Journal of School Psychology 53 (2015) 231–241

Contents lists available at ScienceDirect

Journal of School Psychology

journal homepage: www.elsevier.com/locate/jschpsyc

The research impact of school psychology faculty

Marley W. Watkins [a,*], Christina Y. Chan-Park [b]

[a] Department of Educational Psychology, Baylor University, USA
[b] University Libraries, Baylor University, USA

ARTICLE INFO

Article history:
Received 30 September 2014
Received in revised form 11 February 2015
Accepted 20 March 2015
Available online 15 May 2015

Keywords:
h-Index
Research
Faculty
Higher education
School psychology

ABSTRACT

Hirsch's (2005) *h* index has become one of the most popular indicators of research productivity for higher education faculty. However, the *h* index varies across academic disciplines so empirically established norms for each discipline are necessary. To that end, the current study collected *h* index values from Scopus and Google Scholar databases for 401 tenure-track faculty members from 109 school psychology training programs. Male faculty tended to be more senior than female faculty and a greater proportion of the male faculty held professorial rank. However, female faculty members outnumbered males at the assistant and associate professor ranks. Although strongly correlated ($rho = .84$), *h* index values from Google Scholar were higher than those from Scopus. *h* index distributions were positively skewed with many faculty having low values and a few faculty having high values. Faculty in doctoral training programs exhibited significantly larger *h* index values than faculty in specialist training programs and there were univariate differences in *h* index values across academic rank and sex, but sex differences were not significant after taking seniority into account. It was recommended that the *h* index be integrated with peer review and diverse other indicators when considering individual merit.

1. Introduction

There are approximately 315 school psychology training programs in the United States, of which 59 are accredited by the American Psychological Association (APA) and around 225 are approved by the National Association of School Psychologists (NASP; Rossen & von der Embse, 2014). In total, these programs serve more than 9500 students and are staffed by more than 600 faculty (Merrell, Ervin, & Peacock, 2012).

Faculty in school psychology programs, similar to faculty in other disciplines, are regularly evaluated, both pre- and post-tenure (Fagan & Wise, 2007). Those evaluations traditionally encompass research, teaching, and service activities (Fagan & Wise, 2007; McCormick & Barnes, 2008). However, research productivity often dominates the promotion and tenure process (Carter, 1989; Green, 2008), and administrators typically agree that it would be difficult to achieve tenure in the absence of publications in refereed journals (Balogun, Sloan, & Germain, 2007; Marchant & Newman, 1994). Research productivity has also been shown to affect salary (Mittal, Feick, & Murshed, 2008), research support (McGrail, Rickard, & Jones, 2006), and hiring decisions (Fuerstman & Lavertu, 2005; Martínez, Floyd, & Erichsen, 2011).

Given that journal articles are the most prestigious form of publication in most of the social sciences (Byrnes, 2007; Whitley & Kite, 2013), the research productivity of school psychology faculty has typically been quantified by their number of peer-reviewed journal

* Corresponding author at: Department of Educational Psychology, Baylor University, Waco, TX 76798-7301, USA. Tel.: +1 254 710 4234.
E-mail address: Marley_Watkins@baylor.edu (M.W. Watkins).
Action Editor: Michelle K. Demaray

http://dx.doi.org/10.1016/j.jsp.2015.03.003
0022-4405/

publications. To that end, publication rankings of school psychology faculty have periodically been reported (Carper & Williams, 2004; Grapin, Kranzler, & Daley, 2013; Little, 1997; Roberts, Davis, Zanger, Gerrard-Morris, & Robinson, 2006; Wagner, Lail, Viglietta, & Burns, 2007). These reports have consistently revealed that school psychology faculty members publish, on average, 1 to 2 peer-reviewed journal articles per year with considerable variability among authors. The most recent report indicated that faculty in APA-accredited school psychology programs published an average of 1.2 journal articles per year but more than 50% of them published fewer than 1 article per year (Grapin et al., 2013). This pattern is consistent with surveys of the research productivity of academic psychologists in other specialty areas (Joy, 2006; Stewart, Roberts, & Roy, 2007) and of academics in other disciplines (Ruiz-Castillo & Costas, 2014), which seems to roughly follow Lotka's (1926) inverse square law where the proportion of persons making n contributions is about $1/n^2$ of those making one contribution.

The peer review process with its high rejection rates (e.g., 70% to 90% in the social sciences) would seem to ensure that published research papers are of high quality and will positively impact scientific theory, research, and practice (Lee, 2012). Unfortunately, peer review cannot detect studies that are based on inadequate or fraudulent data, report inaccurate results, etc. (Bornmann & Daniel, 2008; Fanelli & Ioannidis, 2013; Flaherty, 2011; Kepes & McDaniel, 2013). Additionally, peer reviews might be unreliable, biased, or invalid (Bohannon, 2013; Bornmann, 2011; Lee, Sugimoto, Zhang, & Cronin, 2013; Triggle & Triggle, 2007), making the total number of publications a potentially misleading measure of research productivity (Aguinis, Suárez-González, Lannelongue, & Joo, 2012).

Given these limitations, peer usage (the citation of a published research paper by other researchers) has been recommended to supplement or replace publication numbers as an index of research productivity (Bornmann & Marx, 2014; Charlton, 2007; Duffy, Jadidian, Webster, & Sandell, 2011). The most obvious quantification of peer usage is total citation count (Hargens, 1990), i.e., the total number of times that a publication has been cited in other publications. It is assumed that high quality publications will generate more citations from scientific colleagues than low quality or flawed publications (Bornmann & Daniel, 2008). To that end, one recent report of the research productivity of school psychology faculty included citation counts (Grapin et al., 2013). In general, citation counts for school psychology faculty follow the same pattern as publication counts, with many faculty members having few citations and a few faculty members accumulating a large number of citations.

Unfortunately, the total number of citations may not reflect sustained or programmatic impact. For example, a student may co-author an influential paper with a mentor but never author another cited paper. In this and other situations, the total citation count is too sensitive to highly cited publications and may be inflated by a small number of influential papers. Thus, total citation count may also be an imperfect indicator of research productivity (Coupe, 2013; Cronin & Meho, 2006).

Hirsch (2005) recognized the limitations of publications and citations as quantitative measures of research productivity and proposed a new bibliographic index to quantify "the scientific output of a researcher" (p. 16569). His *h* index is computed as the *h* number of *N* papers that have at least *h* citations. For example, a researcher has published 8 papers with 3, 11, 2, 1, 9, 14, 10, and 1 citations, respectively. After being rank ordered from highest to lowest, the citation counts for the 8 papers are **14, 11**, **10**, **9**, 3, 2, and 1. The first four papers have at least 4 citations each but the paper at rank 5 has fewer than 5 citations (e.g., 3), resulting in an *h* of 4. Thus, an *h* index of 4 means that the researcher has authored at least 4 papers that have each been cited at least 4 times. Those 4 papers make up the *h* core for this hypothetical scholar.

Although more than 50 variants of the *h* index have subsequently been proposed (Bornmann, 2014), analyses of quantitative indices of research productivity have found that most are redundant with the *h* index (Bornmann & Marx, 2011) and that "the easiest of the valid measures to understand and calculate is the *h* index" (Ruscio, Seaman, D'Oriano, Stremlo, & Mahalchik, 2012, p. 142). Consequently, the *h* index has become one of the most popular indicators of research productivity (Egghe, 2010). It combines an indicator of quantity (publications) and an indicator of quality (citations) into a single metric. Although not universally endorsed (Waltman & van Eck, 2011) and not without limitations (Bornmann & Marx, 2011; Egghe, 2010), the *h* index has exhibited several important strengths: (a) agreement with other measures of research productivity; (b) robustness to erroneous or missing publications; (c) prediction of future research productivity; (d) discriminant validity with groups of known high performers, (e) insensitivity to rarely cited as well as infrequent but highly cited publications; (f) computational simplicity; and (g) resistance to self-citations and multi-authored publications (Egghe, 2010; Engqvist & Frommen, 2008; Hirsch, 2005; Ruscio et al., 2012; Wainer & Vieira, 2013).

Although robust, the *h* index is dependent on the bibliographic database from which it was computed (Egghe, 2010). *h* values and rankings for the same individual have been shown to vary across Scopus, Web of Science, and Google Scholar databases because the coverage of each database is different (Bar-Ilan, 2008). For example, Scopus does not index citations before 1996 and does not include books or conference presentations whereas Google Scholar includes over 30 different document sources in its coverage, including books and conference presentations (Meho & Yang, 2007; Ruscio et al., 2012). Additionally, the *h* index is field dependent: it varies across academic disciplines due to different publication and citation practices in those disciplines (El Emam, Arbuckle, Jonker, & Anderson, 2012). For example, Hirsch (2005) applied the *h* index to physicists at research universities and found that highly productive physicists had *h* values of around 45. In contrast, highly productive life scientists had *h* values of around 57. Subsequent research has found widely varying *h* index levels across other academic disciplines (Barner, Holosko, & Thyer, 2014; Duffy et al., 2011; Egghe, 2010; Ponterotto, Fingerhut, & McGuinness, 2012; Wainer & Vieira, 2013).

Ruscio et al. (2012) concluded that "to evaluate individuals' scholarly impact we believe that in most cases Hirsch's (2005) *h* index should be seriously considered" (p. 143). However, the discipline-specific sensitivity of the *h* index requires that *h* index values "be accompanied by empirically established norms to contextualize their meaning objectively" (p. 125). Accordingly, the purpose of this study is to provide *h* index norms for school psychology faculty.