Publish or Perish

Maximizing the impact of your next publication
The research life: Enable, do, share

Develop Strategy

Recruit/evaluate researchers
Secure funding
Establish partnerships
Manage facilities

Search, read, review
Collaborate & network
Experiment
Analyze & synthesize

Manage data
Publish and disseminate
Commercialise
Promote

Have impact
The research life: Publish or Perish
Did you know

“Publish or perish” has been worrying researchers for 60 years

Publish. Or. Perish. These three little words describe the constant pressure on academics to publish their research and make their name. But this is not a new phenomenon; these three words have been keeping researchers awake for over 60 years.

The phrase was coined in 1950 by Kimball C. Atwood III, a geneticist at Columbia University (1). Although never written down, it struck a chord with researchers, and, so legend has it, it was just a month before the phrase found its way back to Atwood, in an address given by a visiting lecturer.

Despite the long history of “Publish or Perish”, it is likely to ring around the halls of the world’s research institutes as long as competition among researchers for limited funds and positions continues to intensify.

Reference
Publish or Perish: Evidence

81% of published authors agree/strongly agree*:
“My career depends on a history of publishing research articles in peer reviewed journals”

Institutional: Career advancement and funding
National: Research assessment exercises
Global: Research dissemination is a goal of research

Reasos for agreeing

At my institution, there are defined thresholds of publications for academic promotions at least during early career. Engineering & Technology, UK (36-45)

Articles in peer-reviewed journals make the most important contribution to my career in terms of status, merit pay, and marketability, vs. teaching or service. Social Science, USA (36-45)

If I publish well (Impact Factor, h-index) I have more chance to get a better position and to have grants. Medicine & Allied Health, Italy (46-55)

Because the primary role of my job is to produce research which is of no use if it does not get into the public domain. Earth & Planetary Sciences, UK (56-65)

* Survey of 3,090 published authors in November 2012
47% of published authors agree/strongly agree*:
“I feel pressured to publish more research articles rather than fewer higher quality research articles”

Lowest in Medicine
Highest in Engineering, Earth and Environment
Increasing in Social Science, Economics and Humanities

Lowest for older authors (over 56) and men
Highest for younger authors (under 36) and women

Lowest in the US, Japan, Germany, UK and Canada
Highest in Brazil (from funders)
US pressure from colleagues; UK from potential employers/superiors; Germany and China from funders

* Survey of 3,090 published authors in November 2012
Journals: Origin and purpose

- **Registration**: Time-stamped to establish priority
- **Certification**: Peer-reviewed to ensure validity
- **Dissemination**: Distributed to allow replication and advancement
- **Preservation**: Archived for posterity
PoP drivers: People

Increasing competition for relatively scarce positions
PoP drivers: Funding

Increasing competition for relatively scarce funding

* 2009 and 2010 years exclude ARRA.
“It is certainly impossible for any person who wishes to devote a portion of his time to chemical experiment, to read all the books and papers that are published..; their number is immense, and the labour of winnowing out the few [of interest] .. is such, that most persons who try .. inadvertently, at times, pass by what is really good.”

1826

“This is truly the decade of the journal and we should seek to limit their number rather than to increase them since there can also be too many periodicals.”

1789
PoP outcomes: Publications
PoP outcomes: Collaboration

UK

Field-weighted citation impact relative to institutional co-authorship

<table>
<thead>
<tr>
<th>Country</th>
<th>Single author</th>
<th>Institutional</th>
<th>National</th>
<th>International</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>84%</td>
<td>100%</td>
<td>120%</td>
<td>161%</td>
</tr>
</tbody>
</table>
Country size
Overall article output for each country.

Country colour
Field-weighted citation impact of the overall article output for each country.

Line colour
Field-weighted citation impact of the co-authored articles between each country pair.
Charged-particle multiplicities in $pp$ interactions at $\sqrt{s} = 900$ GeV measured with the ATLAS detector at the LHC

ATLAS Collaboration

Abstract

The first measurements from proton-proton collisions recorded with the ATLAS detector at the LHC are presented. Data were collected in December 2009 using a minimum-bias trigger during collisions at a centre-of-mass energy of 900 GeV. The charged-particle multiplicity, its dependence on transverse momentum and pseudorapidity, and the relationship between mean transverse momentum and charged-particle multiplicity are measured for events with at least one charged particle in the kinematic range $|\eta| < 2.5$ and $p_T > 500$ MeV. The measurements are compared to Monte Carlo models of proton–proton collisions and to results from other experiments at the same centre-of-mass energy. The charged-particle multiplicity per event and unit of pseudorapidity at $\eta = 0$ is measured to be $1.333 \pm 0.003$ (stat.) $\pm 0.040$ (syst.), which is 5–15\% higher than the Monte Carlo models predict.

2010 Published by Elsevier B.V.
PoP outcomes: Attention economy

The ‘market’ for scholarly articles has become an attention economy:

1. The market is huge (29m published articles in the last 20 yrs)
2. There is a immense variability in article quality
3. Most authors (‘sellers’) have not published enough to build a reputation for quality
4. Readers (‘consumers’) have a limited amount of attention
5. The true quality of an article cannot be known until it has been read
Getting published, read and credited

Practical tips:

• Getting published
  • Write a clear and succinct manuscript in good English
  • Choose the right journal
  • Check the Aims & Scope
  • Check the Guide for Authors
  • Don’t stop at the first rejection!

• Getting read (attracting attention)
  • Getting credit (making an impact)
Getting read: Article discovery

Starting point for finding scholarly information*

- Search Engine: 32%
  - Google
  - Yahoo!
  - bing
- Full Text Services: 29%
  - ScienceDirect
  - PubMed Central
  - arXiv.org
- A&I Services: 24%
  - ISI Web of Science
  - SciFinder
- Social Media: 1%
  - Facebook
  - LinkedIn
- Other: 14%

Specific to scholarly research

Physical scientists typically start in Google
Health and Life scientists typically start in PubMed
Social scientists typically start in Google Scholar

* Survey of 3,090 published authors in November 2012
Getting read: Search efficiency

64% of published authors agree/strongly agree*: “Compared to 5 years ago I now spend more time reading and analysing research articles rather than finding them”

45’ average time taken to retrieve an article
19’ for a known article
47’ to keep up to date in the field
58’ to expand knowledge outside the field

7h45’ average time spent searching & reading articles per week
3h06’ searching
4h39’ reading

5.1 average number of articles read per week

* Survey of 3,090 published authors in November 2012
Getting read: Get found

Title, abstract and keywords are the ‘metadata’ of your article:

• Use terms that readers will search for (buzzwords?)
• Use terms aligned with major indexing services

**Article Title**

“An experimental study on evacuated tube solar collector using supercritical CO2”

**Keywords**

Solar collector; supercritical CO2; solar energy; solar thermal utilization

Spread the word: use social media to its full potential
Getting read: Grab their attention

The title of a paper acts as a gateway to its content. It’s the first thing potential readers of the paper see, before deciding to move on to the abstract or full text. As academic authors want to maximize the readership of their papers it is unsurprising that they usually take a lot of care in choosing an appropriate title. But what makes a title draw in citations?

Is longer better?

Bibliometric analyses can be used to illuminate the influence of titles on citations. Jamali and Nikzad, for example, found differences between the citation rates of articles with different types of titles. In particular, they found that articles with a question mark or colon in their title tend to be cited less\(^1\). The authors noted that “no significant correlation was found between title length and citations”, a result conflicting with another study by Habibzadeh and Yadollahie finding that “longer titles seem to be associated with higher citation rates”\(^2\).
Getting read: Draw them in

Percentage of published authors answering extremely/very important to*: “How important were the following parts of the article?”

- Abstract: 81%
- Introduction: 48%
- Methodology: 66%
- Results: 76%
- Discussion: 66%
- Data: 60%
- Figures: 58%
- References: 41%

* Survey of 1,460 published authors in November 2012
Getting credit: What’s in a name?

Use a unique name consistently throughout your career:

• Register for an ORCID (Open Researcher and Contributor ID)

• Create and maintain an online CV

• Use a standardised institutional affiliation and address

orcid.org
Getting credit: What’s in a name?

"A woman who took her partner’s name or a hyphenated name was judged as more caring, more dependent, less intelligent, more emotional, less competent, and less ambitious in comparison with a woman who kept her own name", according to a recent Dutch study. And, it gets worse: "[The monthly salary of a] job applicant who took her partner’s name [...] was estimated €661.21 lower (calculated to a working life, €361,708.20)."

Yes, there seem to be some methodological issues with the study. Only Dutch subjects were involved, so this could possibly only apply to Dutch society. There seem to be indications that "Americans overwhelmingly believe a woman should take her husband’s name". Moreover, how would anyone in your working life know whether the name you use is your married name or your maiden name? But still, the matter is intriguing and leads Research Trends to wonder: how about changing your name in academia? Does that have positive or negative effects, if any?

Name changes in academia: Dr Who?

In academia, research suggests that changing your name when you marry "can inhibit dissemination of published work". In this paper, a fictitious example is given for Kathryn E. Jones, who married and became Kathryn Dalton-Jones. Divorced, she adopted the name Kathryn Elizabeth Jones again, and after re-marrying, she became Kathryn Jones Smith. This means that she is now referenced as "Jones, K.E.", "Dalton-Jones, K.", "Dalton, K.J.", "Smith, K." and "Smith, K.J.". This example makes abundantly clear that..."
Getting credit: Give it to get it

Cited references are an acknowledgement of what has gone before - of intellectual debt:

• Comprehensively reference the literature
• Make only appropriate references
• Don’t be tempted to self-cite for its own sake


Figure 2. Log_{10}-Log_{10} Correlation between References and Citations in Articles Published in Evolution and Human Behavior, 1979-2002.
Citation impact metrics

- Impact metrics are used to measure research impact for benchmarking and quality comparison purposes
- Metrics allow us to measure research impact at a variety of different levels:
- Problems arise when metrics are used for assessment in ways they weren’t intended for

General Recommendation

1. Do not use journal-based metrics, such as Journal Impact Factors, as a surrogate measure of the quality of individual research articles, to assess an individual scientist’s contributions, or in hiring, promotion, or funding decisions.
Journal-level citation metrics

Journal Impact Factor

A ratio between citations and recent citable items published in a journal; the average number of citations received per published article.

Source Normalized Impact per Paper

There is no single “best” indicator that could accommodate all facets of the new reality of journal metrics.

EigenFactor

SCImago Journal Rank
Journal-level citation metrics

**Journal Impact Factor**

- Easy to calculate
- Numerator & denominator misaligned
- Brief citation window
- Field dependent metric
- Can be easily manipulated

**SNIP**

- Complex calculation
- Easy-to-understand value
- Normalized to local citation environment
- Enables comparison across fields
- Available for more journals

**eigenFACTOR**

- Complex calculation
- Measures journal prestige
- Self-citations are limited
- Larger citation window
- Journal size influences score

**SJR**

- Complex calculation
- Easy-to-understand value
- Measures journal prestige
- Self-citations are limited in effect
- Available for more journals
Emerging alternatives

Changing focus
*e.g. Author-level metrics*

Tracking new data
*e.g. Altmetrics*

Expanding our view
*e.g. Journal Insights*