colo: Libraries Unlimited.

Bowker (2005). *Quickguide to ulrichsweb.com*. Retrieved June 2008, from http://www.ulrichsweb.com/ulrichsweb/quickguides/pdf/QuickGuide-Ulr2005-FULL.pdf

Breed, W. (1960). Social control in the newsroom. In W. Schramm (Ed.), *Mass Communications*. Urbana, IL: University of Illinois Press.

Brodie, M. (2005). Trends and issues in academic publishing: A discussion paper. Retrieved November 2006, from http://www.copyright.mq.edu.au/pdf/TrendsAcademPub.pdf

Buchanan, S. (2005). The open access movement, scholarly communication and library services: Trends, resources and responses. Retrieved July 2007, from web.syr.edu/~slbuchan/BuchananOpenAccessPaperIST690.doc

Bullock, M. (2004). What is open access? *Psychological Science Agenda, 18*(11). Retrieved July 2007, from http://www.apa.org/science/about/psa/2004/11/open-access.aspx

Campbell, M. K., Thomson, S., Ramsay, C. R., MacLennan, G. S., & Grimshaw, J. M. (2004). Sample size calculator for cluster randomized trials. *Computers in Biology and Medicine, 34*(2), 113-125.

Carpenter, T. A., Joseph, H., & Waltham, M. (2004). A Survey of business trends at BioOne publishing partners and its implications for BioOne. *Libraries and the Academy, 4*(4), 465–484.

Carr, L., Swan, A., Sale, A., Oppenheim, C., Brody, T., Hitchcock, S, ... Harnad, S. (2006). Repositories for institutional open access: Mandated deposit policies. Retrieved May 2009, from http://eprints.ecs.soton.ac.uk/13099/2/abs77.pdf

Cassidy, W. (2006). Gatekeeping similar for online, print journalists. *Newspaper Resrach Journal, 27*(2), 6-23.

Cassidy, W. P. (2008). Outside influences: Extramedia forces and the newsworthiness conceptions of online newspaper journalists. *First Monday, 13*(1). Retrieved April 2010, from http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2051/1922

Chesler, A. (2004). Open access: A review of an emerging phenomenon. *Serials Review, 30*(4), 292-297.

Clason, D. L., & Dormody, T. J. (1994). Analyzing data measured by individual likert-type items. *Journal of Agricultural Education, 35*(4), 31-35.

Cole, L. (2004). Back to basics: What is the e-journal? *The Serials Librarian, 47*(1/2), 77-87.

Coleman, A. (2006). Self-archiving and the copyright transfer agreements of ISI-ranked library and information science journals. *Journal of the American Society for Information Science and Technology, 58*(2), 286-296.

Colman, A. M. (Ed.). (2009). *A Dictionary of psychology* (3 ed.): Oxford Reference ONLINE.

Covey, D. T. (2009). Self-archiving journal articles: A case study of faculty practice and missed opportunity. *Libraries and the Academy, 9*(2), 223-251.

Cox, J., & Cox, L. (2003). *Scholarly publishing practice: The ALPSP report on academic journal publishers' policies and practices in online publishing* (1 ed.). West Sussex: ALPSP.

Cox, J., & Cox, L. (2006). *Scholarly publishing practice: The ALPSP report on academic journal publishers' policies and practices in online publishing* (2 ed.). West Sussex: ALPSP.

Cox, J., & Cox, L. (2008). *Scholarly publishing practice: The ALPSP report on academic journal publishers' policies and practices in online publishing* (3 ed.). West Sussex: ALPSP.

Crase, D. (1992). Editors, editorial boards, and reviewers: The gatekeepers of knowledge. *Physical Educator, 49*(1), 28-32.

Crawford, B. D. (2003). Open-access publishing: Where is the value? *Lancet, 362*, 1578-1580.

Crow, R., & Goldstein, H. (2004). Guide to business planning for converting a subscription-based journal to open access 3. Retrieved July 2007, from http://www.soros.org/openaccess/oajguides/business_converting.pdf

Cummings, A. M., Witte, M. L., Bowen, W. G., Lazarus, L. O., & Ekman, R. E. (1992). University libraries and scholarly communication: A study prepared for the Andrew W Mellon Foundation. Retrieved May 2008, from http://etext.virginia.edu/subjects/mellon/

Davis, P. M. (2009). How the media frames "Open Access". *Journal of Electronic Publishing, 12*(1). doi: 10.3998/3336451.0012.101

Davis, P. M., Lewenstein, B., Simon, D., Booth, J., & Mathew, J. (2008). Open access publishing, article downloads, and citations: Randomised controlled trial. *BMJ, 337*, a568.

Donohew, L. (1967). Newspaper gatekeepers and forces in the news channel. *Public Opinion Quarterly, 31*, 61-68.

Dow, R. F. (2000). Editorial gatekeepers confronted by the electronic journal. *College & Research Libraries 61*(2), 146-154.

Drake, M. A. (2006). Interview with Bob Bovenschulte. *Searcher, 14*(4), 8-15.

Ekman, A., Dickman, P. W., Klint, A., Weiderpass, E., & Litton, J-E. (2006). Feasibility of using web-based questionnaires in large population-based epidemiological studies. *European Journal of Epidemiology, 21*, 103-111.

Flecker, D. (2001). Preserving scholarly e-journals. *D-Lib Magazine, 7*(9). doi: 10.1045/september2001-flecker

Fogarty, T. J., & Liao, C-H. (2009). Blessed are the gatekeepers: A longitudinal study of the editorial boards of *The Accounting Review*. *Issues in Accounting Education, 24*(3), 299-318.

Fosmire, M., & Yu, S. (2000). Free scholarly electronic journals: How good are they? *Issues in Science and Technology Librarianship* (27). Retrieved August 2007, from http://www.istl.org/00-summer/refereed.html

Fowler, G. L., & Smith, E. J. (1981). *An examination of the magazine gatekeeper: Can personal/professional characteristics predict editorial involvement?* Paper presented at the Meeting of the Association for Education in Journalism, East Lansing, MI.

Gauger, B. J., & Kacena, C. (2006). JSTOR usage data and what it can tell us about ourselves. *OCLC Systems & Services, 22*(1), 43-55.

Gaulé, P., & Maystre, N. (2008). Getting cited: Does open access help? Retrieved October 2009, from http://ilemt.epfl.ch/repec/pdf/cemi-workingpaper-2008-007.pdf

Gentil-Beccot, A., Mele, S., & Brooks, T. (2009). Citing and reading behaviours in high-energy physics: How a community stopped worrying about journals and learned to love repositories. Retrieved October 2009, from http://arxiv.org/ftp/arxiv/papers/0906/0906.5418.pdf

Giménez-Toledo, E., Roman-Roman, A., Perdiguero, P., & Palencia, I. (2009). The editorial boards of Spanish scholarly journals: What are they like? What should they be like? *Journal of Scholarly Publishing, 40*(3), 287-306.

Givler, P. (2002). University press publishing in the United States. In R. E. Abel & L. W. Newman (Eds.), *Scholarly publishing: Books, journals, publishers and libraries in the twentieth century* (pp. 107-120). New York: John Wiley.

Goellner, J. (1978). The future of university presses. *Library Journal, 103*(16), 1695-1699.

Goodman, D. (2004). The criteria for open access. *Serials Review, 30*(4), 258-270.

Gordon, A. (2002). SurveyMonkey.com—Web-based survey and evaluation system. *The Internet and Higher Education, 5*(1), 83-87.

Gosling, S. D., Vazire, S., Srivastava., S., & John, O. P. (2004). Should we trust web-based studies? A comparative analysis of six preconceptions about internet questionnaires. *American Psychologist, 59*(2), 93-104.

Grimes, M., & Morris, S. E. (2006). Is accuracy everything? A study of two serials directories. *Reference & User Services Quarterly, 46*(2), 45-49.

Guedon, J-C. (2004). The green and gold roads to open access: The case for mixing and matching. *Serials Review, 30*(4), 315-328.

Gustad, J. W. (1951). Changes in social attitudes and behavior: A review of the literature. *Educational and Psychological Measurement, 11*(1), 87-102.

Guterman, L. (2004). The promise and peril of 'Open Access'. *The Chronicle of Higher Education, 50*(21).

Hajjem, C., Harnad, S., & Gingras, Y. (2005). Ten-year cross-disciplinary comparison of the growth of open access and how it increases research citation impact. *IEEE Data Engineering Bulletin, 28*(4), 39-47.

Halliday, L. (2001). Scholarly communication, scholarly publication and the status of emerging formats. *Information Research, 6*(4). Retrieved May 2006, from http://informationr.net/ir/6-4/paper111.html

Hames, I. (2007). *Peer review and manuscript management in scientific journals: Guidelines for good practice*. MA, USA: Blackwell Publishing.

Hardy, R., & Oppenheim, C. (2004). Research on university presses: An overview of UK university presses. *Publishing Research Quarterly, 20*(2), 18-31.

Harnad, S. (1996). Implementing peer review on the net: Scientific quality control in scholarly electronic journals. In R. Peek & G. Newby (Eds.), *Scholarly Publication: The Electronic Frontier.* (pp. 103-108.). Cambridge MA: MIT Press.

Harnad, S. (2001). Research access, impact and assessment. *Times Higher Education Supplement, 1487*. Retrieved December 2006, from http://users.ecs.soton.ac.uk/harnad/Tp/thes1.html

Harnad, S. (2003). Open access to peer-reviewed research through author/institution self-archiving: Maximizing research impact by maximizing online access. *Journal of Postgraduate Medicine, 49*, 337-342.

Harnad, S., & Brody, T. (2004). Comparing the impact of open access (OA) vs. non-OA articles in the same journals. *D-Lib Magazine, 10*(6). doi: 10.1045/june2004-harnad

Harnad, S., Brody, T., Vallieres, F., Carr, L., Hitchcock, S., Gingras, Y., ... Hilf, E. (2004). The access/impact problem and the green and gold roads to open access. *Serials Review, 30*(4), 310-314.

Harnad, S., Carr, L., & Brody, T. (2001). How and why to free all refereed research from access and impact barriers online, now. *High Energy Physics Libraries Webzine*(4). Retrieved March 2007, from http://cogprints.org/1640/0/science.htm

Harter, S. P. (1996). The impact of electronic journals on scholarly communication: A citation analysis. *The Public-Access Computer Systems Review, 7*(5), 5-34.

Haynes, A. (2006). On commissioning editors. *Journal of Scholarly Publishing, 37*(4), 237-250.

Harter, S. P., & Kim, H. J. (1996). Electronic journals and scholarly communication: A citation and reference study. *Information Research, 2*(1). Retrieved March 2007, from http://informationr.net/ir/2-1/paper9a.html

Hitchcock, S. (2009). The effect of open access and downloads ('hits') on citation impact: A bibliography of studies. Retrieved November 2009, from http://opcit.eprints.org/oacitation-biblio.html

Hitchcock, S., Bergmark, D., Brody, T., Gutteridge, C., Carr, L., Hall, W., ... Harnad, S. (2002). Open citation linking the way forward. *D-Lib Magazine, 8*(10). doi: 10.1045/october2002-hitchcock

Hoorn, E., & Graaf, M. (2006). Copyright issues in open access research journals: The authors' perspective. *D-Lib Magazine, 12*(2). doi:10.1045/february2006-vandergraaf

Horwood, L., & Sullivan, S. (2005). The open access model of research publishing. Paper presented at Information Online 2005, Sydney. Retrieved July 2007, from http://conferences.alia.org.au/online2005/papers/b13.pdf

Houghton, J., & Vickery, G. (2005). Digital broadband content: Scientific publishing. Report presented to the Working Party on the Information Economy in December 2004. Retrieved January 2008, from http://www.oecd.org/dataoecd/42/12/35393145.pdf

Hunter, K. (2004). Open Access: Yes, no, maybe. In Nature Web Focus: Access to the Literature. Retrieved May 2008, from http://www.nature.com/nature/focus/accessdebate/3.html

Jamieson, S. (2004). Likert scales: How to (ab)use them. *Medical Education, 38*, 1212–1218.

Johnson, R. K. (2004). Open access: Unlocking the value of scientific research. *Journal of Library Administration, 42*(2), 107-124.

JSTOR. (2010). Broadening access. Retrieved April 2010, from http://www.jstor.org/page/info/about/programs/access.jsp?cookieSet=1

Katz, W. A. (2002). *Introduction to reference work: Basic information services* (8 ed. Vol. 1). Boston: McGraw-Hill.

Kaufman-Wills Group (2005). The facts about open access: A study of the financial and non-financial effects of alternative business models on scholarly journals. Retrieved July 2007, from http://www.alpsp.org/publications/FAOAcompleteREV.pdf

Kim, J-H. (2008). *Faculty self-archiving behavior: Factors affecting the decision to self-archive.* Doctoral dissertation, The University of Michigan, Michigan, USA. Available from ProQuest Dissertations and Theses database. (UMI No. 3343115).

King, D. W., & Tenopir, C. (1998). *Economic cost models of scientific scholarly journals.* Paper presented at the ICSU Workshop, University of Oxford.

King, D. W., & Tenopir, C. (1999). Evolving journal costs: Implications for publishers, libraries and readers. *Learned Publishing, 12*(4), 251-258.

King, D. W., & Tenopir, C. (2000). *Scholarly journal and digital database pricing: Threat or opportunity?* Paper presented at the Economics and Usage of Digital Library Collections Conference, Ann Arbor, Michigan.

Kling, R., & McKim, G. (1998). The Shaping of electronic media in supporting scientific communication: The contribution of social informatics. Paper presented at the European Science and Technology Forum: Electronic Communication and Research in Europe, Darmstadt/Seeheim, Germany. Retrieved January 2008, from http://rkcsi.indiana.edu/archive/kling/pubs/seeheim.htm

Kling, R., & McKim, G. (1999). Scholarly communication and the continuum of electronic publishing. *Journal of the American Society for Information Science, 50*(10), 890-906.

Kling, R., & McKim, G. (2000). Not just a matter of time: Field differences and the shaping of electronic media in supporting scientific communication. *Journal of the American Society for Information Science, 51*(14), 1306 - 1320.

Kousha, K., & Abdoli, M. (2009). *The citation impact of open access agricultural research: A comparison between OA and non-OA publications.* Paper presented at the World Library and Information Congress: 75th IFLA General Conference and Assembly, Milan, Italy.

Kurtz, M., Eichhorn, G., Accomazzi, A., Grant, C. , Demleitner, M., Murray, S. (2004). Worldwide use and impact of the NASA astrophysics data system digital library. *Journal of the American Society for Information Science and Technology, 56*(1), 36-45.

Kwasik, H., & Fulda, P. O. (2005). Open access and scholarly communication: A selection of key web sites. *Issues in Science and Technology Librarianship.* Retrieved December 2007, from http://www.istl.org/05-summer/internet.html

Lamb, C. (2004). Open access publishing models: Opportunity or threat to scholarly and academic publishers? *Learned Publishing, 17*(2), 143-150.

Lawrence, S. (2001). Online or invisible? *Nature, 411*(6837), 521.

Leece, P., Bhandari, M., Sprague, S., Swiontkowski, M. F., Schemitsch, E. H., Tornetta, P., … Guyatt, G. (2004). Internet versus mailed questionnaires: A randomized comparison (2). *Journal of Medical Internet Research, 6*(3), e29.

Leeflang, K. (1997). *The role of the commercial publisher.* Paper presented at the Financing Biotechnology Databases Workshop, Purmerend, Netherlands.

Leslie, L. Z. (1992). Peering over the editor's shoulder. *Scholarly Publishing, 23*, 185-193.

Lewin, K. (1947a). Frontiers in group dynamics: Concept, method and reality in science social equilibria and social change. *Human Relations, 1*(1), 5-40.

Lewin, K. (1947b). Frontiers in group dynamics: II. Channels of group life; social planning and action research. *Human Relations*, *1*(2), 143-153.

Lewin, K. (1951). *Field theory in social science.* D. Cartwright (Ed.). New York: Harper and Brothers.

Lindsey, D. (1976). Distinction, achievement, and editorial board membership. *American Psychologist, 31*, 799-804.

Llewellyn, R. D., Pellack, L. J., & Shonrock, D. D. (2002). The use of electronic only journals in scientific research. *Issues in Science and Technology Librarianship*(35). Retrieved July 2007, from http://www.istl.org/02-summer/refereed.html.

Lock, C. (2004). Open access and the future of scientific publishing. *Science Editor, 27*(4), 22-23.

Lubke, G. H., & Muthen, B. O. (2004). Applying multigroup confirmatory factor models for continuous outcomes to Likert scale data complicates meaningful group comparisons. *Structural Equation Modeling, 11*(4), 514–534.

Lynch, C. A. (2003). Institutional repositories: Essential infrastructure for scholarship in the digital age. *ARL, 226*, 1-7.

Lynch, C. A., & Lippincott, J. K. (2005). Institutional repository deployment in the United States as of early 2005. *D-Lib Magazine, 11*(9). doi: 10.1045/september2005-lynch

Manfreda, K. L., Batagelj, Z., & Vehovar, V. (2002). Design of web survey questionnaires: Three basic experiments. *Journal of Computer-Mediated Communication, 7*(3). Retrieved May 2007, from http://jcmc.indiana.edu/vol7/issue3/vehovar.html

Maniatis, P., Roussopoulos, M., Giuli, T. J., Rosenthal, D., & Baker, M. (2005). The LOCKSS peer-to-peer digital preservation system. *ACM Transactions on Computer Systems, 23*(1), 2-50.

Marra, R. M., & Bogue, B. (2006). *A Critical assessment of online survey tools.* Paper presented at the WEPAN Conference, Pittsburgh, Pennsylvania.

McCabe, M. (1998). The impact of publisher mergers on journal prices: A preliminary report. *ARL: A Bimonthly Newsletter of Research Library Issues and Actions* (200), 3-7.

McGinty, S. (1998). *Guardians at the gate: Scholarly journal editors in a time of change.* Doctoral dissertation, Boston College, Boston, USA. Available from ProQuest Dissertations and Theses database. (UMI No. 9828013).

Meadows, A. J. (1974). *Communication in science.* London : Butterworths

Morris, S. (2003). Open publishing: How publishers are reacting. *Information Services & Use, 23*, 99-101.

Mulligan, A. (2005). Is peer review in crisis? *Oral Oncology, 41*, 135-141.

Naile, T. (2006). *Editor preferences for the use of scientific information in livestock publications.* Masters Thesis, Oklahoma State University. Available from ProQuest Dissertations and Theses database. (UMI No. 1433611).

Naisbitt, J. (1982). *Megatrends: Ten new directions transforming our lives*. New York: Warner Books.

Newmark, P. (2003). Peer review and the rewards of open access. *Nature, 422*(17). doi:10.1038/422661b

Nisonger, T. (2002). The relationship between international editorial board composition and citation measures in political science, business, and genetics journals. *Scientometrics, 54*(2), 257-268.

Noruzi, A. (2005). Google scholar: The new generation of citation indexes. *Libri, 55*(4), 170-180.

Oder, N., Albanese, A., & Lau-Whelan, D. (2009). Open access approved at MIT, OSU, Harvard's k-school. *Library Journal, 134*(7), 12.

Odlyzko, A. (1998). The economics of electronic publishing. *Journal of Electronic Publishing, 4*(1). doi: 10.3998/3336451.0004.106

Odlyzko, A. (2002). The rapid evolution of scholarly communication. *Learned Publishing, 15*(1), 7-19.

Odlyzko, A. M. (1995). Tragic loss or good riddance? The impending demise of traditional scholarly journals. *International Journal of Human-Computer Studies, 42*(1), 71-122.

Open Access Directory (2009). Journal declarations of independence. Retrieved Sep 2009, from http://oad.simmons.edu/oadwiki/Journal_declarations_of_independence

Open Access Now (2007). Retrieved October 2007, from http://www.biomedcentral.com/openaccess/www/?issue=old

Open Access Now (2004). Retrieved October 2009, from http://www.biomedcentral.com/openaccess/news/?issue=19

Park, J-H. (2007). *Factors influencing the adoption of open access publishing.* Doctoral Dissertation, Syracuse University, Syracuse, NY. Available from ProQuest Dissertations and Theses database. (UMI No. 3266312).

Pearson, C. H., Mullen, R. W., Thomason, W. E., & Phillips, S. B. (2006). Associate editor's role in helping authors and upholding journal standards. *Agronomy Journal, 98*, 417–422.

Peek, R. (2004). Elsevier allows open access self-archiving. Retrieved Oct 2009, from http://newsbreaks.infotoday.com/nbreader.asp?ArticleID=16436

Perneger, T. V. (2004). Relation between online "hit counts" and subsequent citations: Prospective study of research papers in the BMJ. *BMJ, 329*, 546-547.

Peterson, R. A. (2000). *Constructing effective questionnaires* (1st ed.). Thousand Oaks: Sage Publications Inc.

Pettit, F. A. (2002). A comparison of World-Wide Web and paper-and-pencil personality questionnaires. *Behavior Research Methods, Instruments, & Computers, 43*(1), 50-54.

Pinfield, S. (2004). A mandate to self archive? The role of open access institutional repositories. *Serials 18*(1), 30-34.

Pinfield, S., & James, H. (2003). The digital preservation of e-prints. *D-Lib Magazine, 9*(9). doi: 10.1045/september2003-pinfield

Pitman, J. (2004). A strategy for open access to society publications. Retrieved July 2007, from http://stat-www.berkeley.edu/users/pitman/strategy.htmlg

Popkin, R. H. (1990). The scholarly communication process in the humanities: The role of the editor. *The Serials Librarian, 17*(3/4), 25-32.

Presser, S., Rothgeb, J. M., Couper, M. P., Lessler, J. T., Martin, E., Martin, J., et al. (2004). *Methods for testing and evaluating survey questionnaires*. Hoboken, NJ: John Wiley & Sons.

Prosser, D. C. (2003). From here to there: A proposed mechanism for transforming journals from closed to open access. *Learned Publishing, 16*(3), 163-166.

Prosser, D. C. (2004). The view from Europe: Creating international change. *College & Research Libraries News, 65*(5). Retrieved June 2006, from http://ala.org/ala/mgrps/divs/acrl/publications/crlnews/2004/may/viewEurope.cfm

Regazzi, J. (2004). The shifting sands of open access publishing, a publisher's view. *Serials Review, 30*(4), 275-280.

Reich, V., & Rosenthal, D. (2004). Preserving today's scientific record for tomorrow. *BMJ, 328*, 61-62.

Reich, V., & Rosenthal, D. S. H. (2001). LOCKSS: A permanent web publishing and access system. *D-Lib Magazine, 7*(6). doi: 10.1045/june2001-reich

Resh, V. H. (1998). Science and communication: An author/editor/user's perspective on the transition from paper to electronic publishing. *Issues in Science & Technology Librarianship*(19), 1-7.

Roberts, G. A., Gerrard-Morris, A., Zanger, D., Kim S. Davis, & Robinson, D. H. (2006). Trends in female authorships, editorial board memberships, and editorships in school psychology journals from 1991–2004. *The School Psychologist, 60*, 5-10.

Robinson, A. (2006). Open access: The view of a commercial publisher. *Journal of Thrombosis and Haemostasis, 4*, 1454–1460.

Rowland, F., Swan, A., Needham, P., Probets, S., Muir, A., Oppenheim, C., … Hardy, R. (2004). Delivery, management, and access model for e-prints and open access journals. *Serials Review, 30*(4), 298-303.

Rowlands, I., Nicholas, D., & Huntingdon, P. (2004). Scholarly communication in the digital environment: What do authors want? Findings of an international survey of author opinion. Retrieved September 2009, from http://www.ucl.ac.uk/ciber/ciber-pa-report.pdf

Sadeh, T. (2006). Google Scholar versus metasearch systems. *High Energy Physics Libraries Webzine*(12). Retrieved August 2006, from http://library.web.cern.ch/library/Webzine/12/papers/1/

SAGE (2008). Meeting the challenges: Societies and scholarly communication. Retrieved October 2009, from http://www.uk.sagepub.com/repository/binaries/pdf/Meeting-the-challenges.pdf

Sale, A. (2006). Comparison of IR content policies in Australia. *First Monday, 11*(4). Retrieved July 2007, from http://131.193.153.231/www/issues/issue11_4/sale/

Schlimgen, J. B., & Kronenfeld, M. R. (2004). Update on inflation of journal prices: Brandon/Hill list journals and the scientific, technical, and medical publishing market. *Journal of the Medical Library Association, 92*(3), 307-314.

Schonfeld, R. C. (2003). *JSTOR: History*. New Jersey: Princeton University Press.

Schroter, S., Tite, L., & Smith, R. (2005). Perceptions of open access publishing: Interviews with journal authors. *BMJ, 330*, 756-759.

Seeds, R. S. (2002). Impact of a digital archive (JSTOR) on print collection use. *Collection Building, 21*(3), 120-122.

SHERPA. (2006a). RoMEO colours. Retrieved December 2007, from http://www.sherpa.ac.uk/romeoinfo.html#colours

SHERPA. (2006b). About SHERPA. Retrieved December 2007, from http://www.sherpa.ac.uk/about.html

Shoemaker, P. J., & Vos, T. (2009). *Gatekeeping theory*. United Kingdom: Routledge.

Shoemaker, P. J. (1991). *Gatekeeping: Communication concepts 3*. Newbury Park, Ca: Sage.

Silberman, M. L. (2002). *The Consultant's big book of reproducible surveys and questionnaires: 50 instruments to help you assess and diagnose client needs*. New York: McGraw-Hill Professional.

Skinner, C. H., Robinson, S. L., Brown, C. S., & Cates, G. L. (1999). Female publication patterns in *School Psychology Review, Journal of School Psychology*, and *School Psychology Quarterly* from 1985-1994. *School Psychology Review, 28*, 76-83.

Snider, P. B. (1967). Mr.Gates; Revisited: A 1966 version of the 1949 case study. *Journalism Quarterly, 44*(3), 419-427.

Sotudeh, H., & Horri, A. (2007). Tracking open access journals evolution: Some considerations in open access data collection validation. *Journal of the American Society for Information Science and Technology, 58*(11), 1578–1585.

Stanford University Library (2007). Things you can do to make a difference. Retrieved September 2009, from http://www-sul.stanford.edu/scholarly_com/you.html

Suber, P. (2002). Open access to the scientific journal literature. *Journal of Biology, 1*(1). doi: 10.1186/1475-4924-1-3

Suber, P. (2006a). Lists related to the open access movement. Retrieved October 2007, from http://www.earlham.edu/~peters/fos/lists.htm

Suber, P. (2006b). Open access overview: Focusing on open access to peer-reviewed research articles and their preprints. Retrieved November 2006, from http://www.earlham.edu/~peters/fos/overview.htm

Suber, P. (2007). Open access news: News from the open access movement. Retrieved November 2007, from http://www.earlham.edu/~peters/fos/2007_02_18_fosblogarchive.html

Suber, P. (2009). Open access in 2008. *Journal of Electronic Publishing, 12*(1). doi: 10.3998/3336451.0012.104

Swan, A., & Brown, S. (2004). Authors and open access publishing. *Learned Publishing, 17*(3), 219-224.

Swan, A., & Brown, S. (2005). Open access self-archiving: An author study. Technical Report, External Collaborators, Key Perspectives Inc. Retrieved July 2006, from http://www.jisc.ac.uk/uploaded_documents/Open%20Access%20Self%20Archiving-an%20author%20study.pdf

Tagler, J. (2005). Alternative scholarly publishing: A commercial publisher's perspective. *Serials Librarian, 48*(1/2), 85-99.

Tamber, P. S., Godlee, F., & Newmark, P. (2003). Open access to peer-reviewed research: Making it happen. *Lancet, 362*, 1575-1577.

Taylor and Francis (2008). About iOpenAccess. Retrieved November 2009, from http://www.tandf.co.uk/journals/iopenaccess.asp

Teghtsconian, M. (1974). Distribution by sex of authors and editors of psychological journals, 1970-1972: Are there enough women editors? *American Psychologist, 29*, 262-269.

Teijlingen, E. R. v., & Hundley, V. (2001). The importance of pilot studies. *Social Research Update* (35). Retrieved May 2007, from http://sru.soc.surrey.ac.uk/SRU35.html

Tenopir, C., & King, D. W. (2000). *Towards electronic journals: Realities for scientists, librarians, and publishers*. Washington, DC: Special Libraries Association.

Thompson, I. K., & Rothschild, J. M. (1995). Stories of three editors: A qualitative study of editing in the workplace. *Journal of Business and Technical Communication, 9*, 139-169.

Thomson Reuters (2009). The Thomson Reuters Impact Factor. Retrieved October 2009, from http://thomsonreuters.com/products_services/science/free/essays/impact_factor/

Thorin, S. E. (2003, August 11-24, 2003). *Global changes in scholarly communication.* Paper presented at the e-Workshops on Scholarly Communication in the Digital Era, Feng Chia University, Taichung, Taiwan.

Town, B. (2001). Do science publishers still have a role? Retrieved May 2008, from http://www.computing.co.uk/information-world-review/news/2083421/science-publishers-role

Truell, A. D., Bartlett II, J. E., & Alexander, M. W. (2002). Response rate, speed, and completeness: A comparison of Internet-based and mail surveys. *Behavior Research Methods, Instruments, & Computers, 34*(1), 46-49.

UC Berkeley Library (2008). What you can do: Wield your influence. Retrieved September 2009, from http://www.lib.berkeley.edu/scholarlycommunication/wield_your_influence.html

Van Orsdel, L. C., & Born, K. (2003). Big chill on the big deal? *Library Journal, 128*(7), 51-56.

Van Orsdel, L. C., & Born, K. (2008). Periodicals price survey 2008: Embracing openness. *Library Journal*(7). Retrieved October 2009, from http://www.libraryjournal.com/article/CA6547086.html

Van Orsdel, L. C., & Born, K. (2009). Reality bites: Periodicals price survey 2009. *Library Journal*(7). Retrieved October 2009, from http://www.libraryjournal.com/article/CA6651248.html

Velterop, J. (2003). Should scholarly societies embrace open access (or is it the kiss of death)? *Learned Publishing, 16*(3), 167-169.

Velterop, J. (2005). Open access publishing and scholarly societies: A guide. Retrieved July 2007, from http://www.soros.org/openaccess/scholarly_guide.shtml

Walker, T. J. (1998). Free internet access to traditional journals. *American Scientist Online, 86*(5), 463.

Watkinson, A. (2007). Open access: A publisher's view. *Logos, 17*(1), 12-21.

Weeks, R. A., & Kinser, D. L. (1994). *Editing the refereed scientific journal: Practical, political and ethical issues.* New York: IEEE Press.

Wellcome Trust. (2004). Costs and business models in scientific research publishing. Report commissioned by the Wellcome Trust. Retrieved July 2007, from http://www.wellcome.ac.uk/assets/wtd003184.pdf

Weller, A. C. (1991). Potential bias in editorial peer review: A study of U.S. medical journals. *Serials Librarian, 19*(3/4), 95-103.

Wells, A. (1999). Exploring the development of the independent, electronic, scholarly journal. Retrieved July 2007, from http://panizzi.shef.ac.uk/elecdiss/edl0001/ch0200.html

Westrienen, G. v., & Lynch, C. A. (2005). Academic institutional repositories deployment status in 13 nations as of mid 2005. *D-Lib Magazine, 11*(9). doi: 10.1045/september2005-westrienen

White, D. M. (1964). The 'Gatekeeper': A case study in the selection of news. In L. A. Dexter & D. M. White (Eds.), *People, society and mass communications.* London: Collier-Macmillan.

White, D. W. (1950). The gatekeeper: A case study in the selection of news. *Journalism Quarterly, 27*, 383-390.

Wiley (2009). Wiley-Blackwell and open access. Retrieved September 2009, from http://www3.interscience.wiley.com/aboutus/open_access_options.html?site=1

Willinsky, J. (2003). Scholarly associations and the economic viability of open access publishing. *Journal of Digital Information, 4*(2). Retrieved July 2007, from http://journals.tdl.org/jodi/article/view/104/103

Willinsky, J. (2006). *The access principle: The case for open access to research and scholarship*. Cambridge, Mass: MIT Press.

Willinsky, J., & Wolfson, L. (2001). The indexing of scholarly journals: A tipping point for publishing reform? *The Journal of Electronic Publishing, 7*(2). doi: 10.3998/3336451.0007.202

Wyly, B. J. (1998). Competition in scholarly publishing? What publisher profits reveal. Retrieved May 2008, from http://www.arl.org/newsltr/200/wyly.html

Xia, J. (2007). Assessment of self-archiving in institutional repositories: Across disciplines. *The Journal of Academic Librarianship, 33*(6), 647-654.

Zsindely, S., Schubert, A., & Braun, T. (1982). Citation patterns of editorial gatekeepers in international chemistry journals. *Scientometrics, 4*, 69-76.

# APPENDICES

## Appendix A: Initial Invitation Letter

Dear (First Name, Last Name) at the journal "Journal Title":

As a PhD candidate at the School of Library, Archival and Information Studies in the University of British Columbia, I am undertaking a study, "The Editorial Role in Access Policies to Scholarly Articles and Self-Archiving", that examines the influence of editors and editorial boards on the access policies of the journals which they serve. You will be asked to share your views and experience about open access as reflected in journal policies, by completing a brief questionnaire. The results of the study will be published in the journal literature, and may prove useful in guiding editors and editorial boards in their interaction with publishers.

In this study, open access means that a reader can access a scholarly article with the option to read, download, copy, distribute, and print 'the article' with no financial obligations. Two models for open access are common. In the first model, an author publishes his/her work in an open access journal in which the publisher makes their work freely accessible online upon publication (this is commonly referred to as the Gold Road to open access). In the second model, an author can choose to self-archive a copy of his/her work in an institutional repository, subject-based repository or personal website that is freely accessible to all (this is commonly referred to as the Green Road to open access).

You have been selected to participate in this study on the basis of your role as an editor or an editorial board member for the scholarly journal named above. The questionnaire should take about 10 to 15 minutes to complete.

Your name will not be associated in any way with your response to the questionnaire. You will not be asked to identify yourself, the journal title, or the publisher. All data and documents related to the study will be confidential, and kept in a locked filing cabinet. The results of the study will not identify journals by title, and for analysis, journals will be aggregated by type and general subject area.

In completing this questionnaire, you should be aware that it is hosted by a websurvey company located in the USA, and as such is subject to US laws, in particular, those which allow authorities access to the records of internet service providers. However, this questionnaire does not ask for any information which may be used to identify you and no connection is made between the information you submit and any log files. The privacy policy of the websurvey company is available at http://www.surveymonkey.com/monkey_privacy.aspx.

Participation in this study is voluntary. To participate please follow the link:

**http://www.surveymonkey.com/s.aspx?sm=wwyJSwdjGpDh5IgUAI_2fA7g_3d_3d**

By completing the questionnaire, you are consenting to participate in this study.

Your response and participation is important and appreciated. If you have any questions about the study please contact me at [email address]

***Saad Alzahrani***
PhD candidate
School of Library, Archival and Information Studies
University of British Columbia
The Irving K. Barber Learning Centre
Suite 470, 1961 East Mall
Vancouver, British Columbia
Canada, V6T-1Z1

Principal Investigator:
***Edie Rasmussen***, Professor
School of Library, Archival and Information Studies
University of British Columbia
Tel: (604) 822-5939

## Appendix B: Invitation Letter (First Reminder)

Dear (First Name, Last Name) at the journal "Journal Title":

If you have already participated in this study, thank you! If not, please read on:

As a PhD candidate at the School of Library, Archival and Information Studies in the University of British Columbia, I am undertaking a study, "The Editorial Role in Access Policies to Scholarly Articles and Self-Archiving", that examines the influence of editors and editorial boards on the access policies of the journals which they serve. You will be asked to share your views and experience about open access as reflected in journal policies, by completing a brief questionnaire. The results of the study will be published in the journal literature, and may prove useful in guiding editors and editorial boards in their interaction with publishers.

In this study, open access means that a reader can access a scholarly article with the option to read, download, copy, distribute, and print 'the article' with no financial obligations. Two models for open access are common. In the first model, an author publishes his/her work in an open access journal in which the publisher makes their work freely accessible online upon publication (this is commonly referred to as the Gold Road to open access). In the second model, an author can choose to self-archive a copy of his/her work in an institutional repository, subject-based repository or personal website that is freely accessible to all (this is commonly referred to as the Green Road to open access).

You have been selected to participate in this study on the basis of your role as an editor or an editorial board member for the scholarly journal named above. The questionnaire should take about 10 to 15 minutes to complete.

Your name will not be associated in any way with your response to the questionnaire. You will not be asked to identify yourself, the journal title, or the publisher. All data and documents related to the study will be confidential, and kept in a locked filing cabinet. The results of the study will not identify journals by title, and for analysis, journals will be aggregated by type and general subject area.

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Participation in this study is voluntary. To participate please follow the link:

**http://www.surveymonkey.com/s.aspx?sm=wwyJSwdjGpDh5IgUAI_2fA7g_3d_3d**

By completing the questionnaire, you are consenting to participate in this study.

Your response and participation is important and appreciated. If you have any questions about the study please contact me at [email address]

***Saad Alzahrani***
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## Appendix C: Invitation Letter (Second Reminder)

Dear (First Name, Last Name) at the journal "Journal Title":

If you have already completed the survey, thank you for your participation, and we apologize for contacting you again. If you have not yet completed it, please consider doing so. No further reminders will be sent regarding this questionnaire.

As a PhD candidate at the School of Library, Archival and Information Studies in the University of British Columbia, I am undertaking a study, "The Editorial Role in Access Policies to Scholarly Articles and Self-Archiving", that examines the influence of editors and editorial boards on the access policies of the journals which they serve. You will be asked to share your views and experience about open access as reflected in journal policies, by completing a brief questionnaire. The results of the study will be published in the journal literature, and may prove useful in guiding editors and editorial boards in their interaction with publishers.

In this study, open access means that a reader can access a scholarly article with the option to read, download, copy, distribute, and print 'the article' with no financial obligations. Two models for open access are common. In the first model, an author publishes his/her work in an open access journal in which the publisher makes their work freely accessible online upon publication (this is commonly referred to as the Gold Road to open access). In the second model, an author can choose to self-archive a copy of his/her work in an institutional repository, subject-based repository or personal website that is freely accessible to all (this is commonly referred to as the Green Road to open access).

You have been selected to participate in this study on the basis of your role as an editor or an editorial board member for the scholarly journal named above. The questionnaire should take about 10 to 15 minutes to complete.

Your name will not be associated in any way with your response to the questionnaire. You will not be asked to identify yourself, the journal title, or the publisher. All data and documents related to the study will be confidential, and kept in a locked filing cabinet. The results of the study will not identify journals by title, and for analysis, journals will be aggregated by type and general subject area.

In completing this questionnaire, you should be aware that it is hosted by a websurvey company located in the USA, and as such is subject to US laws, in particular, those which allow authorities access to the records of internet service providers. However, this questionnaire does not ask for any information which may be used to identify you and no connection is made between the information you submit and any log files. The privacy policy of the websurvey company is

available at http://www.surveymonkey.com/monkey_privacy.aspx.

Participation in this study is voluntary. To participate please follow the link:

**http://www.surveymonkey.com/s.aspx?sm=wwyJSwdjGpDh5IgUAI_2fA7g_3d_3d**

By completing the questionnaire, you are consenting to participate in this study.

Your response and participation is important and appreciated. If you have any questions about the study please contact me at [email address]

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Principal Investigator:
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University of British Columbia
Tel: (604) 822-5939

## Appendix D: Behavioural Research Ethics Board – Approval Certificate

*The University of British Columbia*
*Office of Research Services*
***Behavioural Research Ethics Board***
*Suite 102, 6190 Agronomy Road, Vancouver, B.C. V6T 1Z3*

# CERTIFICATE OF APPROVAL - FULL BOARD

| PRINCIPAL INVESTIGATOR: | INSTITUTION / DEPARTMENT: | UBC BREB NUMBER: |
|---|---|---|
| Edie Rasmussen | UBC/Arts/Library, Archival & Information Studies | H08-01945 |

**INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT:**

| Institution | Site |
|---|---|
| UBC | Vancouver (excludes UBC Hospital) |

**Other locations where the research will be conducted:**
Data will be collected by web survey (SurveyMonkey) from international subjects.

**CO-INVESTIGATOR(S):**
Saad Alzahrani

**SPONSORING AGENCIES:**
N/A

**PROJECT TITLE:**
The Role of Gatekeepers on the Green and the Gold Road to Open Access

| REB MEETING DATE: | CERTIFICATE EXPIRY DATE: |
|---|---|
| **October 23, 2008** | **October 23, 2009** |

**DOCUMENTS INCLUDED IN THIS APPROVAL:** **DATE APPROVED: November 7, 2008**

| Document Name | Version | Date |
|---|---|---|
| **Protocol:** | | |
| Proposal | N/A | October 27, 2008 |
| **Questionnaire, Questionnaire Cover Letter, Tests:** | | |
| Invitation Letter | N/A | October 30, 2008 |
| Questionnaire | N/A | October 7, 2008 |

The application for ethical review and the document(s) listed above have been reviewed and the procedures were found to be acceptable on ethical grounds for research involving human subjects.

***Approval is issued on behalf of the Behavioural Research Ethics Board and signed electronically by one of the following:***

Dr. M. Judith Lynam, Chair
Dr. Ken Craig, Chair
Dr. Jim Rupert, Associate Chair
Dr. Laurie Ford, Associate Chair
Dr. Daniel Salhani, Associate Chair
Dr. Anita Ho, Associate Chair

## Appendix E: Questionnaire

**The Editorial Role in Access Policies to Scholarly Articles and Self-Archiving**

**1. Introduction**

Please complete this questionnaire based on your experience with the journal *that was specified in the e-mail request that you received*.

Please keep this definition of **Open Access** in mind when completing this questionnaire: In this study, open access means that a reader can access a scholarly article with the option to read, download, copy, distribute, and print 'the article' with no financial obligations.

Two models for open access are common. In the first model, an author publishes his/her work in an open access journal in which the publisher makes their work freely accessible online upon publication (this is commonly referred to as the Gold Road to open access). In the second model, an author can choose to self-archive a copy of his/her work in an institutional repository, subject-based repository or personal website that is freely accessible to all (this is commonly referred to as the Green Road to open access).

**2. Service on the Editorial Board**

This section covers the journal and your role on the editorial board. Also, it contains some questions about the general role of editors and editorial boards regarding journal access policies

**1. Please choose one response that best describes your role on this journal:**

☐ The person primarily responsible for the overall content and direction of the journal (for example, with a title like Editor, Editor-in-chief, Managing Editor)

☐ A person in a secondary role with responsibility for moving specific papers through the review process (for example, with a title like Associate or Assistant Editor)

☐ A person in a secondary role with responsibility for a specific section of the journal (for example, a Book Review Editor or Section Editor)

☐ A member of the Editorial Board

Other (please specify)

**2. How long have you been associated with this journal in an editorial capacity?**

☐ Less than a year

☐ 1-3 years

☐ 4-6 years

☐ 7 or more years

☐ Prefer not to answer

**3. Is the publisher of this journal a:**

☐ Commercial publisher

☐ Scholarly society publisher

☐ University press

☐ Don't know

Other (please specify)

**4. What is the general subject area of this journal?**

- ☐ Arts & Humanities
- ☐ Medicine
- ☐ Mathematics, Science & Technology
- ☐ Social Sciences

Other (please specify)

**5. What best describes the business model of the journal *at the time you were invited to join the editorial board*?**

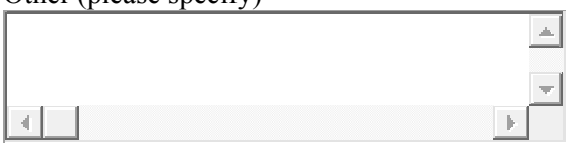
- ☐ An open access journal
- ☐ A subscription-based journal
- ☐ Don't know

Other (please specify)

**6. What best describes the *current* business model of this journal**?

- ☐ An open access journal
- ☐ A subscription-based journal
- ☐ Don't know

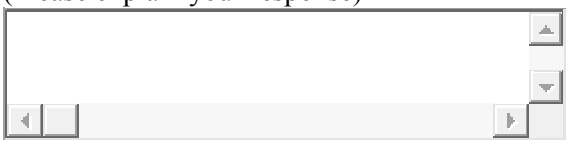
Other (please specify)



**7. How satisfied are you with the current business model of the journal**?

- ☐ Very dissatisfied
- ☐ Somewhat dissatisfied
- ☐ Neither dissatisfied nor satisfied
- ☐ Somewhat satisfied
- ☐ Very satisfied

(Please explain your response)



**8. When you were invited to join the editorial board, were you aware of the following:**

| | YES | NO |
|---|---|---|
| The journal's policy regarding users' access to journal articles. | ☐ | ☐ |
| The journal's policy on self-archiving by authors. | ☐ | ☐ |

**9. In your role on the editorial board, do you feel you have a responsibility to influence journal policies regarding access to scholarly articles?**

- ☐ Yes
- ☐ No

**10. In your role on the editorial board, do you feel you have a responsibility to influence journal policies regarding self-archiving?**

- ☐ Yes
- ☐ No

**11. If you felt a journal's access policies should change, how likely would you be to take the following actions to influence such changes in journal access policies?**

| | Very unlikely | Somewhat unlikely | Neither unlikely nor likely | Somewhat likely | Very likely |
|---|---|---|---|---|---|
| Resign from the editorial board | ☐ | ☐ | ☐ | ☐ | ☐ |
| Launch a new open access journal in the same subject | ☐ | ☐ | ☐ | ☐ | ☐ |
| Negotiate the access policies with the publisher | ☐ | ☐ | ☐ | ☐ | ☐ |
| Raise the issue for discussion on the editorial board | ☐ | ☐ | ☐ | ☐ | ☐ |

Other (please specify)

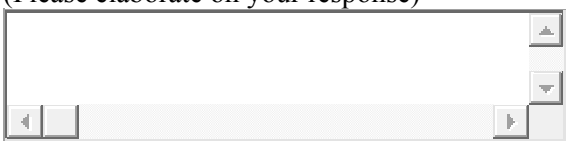
**3. Policies on Free Access to Journal Articles.**

Free access to journal content may be provided by the publisher, through its subscription or dissemination policies, or by the author, through self-archiving of individual articles. *This section is about your role in setting the publisher's policies on making all or some of the scholarly articles in this journal free to its readers*.

**12. What best describes your opinion on offering free access to the scholarly articles in the journal?**

- ☐ Strongly oppose
- ☐ Somewhat oppose
- ☐ Neither oppose nor support
- ☐ Somewhat support
- ☐ Strongly support

(Please elaborate on your response)



**13. For this journal, have you personally requested changes in policy to make access to some or all articles free?**

- ☐ Yes
- ☐ No

[If you answered yes, please briefly describe what you requested]

**14. Does the journal offer all or some of its scholarly articles free to readers?**

- ☐ Yes
- ☐ No, go to question (17)
- ☐ Don't know, go to question (17)

**15. The initiative to offer all or some of the scholarly articles in the journal free to readers came from:**

- ☐ The editor
- ☐ Members of the editorial board
- ☐ The publisher
- ☐ Other
- ☐ Don't know

**16. Which best describes your involvement in the decision that led to offering all or some of the scholarly articles in the journal for free? (Select all that apply).**

- ☐ I helped to formulate the journal's access policy
- ☐ As a board member, I was asked to vote on the journal's access policy
- ☐ I participated in board discussions about offering all or some of the journal's scholarly articles free

- [ ] I was on the editorial board when the policy was made but I was not consulted about the decision
- [ ] The policy was made prior to the date when I joined the editorial board

Other (please specify)

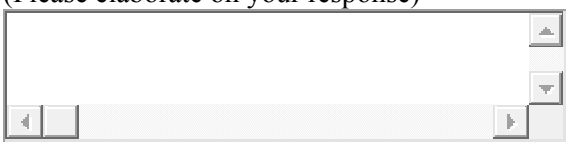
**4. Journal Policies on Self-Archiving**

This section is about your role in setting the journal's policies to allow authors to self-archive their articles. Permission to self-archive means authors can post their article as a pre print (their version of the paper before peer review) or post-print (their version of the paper after peer-review) in publicly accessible websites (for example, personal websites, institutional repositories, or subject repositories).

**17. What best describes your position on allowing authors to self-archive?**

- [ ] Strongly oppose
- [ ] Somewhat oppose
- [ ] Neither oppose nor support
- [ ] Somewhat support
- [ ] Strongly support

(Please elaborate on your response)



**18. On this journal, have you personally requested changes in policy to allow authors to self-archive?**

- [ ] Yes
- [ ] No

(If you answered yes, please briefly describe what you requested)

**19. Does the journal allow authors to post their articles as:**

- ☐ Pre-prints only
- ☐ Post-prints only
- ☐ Both pre-prints and post-prints
- ☐ Neither pre-prints nor post-prints, go to question (22)
- ☐ Don't know, go to question (22)

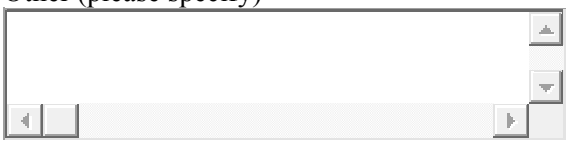
**20. The initiative to allow authors to self-archive came from:**

- ☐ The editor
- ☐ Members of the editorial board
- ☐ The publisher
- ☐ Other
- ☐ Don't know

**21. Which best describes your involvement in the decision that led to allowing authors to self-archive? (Select all that apply).**

- ☐ I helped to formulate the journal's self-archiving policy
- ☐ As a board member, I was asked to vote on the journal's self-archiving policy
- ☐ I participated in board discussions about self-archiving policy.
- ☐ I was on the editorial board when the decision was made but I was not involved in the decision
- ☐ The policy was made prior to the date when I joined the editorial board

Other (please specify)



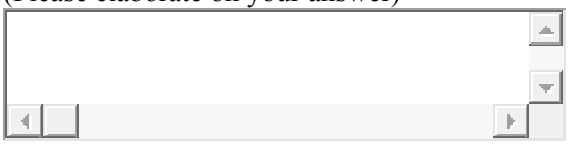
**5. Personal Experience with Journal Policies Regarding Access to Articles and Self-Archiving**

This section deals with you as an author and your own attitudes about and experience with open access journals and self-archiving in all journals.

**22. When you decide where to publish an article, is the business model of the journal (for example, whether it is open access or subscription-based) a factor in deciding where to publish?**

- ☐ Yes
- ☐ No

(Please elaborate on your answer)



**23. Have you published articles in open access journals?**

- ☐ Yes
- ☐ No, go to question (26)

**24. Approximately how many journal articles have you published in open access journals?**

- ☐ (1-3)
- ☐ (4-6)
- ☐ (7-9)
- ☐ More than 10 articles

**25. When did you submit your first article to an open access journal?**

- ☐ Within the last year
- ☐ Two years ago
- ☐ Three years ago
- ☐ Four years ago or more

**26. When you decide to publish an article in a subscription-based journal, do you consider the policies of the journal regarding self-archiving as a factor in deciding where to publish?**

- ☐ Yes
- ☐ No

**27. Have you ever self-archived an article?**

- ☐ Yes
- ☐ No, go to question (32)

**28. Approximately how many journal articles have you self-**archived?

- ☐ (1-3)
- ☐ (4-6)
- ☐ (7-9)
- ☐ More than 10 articles.

**29. When did you first self-archive an article?**

- ☐ Within the last year
- ☐ Two years ago
- ☐ Three years ago
- ☐ Four years ago or more

**30. Where do you self-archive? (Select all that apply)**

- ☐ Your personal website
- ☐ Subject-based repository
- ☐ Institutional repository
- ☐ Other

**31. Before you self-archive an article, do you check the journal policy about self-archiving if you are not aware of it?**

- ☐ Yes, every time
- ☐ Yes, sometimes
- ☐ No

**32. With regard to open access, please indicate your level of agreement with the following statements:**

| | Strongly disagree | Somewhat disagree | Neither disagree nor agree | Somewhat agree | Strongly agree |
|---|---|---|---|---|---|
| Open access journals can be financially viable. | ☐ | ☐ | ☐ | ☐ | ☐ |
| Open access articles can carry the same level of peer review as traditional journals | ☐ | ☐ | ☐ | ☐ | ☐ |
| Open access articles are as well indexed (for example, coverage in electronic databases) as articles published in traditional journals | ☐ | ☐ | ☐ | ☐ | ☐ |
| Open access articles have greater impact than articles published in traditional journals. | ☐ | ☐ | ☐ | ☐ | ☐ |
| Long term preservation of open access articles is reliable. | ☐ | ☐ | ☐ | ☐ | ☐ |

**6. Demographic Data**

Please answer a few questions about yourself.

**33. Gender:**

☐ Male

☐ Female

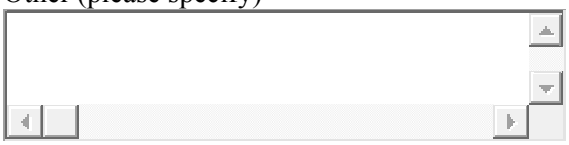
☐ Prefer not to answer

**34. In what country do you work?**

**35. Is your primary employer:**

- An academic institution
- A government agency
- A commercial entity (private sector)

Other (please specify)



**36. What is the highest level of education you have attained?**

- PhD degree
- Master's degree
- Bachelor's degree
- Other

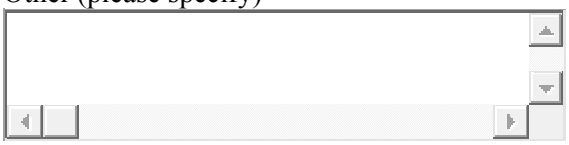
**37. Are you:**

- A tenured faculty member in an academic institution
- A pre-tenure faculty member in an academic institution
- Other

**38. What is your current primary subject area?**

- Arts & Humanities
- Medicine
- Mathematics, Science & Technology
- Social Sciences

Other (please specify)



**39. What is your age group?**

- ☐ Under 24
- ☐ 24-34
- ☐ 35-44
- ☐ 45-54
- ☐ 55-64
- ☐ Over 64
- ☐ Prefer not to answer

## Appendix F: Codes and Quotations

**Question number 7: How satisfied are you with the current business model of the journal?**

| Codes | Quotations | Frequency |
|---|---|---|
| Access | Access\|greenroad\|gold\|accessible\|circulation\|distribute\|visibility\| disseminate\|exposure\|widely available\|readership\|restricted to subscribers\|large audience\| | 79 |
| Financial | cost\|financial\|income\|funders\|charge*\|freely\|free\|inexpensive\|expensive\|subscription*\|profit\|commercial\|funding\|economic\|money\|revenue\|afford\|pay | 83 |
| Quality | isi\|impact factor\|review\|prestigious\|quality\|reviewed\|index\|citation \|worldwide known\|Reviewers\| | 24 |
| Other | Personal opinions\|not interested\|not an issue | 27 |

**Question Number 12: What best describes your opinion on offering free access to the scholarly articles in the journal?**

| Codes | Quotations | Frequency |
|---|---|---|
| Access | Dissemination\|restricted access\|unlimited access\|widely available\|unrestricted access\|disseminated\|reader*\|audience | 43 |
| Financial | Expenses\|economic*\|cost*\|prices\|afford\|subscription*\|funders\|revenue\|income\| money\|financial*\|financing\|funds\|page charges\|fee\|price* | 122 |
| Quality | Quality\|reputation\|review\|impact factor\|citations\|peer-review\|intellectual property\|prestigious\|citation | 18 |
| Other | Power\|no responsibility\|no control\|personal opinion | 22 |

**Question number 13: For this journal, have you personally requested changes in policy to make access to some or all articles free?**

| Codes | Quotations | Frequency |
|---|---|---|
| Access to specific people | access in developing countries\|free access for universities\| free access of members of the society\|certain disadvantaged | 7 |
| Already free | Already free to access\|articles has always been free\| | 4 |
| Embargo time | free after 12 months\|access within 6 months\|free after six months\|after one year\| | 8 |
| Financial | economic*\|cost*\|prices\|afford\|subscription*\|funders\|revenue\|income\|money\|financial*\|fee\| price | 6 |
| Full access | Open access\|free access\|gold standard\| | 9 |
| Authors' responsibility | self archiving\|author pays model\|author pays\|web archiving | 7 |
| Special access | Special issue\|selected papers\|key articles\|single article\|top 20 cited papers\|specific articles\|1-2 articles per issue be open acces\|certain articles\|selected articles\|free access for proceedings\|back issue available\|some articles\| | 24 |
| Other | Publisher decision\|no control\|personal opinion | 16 |

**Question number 17: What best describes your position on allowing authors to self-archive?**

| Codes | Quotations | Frequency |
|---|---|---|
| Access | Access\|green road\|gold\|accessible\|self-archive\|circulation\| distribute\|post print\|visibility\|pre print\|disseminate\|exposure\| widely available\|readership\|restricted \|audience\| | 24 |
| Archival type | Green road\|post print\|pre print\|archiving\|personal website\|repository\| | 19 |
| Financial | cost\|financial\|income\|funder*\|charge*\| free\|author fees\| expensive\| subscription*\|profit\|commercial\|funding\|economic\|money\|revenue\| afford\|pay | 22 |
| Quality | review\|impact\|prestige\|quality\|reviewed\|index\|citation\|editing\| reputation\| | 31 |
| Authors' responsibility | Author* decision\|copyright\|intellectual property\|choice | 28 |
| Other | Preservation\|little knowedgle\|self-archiving definition\|archival types\|personal opinion | 48 |

**Question number 18: On this journal, have you personally requested changes in policy to allow authors to self-archive?**

| Codes | Quotations | Frequency |
|---|---|---|
| Archival type | Post print\|pre print\|personal website\|repository\|archiving | 7 |
| Compliance with NIH policies | NIH\|compliance\|National Institute of Health | 3 |
| Existing policy | No change\| has been allowed\|allowed\|already permit | 9 |
| Other | Personal opinion\|not important | 9 |

**Question number 22: When you decide where to publish an article, is the business model of the journal (for example, whether it is open access or subscription-based) a factor in deciding where to publish?**

| Codes | Quotations | Frequency |
|---|---|---|
| Financial | fee\|afford\|cost*\|funds\|expensive\|financial\|income\|funders\|charge*\|freely\|free\|inexpensive\|expensive\|subscription*\|profit\|commercial\|funding\|economic\|money\|revenue\| afford\|pay\|page charges\| | 42 |
| Quality | Reputation\|impact factor\|peer-review*\|prestige*\|citation index\|high* impact\|journal quality\|appropriatness\|well established journals\|high redibility\|influential\|review*\|referee*\|standing\|ranking\|citation rating\|top journals\|respected journal\|status of a journal\|isi\| | 82 |
| Access | Audience\|reach\|readership\|accessible\|dissemination\|readers\|maximum access\|green road\|gold\|accessible\|circulation\|distribute\|**visibility**\| disseminate\|exposure\|widely available\|restricted to subscribers\| | 43 |
| Not an author | Not an author | 5 |
| Other | Personal opinion\|little knowledge about open access journals | 33 |

## Appendix G: List of Countries

1. Argentina
2. Australia
3. Austria
4. Belgium
5. Brazil
6. Canada
7. China
8. Croatia
9. Czech Republic
10. Denmark
11. England
12. Finland
13. France
14. Germany
15. Greece
16. Hungary
17. India
18. Iran
19. Ireland
20. Israel
21. Italy
22. Japan
23. Kenya
24. Korea
25. Malaysia
26. Malta
27. Mexico
28. Netherlands
29. New Zealand
30. Norway
31. Poland
32. Portugal
33. Russia
34. Scotland, UK
35. Singapore
36. Slovakia
37. Slovenia
38. South Africa
39. Spain
40. Sultanate of Oman
41. Sweden
42. Switzerland
43. Taiwan
44. The Netherlands

45. Turkey
46. U.S.A
47. Uruguay
48. Wales, UK