

Unaffiliated researchers: a preliminary study

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ABSTRACT. This paper aims at exploring the apparently rising trend of unaffiliated researchers. It does so by analyzing a set of scholarly publications where the authors states to be an “independent researcher” in place of the affiliation. Some of the characteristics of this set are explained along with directions on how to expand research on this topic.

KEYWORDS: *Open access, societal impact of research, unaffiliated researchers*

Introduction

This short paper reports on an exploratory study aiming to shed light on one of the understudied groups within the research community. These are researchers who are not affiliated with academic (or other) institutions, or are in fact affiliated but opt to conceal their affiliation. This study started as part of a larger project to identify different groups outside of universities that might benefit from open access (OA) research (e.g., industry researchers, practitioners, policymakers, patient groups, etc.). Unaffiliated researchers were chosen because they lack the privilege of access to the wide range of scholarly literature usually made available through institutional subscriptions, but they proved to be an interesting group to study for other reasons. Some authors have already discussed this issue, but no empirical study has been conducted so far (Roff, 2005; Line, 2011).

It is not clear who these researchers (who publish without stating an academic affiliation) are. Speculation suggests four main possibilities. First, it is not difficult to imagine that individuals who have an interest (and perhaps some previous training) in one area of research and can spare enough time (whether related to or separate from their daily job) to do quality research that can then be published. Another possibility could be when a professional (normally affiliated) researcher is taking a long transition period while moving between two

different institutions. It is also possible that the researcher is in fact affiliated with some organization but has reasons for not mentioning their affiliation on the publication. That is certainly common among researchers who belong to governmental research units who publish results that government might not want to be affiliated with. Consultants are another possible example of this case. The final possibility is of course researchers who publish from time to time after retirement especially those who retire early (i.e., women who leave academic positions to spend more time on establishing or maintaining a family).

Method

The Scopus database was searched (in February 2016) for publications where at least one author stated “Independent Researcher” instead of a specific affiliation (e.g., university department or company). The search returned 844 records. The majority of these publications were coauthored with one or more affiliated researchers. However, a set of 217 publications were solely authored by one (and in a few cases multiple) independent researcher(s). Further analysis was conducted to identify the characteristics of this particular set.

Needless to say, this method by design targets only unaffiliated researchers who express their research findings in the form of academic publications. It does not account for those who publish in other forms e.g., journalists (Maggio et al., (2017), nor those who do not publish at all and only read scholarly literature for the purpose of intellectual enrichment (Willinsky,2009). This latter phenomenon (of lay readership of scholarly literature) has been investigated more deeply in previous studies (Alperin, 2015; Zuccala, 2010).

Results and Discussion

Although still insignificant in absolute numbers, the data suggests that the number of publications authored by unaffiliated researchers has been rising over the past decade. A whole decade has separated each two of the first three of these publications (published in 1980, 1990, and 1999, respectively). However, the number of publications by independent researchers has increased from only 3 in 2008 to 50 in 2015 (Figure 1).

Indeed, part of this trend can be attributed to the general increase in the number of researchers and publications worldwide, but this is apparently not the whole story. On comparing this 1500% increase with the only 28% increase in the total number of (Scopus-indexed) publications between 2008 and 2015, this trend is difficult to ignore. While it can be argued that this rise is minute in absolute numbers (50 publications out of over 2 million published in 2015), it should be noted that using the term “independent researcher” is only one way of counting. Unaffiliated researchers can use a variety other designations (i.e., “independent scholar”, “independent scientist”, “activist”, “amateur cosmologist”, “lawyer”).

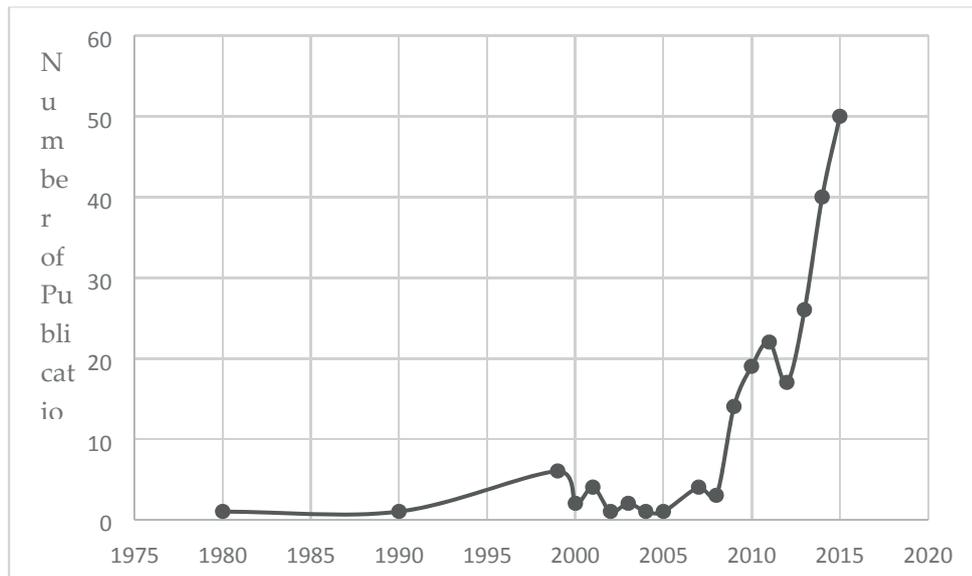


Figure 1. Number of publications authored by “independent researchers” every year

In this dataset, almost half of the publications come from the United States (62) and the United Kingdom (38) (Table 1), with minimal representation from Africa and Latin America. The majority of publications are journal articles (73%), including review papers. Conference papers come next at 11%, followed by books and book chapters at 8%. Other document types (editorials, letters, research notes, etc.) make up the remaining 8%. Some of the publications reported on experimental research projects, which might be costly to conduct - especially in a field like immunology (for example, one paper has the title “Peptide motif analysis predicts lymphocytic choriomeningitis virus as trigger for multiple sclerosis”). This called for further investigation into the issue of funding. None of the independently authored papers mentioned funding details. All of the 27 papers that do so are coauthored with affiliated researchers. They fit within regular expectations of research funding sources (research councils, funding agencies, and intramural university funds). Note in the following table that percentages do not add up to 100% due to rounding.

Country	Count	Percentage (%)
United States	62	29
United Kingdom	38	18
Australia	11	5
India	11	5
Canada	9	4
Italy	8	4
The Netherlands	7	3
Others	71	33
Total	217	

Table 1. Distribution of papers authored by independent researchers based the author’s country

It is apparent that some of the papers (solely authored by independent researchers) are based on sophisticated experimental work in both physical and life science fields (Table 2), which is generally expensive to conduct and would ideally require significant funding. It is important to note here that the absence of information does not necessarily mean that no funds were available. It could be that funding sources were not acknowledged on these publications or just not successfully indexed by Scopus.

Field of Research	Percentage of Papers Authored by Independent Researchers Alone (<i>n</i> = 217)	Percentage of Papers Authored by Independent Researchers with Collaborators (<i>n</i> = 844)
Arts and Humanities	11	5
Social Sciences	49	38
Physical Sciences	17	17
Life Sciences	23	40

Table 2. Distribution of papers authored by independent researchers based on research field (using the first classification code provided by Scopus ¹)

¹ About 10% of the publications had no classification in Scopus, and were categorized to one of the four fields above based on the author's judgment.

This issue of the cost of conducting experimental research might be one reason why physical and life science papers solely published by independent researchers are less in proportion compared to those in humanities and social sciences. This assumption can also explain the increase in the proportion of life science papers (arguably the most costly) in papers where there are university collaborators (see the right column of Table 2). However, this assumption does not explain the low representation of papers from arts and humanities, given that research in those fields generally requires much less resources to conduct. The number of arts and humanities journals in Scopus is about one half of that of social science journals, which is not nearly the same ratio of papers in this dataset (see the middle and the right columns of Table 2). Another assumption to explain this prevalence of papers from social science would be the existence of closely linked professions to many fields of the social science (e.g., economics or public policy). This is unlike the case with many physical or life science disciplines, where not much research takes place outside of universities or credentialed research institutes, making it more complicated for unaffiliated researchers to be involved.

Counting the number of references in each publication shows that it is not much different from general patterns in scholarly publications. Table 3 below shows the distribution of references within the dataset. The average publication in this dataset cites about 33 references, which is more than the 20 references cited in all of Scopus publications on average (Scopus, 2017)

This raises interesting questions about the ways they access previous literature and the possible benefits OA research can have in this regard.

Number Cited References per Publication	Count
0–10	64
11–50	104
50–100	39
>100	10
Total	217

Table 3. Citing behavior of independent researchers

Although deeper analysis is required, it appears that the quality of these publications on average might not be less than what is expected of scholarly works in general. Although counting citations is without question a debatable measure of quality, in absence of other measures it can give us some method to compare. Excluding one article that received 484 citations, the 79 articles who have received any citations have an average of 4.3 citations per document for a 16-year citation window. The fact that 138 (64%) of the papers were never cited calls for concern, given that other studies have demonstrated much lower rates even with shorter citation windows (Larivière, Gingras, Archambault, 2009).

Further Research

Further research into this topic can inform the debate on the (de)institutionalization of research practice, as well as the impact of the OA movement on the traditional gatekeeping function of journals in academia. This is an especially relevant topic nowadays, while we are witnessing a growing movement of amateur researchers (not formally trained as scientists) taking on projects “that professional scientists would not do on their own, whether because of the type of question or the place of study” (Miller-Rushing, Primack R., Bonney R., 2012). This is one type of what is referred to as citizen science, where non-experts take the lead in defining a problem (usually one that manifests in their daily life e.g., pollution in a nearby water stream) and do the necessary research to understand it. There is already an ongoing debate on the credibility of the other type of citizen science (where credentialed researchers take the lead and non-experts help only by collecting or classifying the data) (Bonney et al., 2014). It would be interesting to see if the ability to publish as an unaffiliated researcher is related to the recognition of this new type of research projects (where citizens take the lead) by the scientific community.

There are, however, a few points that need to be considered before reaching this deep level of analysis. First, we need to identify the real status of those who publish as “Independent Researchers”. In other words, it is important to know the relative proportions of amateur researchers, researchers in transition, or those who have reasons not to mention their affiliations or have already retired. Knowing these proportions will help us to specify why this trend is rising and might save researchers the effort of further investigations if it turns out that the majority of these “unaffiliated researchers” are based in places that offer them large-scale journal access (e.g. universities or large corporations). It is important to investigate the topic of unaffiliated researchers along disciplinary lines. Research communities in different fields operate differently and have different modes of interaction with

those outside them, whether these were amateur researchers or practitioners of a corresponding profession. This is why the best scenario would be if researchers in each field identified the possible ways “independents” are involved in their research communities (e.g., what background they have and what designation they use if they publish) and then took on the mission of studying this involvement and the potential way of measuring its impact.

Third, more insights into how these unaffiliated researchers get funding for their studies are also needed. This can also be extended to include other potential challenges (e.g., access to previous literature, use of research equipment, manuscript rejection for lack of affiliation, etc.) in addition to their strategies to overcome those challenges. This is especially important to investigate in the context of papers that belong to physical and life sciences (about half of the studies in the dataset). Fourth, analyzing the sources which these independent researchers cite in their publications can provide pertinent insights into their relationship with OA. This relationship (along with other issues raised above) can also be investigated through an online survey of these researchers using the correspondence emails they provide on publication. There are also other sources to gather information on these researchers, such as the British Library (which reported that 16% of the documents handled by its document supply service in 2010 were requested by unaffiliated individuals (CIBER, 2017)). Another source is the databases of pay-per-view or article rental services. For example, in their 2016 report, DeepDyve stated that over 93% of their users used a corporate or consumer email address (as opposed to those with academic or government affiliations) (DeepDyve, 2016). More research using these sources will surely be a path worth taking.

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