



An international comparison of journal publishing and citing behaviours

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ABSTRACT

The relationship between researchers' publishing and citing behaviours has received little examination despite its potential importance in scholarly communication, particularly at an international level. To remedy this we studied documents and their references indexed in Thomson Reuters's Web of Science (WoS) in the period 2000–2009 to compare journal publishing behaviours against journal citing behaviours across the world. The results reveal that most publications in, and citations to, all five quality based strata of journals examined come from scientifically and economically advanced countries. Nevertheless, in proportion to their total number of citations given to WoS journals, it seems that less developed countries cite high-quality journals at the same rate as developed countries and so the poorer publishing of less developed countries does not seem to be due to a lack of access to top journals. Moreover, examining the publishing and citing trends of countries revealed a decreasing rate of high-income and Scientifically Advanced Countries (SACs) publications in, and citations to, all quality ranges of journals in comparison to the increasing rate of publications and citations of other groups. Finally, research cooperation between developed and less developed countries seems to positively influence the publishing behaviour of the latter as their publications co-authored with developed countries were published more often in top journals.

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1. Introduction

Journal prestige is an important element in the academic environment and influences the reputation of authors and affiliated institutions (Shichor, O'Brien, & Decker, 1981). For a long time, one way to assess the quality of a paper has been by the quality and prestige of the journal in which it was published (Cheung, 2009; Martin, 1996; Miller & Dodge, 1979; Ravetz, 1971; Yue, 2004). It seems the quality of references in a paper positively influences its visibility and impact (Bornmann, Schier, Marx, & Daniel, 2012; Boyack & Klavans, 2005; Lancho-Barrantes, Guerrero-Bote, & Moya-Anegon, 2010) and hence it may be that lack of access to high quality journals prevents developing countries' researchers from producing high quality successful publications. Developed countries publish the majority of their papers in leading journals, with few papers originating from less developed countries (Boldt, Maleck, & Koetter, 1999; Elster & Chen, 1994; Mahawar, Malviya, & Kumar, 2006). Some studies have tried to identify the reasons behind this. Cheung (2009) raises the issue of cultural–geographical bias amongst reviewers, but also finds that replication of previously published experiments, poor design and poor grammar (see also Rohra, 2011) is more common from researchers in less developed countries. These may be reasons why they are rejected by

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reviewers of international leading journals. Another reason why international journals may refuse to publish articles from developing countries could be that their readers are mostly from developed countries and desire to read articles pertinent to their own countries (Smith, 2002).

Despite publications from less developed countries not being widely published in high-quality journals, do researchers in less developed countries cite papers published in the top journals of their own fields? To the best of our knowledge, no study has addressed this issue.

2. Literature review

The objective of this study is to examine national journal publishing and citing behaviours. The journal impact factor is a widely used indicator of journal quality and prestige. Seglen (1997a, 1997b) argues that while peer review is a good indicator of quality, the impact factor is questionable, because it is not representative of all articles in a journal. Sometimes, a few papers in a journal receive a significant number of citations while the rest are uncited; although the impact factor of this journal may be high it does not truly represent the impact of individual articles. Peer review is the best measure of quality (Kostoff, 1997) but it is not perfect because it lacks reliability and has bias resulting from invalid and unreliable peer-reviews, especially when the reviewees have chosen the reviewers themselves (Marsh, Jayasinghe, & Bond, 2008). Garfield (1999) also states that “the Impact Factor is not as perfect tool to measure the quality of articles but there is nothing better”. Some studies have critically analysed the impact factor and some have tried to normalize it by introducing an alternative measure of impact (Buela-Casal, 2004; Hansson, 1995; Moed & van Leeuwen, 1996; Moed, van Leeuwen, & Reedijk, 1996; Moed, van Leeuwen, & Reedijk, 1999; Yanovsky, 1981). In a detailed discussion of the potential and limitations of the journal impact factor, Glänzel and Moed (2002) claim that the strengths of this indicator include intelligibility, stability and reproducibility and argue that its ‘uninformed use’ is a flaw in practice. They also claim that there are several methodological limitations, such as field based and document type based biases. They also discuss some other journal citation measures aimed at correcting the journal impact factor’s methodological flaws. Empirical studies addressing the question of the impact factor as a measure of quality are scarce. Surveying physicians to rate the quality of journals, the validity of the impact factor as an indicator of quality for General Medicine was examined and revealed that it may be a credible measure (Saha, Saint, & Christakis, 2003). But, as many studies have confirmed, it cannot be a reasonable indicator of quality for an individual article (Garfield, 1998; Gracza & Somoskovi, 2007; Kaltborn & Kuhn, 2004; Seglen, 1997a, 1997b, 1998; Whitehouse, 2001). Campbell (2008) declares that the journal impact factor is suitable to measure impact at national and institutional levels but not at the individual level. He asserts that “citation statistics of large numbers of individual papers can reflect the impact of contributions at the institutional or national level” but is in doubt about individual papers and believes there are other more certain methods to measure the impact of an individual paper. In the current study the journal impact factor is used as an indicator of quality at national level despite its acknowledged limitations.

3. Journal publishing behaviour

Journal publishing behaviour and preferences for publishing in leading journals have been examined at different individual (Cheung, 2008; Gordon, 1984; Luukkonen, 1992), institutional (Bairam, 1994; Kocher & Sutter, 2001) and national levels. The contribution of countries or groups of countries to journals or conferences has been explored since 1980s (Braun, Glänzel, & Schubert, 1985; Schubert, Zsindely, & Braun, 1983; Schubert, Glänzel, & Braun, 1989). Some studies have investigated country distributions of publications in a few high-impact journals; most have been carried out on specific fields of science and reported that most papers in high-quality journals come from researchers in the US and UK, with few from developing countries (Black & Davies, 1999; Boldt et al., 1999; Carnegie & Potter, 2000; Cheung, 2009; Elliott, Greenaway, & Sapsford, 1998; Jones & Roberts, 2005; Mahawar et al., 2006; Patel & Sumathipala, 2001). Indeed, the chance of being accepted in an American journal is lower for submissions from countries other than the US (Elster & Chen, 1994) and also the acceptance rate of papers from high-income countries is about five times greater than that of papers from low- and middle-income countries (Singh, 2006). Developed countries are the main readers of international journals and journal editorial boards are attempting to attract a wide range of readers (Smith, 2002). From an online survey of corresponding authors in *Pharmacology*, the biased attitude of editors and reviewers, followed by scientists’ poor writing skills were found to be the main obstacles to publishing papers from less developed countries in international journals (Rohra, 2011). The same results were claimed by Cheung (2009).

Different factors may affect authors’ publishing behaviour, one of which could be scientific collaboration. Many studies have emphasized the positive impacts of international collaboration mainly on the rise of the citation impact of internationally co-authored papers. It has been found that collaboration, in particular international collaboration, can also affect reference behaviour due to wider access to sources that a number of authors together collectively have. In addition, international collaboration may raise the equality amongst contributing nations in citation impact (Persson, Glänzel, & Danell, 2004). Researchers have a variety of motivations for collaboration, such as to access more resources and equipment, to get funds, or to speed their research process and enhance productivity (Beaver, 2001) but as Cronin (2001) argues, the degree of authors’ contributions to a paper may vary and all authors do not necessarily need to contribute in writing the paper. Wagner et al. (2001) found that scientific collaboration helps developing countries to take part in global science. They mentioned some factors motivating researchers across developing countries to collaborate with researchers in developed countries

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