

## ☰ White Paper

# How to safeguard and increase your impact factor

In this white paper, we examine the markers of a reputable journal within the context of a growing research landscape. The impact factor drives the ecosystem between researcher, institution, and publisher. Publisher reputation is driven by citations, selectivity, and wide circulation. Institutional reputation is driven by appearances in high impact factor journals and association with prestige. And researchers are driven to publish in high impact journals so as to meet their own funding needs, further research, and secure career promotions.

We provide an overview of present-day research and publishing industry factors and the rising stakes of academic integrity therein. What are success factors, how can they be achieved, and moreover, how can they be sustained as the research landscape becomes more competitive?

In sum: how can you safeguard and increase your impact factor?

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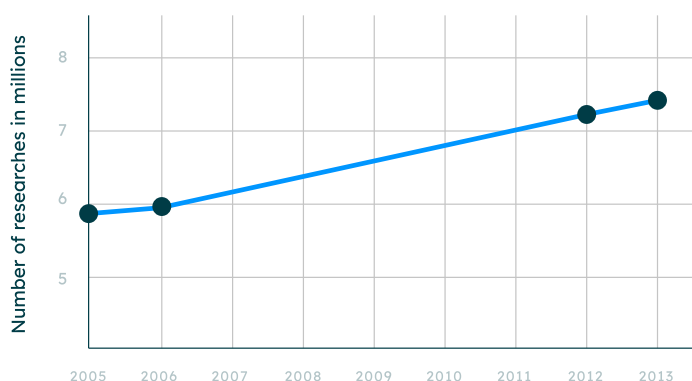
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# The current academic research and publishing landscape

The latest UNESCO report from 2013 estimates [7.8 million scientific researchers in the world](#) (UNESCO, 2015, p. 33). As of September 2019, the global spending on development touched the equivalent of 1.7 trillion US dollars (1.3 trillion British Pounds and 2.5 trillion Australian Dollars). These numbers are all expected to rise, with new initiatives promoting increased spending and increased numbers of researchers by 2030. Research is thriving and, with funding in place, set to accelerate.

## Growth in global researcher population 2005-2013



Growth has already begun. [Between 2008 and 2014, scientific articles increased 23%](#), according to the number of scientific articles catalogued in the Science Citation Index of Thomson Reuters' Web of Science.

This growth speaks to a continually healthy publishing market, which is welcome news to the world of research and publishing. At the same time, with growth comes more variables, and with more variables, complications. Bottom line: researchers and publishers must stay vigilant. What might these variables and complications be?

The number of researchers will certainly increase. There were 7.8 million recorded scientific researchers in 2013; by 2030, a significant percentage more are expected to exist—and along with that, fiercer competition for publishing opportunities. Consequently, impact factors—which measure the importance or rank of a journal based on how many times its articles are cited—and reputation will remain a significant component in selection, for both researchers and publishers, in a crowded field.

Open access (OA) repositories will increase in number to meet the demands of research and submissions. According to a [Physics Today](#) article, “The growth of OA is largely driven by dozens of governments around the globe that have mandated free access to the results of publicly funded research” (Kramer, 2017, p. 24).

In addition to governmental requirements, studies have confirmed that OA articles gain more traffic and citations. Per [McCabe and Snyder’s \(2014\) article](#) in *Economic Inquiry*, “moving from paid to open access increases cites [sic] by 8% on average” (n.p.). Another study by [Piwowar, Priem, Larivière, et al. \(2018\)](#), examining the citation impact of OA articles and “open-access citation advantage” found that “OA articles receive 18% more citations than average” (n.p.).

As more researchers are looking to open access to increase views and citations, publication ethics will take on a more significant role when it comes to citation accuracy. As stated, research consistently indicates a relationship between open access and increased citations, however and whatever the context. In fact, as the number of articles and journals increase, it is likely that subscription journal articles may cite open access articles with more frequency. Consequently, the importance of accurate citations and avoidance of plagiarism will become even higher stakes.

Finally, academic integrity will continue to be an ongoing marker of success, regardless of landscape change. In a [survey conducted by COPE \(2019\)](#), 50% of journals said they’d “encountered self-plagiarism with 22% saying it arose frequently. Editors reported that this was likely to increase with the current academic culture of measuring outputs” (p. 4). Journal editors also believed authorship and attribution issues would increase. Needless to say, self-plagiarism, academic integrity, and attribution were top concerns for editors as reported in the survey.

### Academic integrity-related publishing ethics challenges faced by journal editors\*



■ \* as reported by COPE Key Findings Document

As competition increases, and variables and complications flood the publishing landscape, the importance of developing a strong impact factor heightens. The impact factor of researchers and publishers will become higher stakes in a growing and selective research terrain that seeks innovative, impactful, and quality content.

# The importance of the Impact Factor: the relationship between research, publishing, and their impact factor

Bottom line, academic research and publishing seeks quality content—and this content is determined by the impact the research has on the field of study—an impact often quantified by the number of citations the article garners.

One way in which the above criteria is codified is with the widely used impact factor, which incorporates citations into its calculus. The impact factor has been around since 1955. Eugene Garfield, who defined the system, [recently described](#) it as such:

*"The term 'impact factor' has gradually evolved to describe both journal and author impact. Journal impact factors generally involve relatively large populations of articles and citations. Individual authors generally produce smaller numbers of articles, although some have published a phenomenal number." (2006, p. 90). Garfield says that "a journal's impact factor is based on 2 elements: the numerator, which is the number of citations in the current year to items published in the previous 2 years, and the denominator, which is the number of substantive articles and reviews published in the same 2 years." (2006, p. 90).*

Alternative scoring formats too, have risen. In 2016, Elsevier unveiled the [CiteScore index](#), a measure of journal performance based on the number of recent citations. Other metrics include the [SCImago Journal Rank \(SJR\)](#) and [Source Normalized Impact per Paper \(SNIP\)](#) (2017).

## Citation-based scoring system



<b>SCImago Journal Rank (SJR)</b>	<b>CiteScore</b>
<b>Source Normalized Impact per Paper (SNIP)</b>	<b>Journal Impact Factor</b>

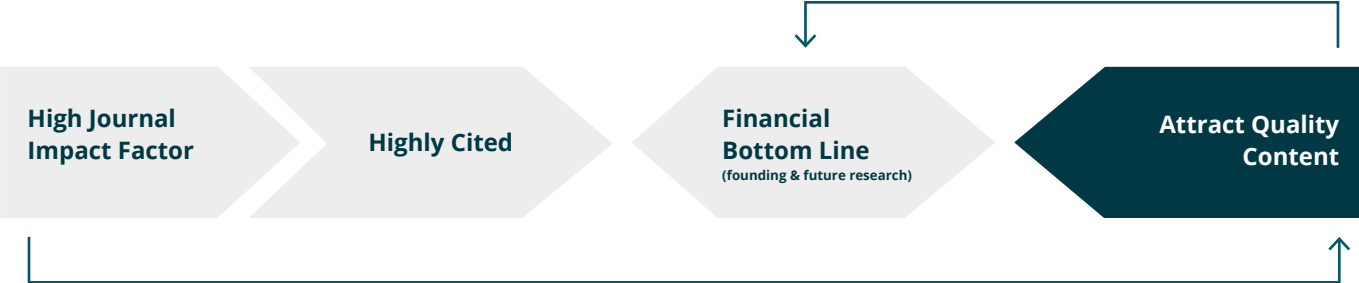
All of these measurements use citation frequency as part of their calculation—perhaps as a challenge to the traditional journal impact factor. As Antelman (2004) states, *"It is well known that despite the fact that journal-level impact factors are routinely used to evaluate authors of individual articles, 'journal impact factors correlate poorly with actual citations of individual articles'" (p. 380).*

Additionally, the impact factor permeates the entire spectrum of publishing, research, and institutions, all of which depend on reputation to sustain themselves.

From the institution’s perspective, research is comprised of grants and recruiting of top researchers—all which support an institution’s reputation and thus revenue. The more its research finds its way to being cited and to journals with a high impact factor, the more an institution can support research and recruitment.

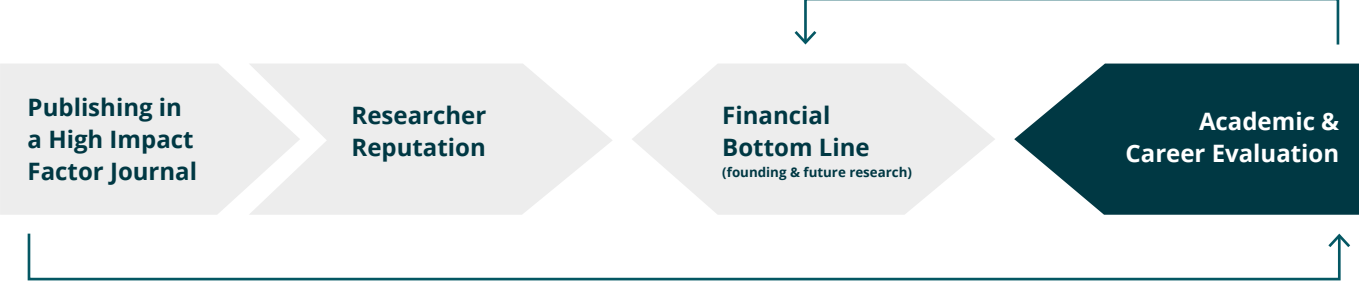
From the publisher’s perspective, reputation, efficiency (such as streamlining processes), wide circulation, well-known editors and editorial board, and targeting the “right content” (reputable authors and highly citable content) are core to their financial bottom line. A journal with a higher impact factor will be highly cited and continue to attract quality content.

**A publisher’s relationship to Impact Factor**



From the researcher’s perspective, publishing in journals with a high impact factor affects their own academic reputation and evaluation. Being associated with a high impact factor has a direct influence on a researcher’s financial resources and future research opportunities.

**A researcher’s relationship to Impact Factor**



Journal impact factors weigh heavily in academic evaluations for researchers, according to Nick Mayo (2019) in Times Higher Education, who states, *“At least one in three research-intensive universities in North America examined by a study leaned on the journal impact factor of periodicals that academics had published in when making decisions on promotion and tenure, but the true proportion may be much higher.”*

Mayo’s conclusions stem from [research that discovered 23 percent of review](#), promotion, and tenure reports mentioned the journal impact factor. *“87 percent of the institutions that mentioned the JIF [Journal Impact Factor] supported the metric’s use in at least one of their RPT [Review, Promotion, and Tenure] documents”* (McKiernan, Schimanski, Nieves, Matthias, Niles, & Alperin, 2019, p. 1).

Klingner, Scanlon, and Pressley acknowledge the existence of such practices in their Educational Researcher article: *“An even more practical reason to publish, however, is that many professional opportunities follow directly from publications. Academic job-seekers are at a competitive advantage when they can demonstrate a record of productivity with publications in an area of claimed expertise. The odds for tenure increase if you have published the number of articles considered adequate by your institution, if the publications reflect a clear programmatic focus, and if the articles appear in journals of the type and quality that your colleagues value”* (2005, p. 14).

For researchers, the prestige of the journals in which they publish is directly linked to their own success, whether it is a faculty evaluation at their institution or continued publication. As for publishers, reputation will decide whether they continue to attract high impact research and articles—not to mention continued funding. Impact factor is a significant component of academic careers.

# Open access repositories and alternative forums

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Researchers also make publishing choices by considering [variables outside of the impact factor](#), as detailed by University of Michigan's research guide. These variables include audience, peer review, journal indexing, circulation count, acceptance, timeline to publication, and the prestige of a journal's editorial board—components not included in the impact factor (2019).

Open access repositories have become a growing and popular choice for publication, especially given increasing open access's "citation advantage." If, states [Rick Anderson in The Scholarly Kitchen](#), *"a cure for cancer were found and a resulting highly technical (thus, less accessible) paper were published in a very expensive toll-access (thus, less open) journal, we could expect that its impact in the world would be small—unless the privileged few who are able to read it are practicing oncologists, in which case the impact of the article would be felt by a great many people regardless of it being less open and less accessible"* (2019).

In fact, Rick Anderson states, *"It's obvious that a paper has more capacity to affect people and systems if it's more broadly available, even if not everyone who has access to it is equipped to take full advantage of the content; if everything about the above cancer-journal scenario were the same except that the journal were open access (OA), there's no rational reason for its openness to decrease the impact of the findings; if anything, it should increase the impact"* (2019).

In this way, open access should increase impact, as open access repositories are more accessible and thus, have the potential to be widely read. Open access repositories, in the growing scope of research and funding, will continue to increase by meeting the demands of increasing researchers and diverse research that high impact factor journals may overlook. In doing so, such articles will reach an audience that may not otherwise have access to information.

All journals, regardless of openness and regardless of metric, are pursuing citations as a marker of prestige—so what are differentiating factors?

Let's take a look at academic integrity.



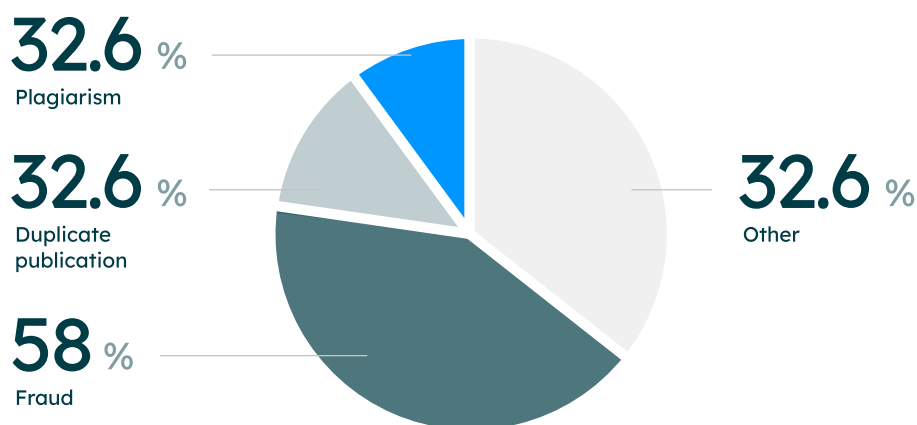
# Academic misconduct as a threat to reputation and Impact Factor

Academic integrity is the foundation upon which research and publishing is based. Journals expect research to be valid and original. Readers assume the same. Likewise, institutions stand behind outgoing research, entrusting that the research is without misconduct. This trust and confidence in research should be ensured.

Publishers are the last line of review in the long process of research and publishing. It's easy to assume that a piece of research contains neither academic misconduct nor plagiarism. In fact, a publisher should review research away from the cloud of suspicion and instead with an eye towards the research's innovation. And yet—despite peer review and editorial review—sometimes an article with evidence of academic misconduct is published.

When a research paper without merit is published, retractions are enacted as a last resort—this very visible correction is one publishers try hard to avoid. Richard Van Noorden calls retraction both “the ultimate post-publication punishment” and “the official declaration that a paper is so flawed that it must be withdrawn from the literature” (2011, p. 26).

## Reasons for Retracted Publications Other



In 2018, Science published a report on the state of retractions in an article entitled “[What a Massive Database of Retracted Papers Reveals about Science Publishing’s ‘Death Penalty.’](#)” In their article, Brainard and You (2018) state that while the rate of retractions has decreased over the last 10 years, remaining level since 2012, the pure number of retractions has increased (n.p.). Given that research is set to increase at unprecedented funding and numbers, publishing must be poised to mitigate retractions. Brainard and You credit a community that has begun to police itself, adding that “many journals now use software to detect plagiarism in manuscripts before publication which can avoid retractions after” (2018, n.p.).

Additionally, the title of Brainard and You's article more than suggests the negative impact of retractions by calling them "publishing's death penalty." Brainard and You report that "Just 500 of more than 30,000 authors named in the retraction database (which includes co-authors) account for about one-quarter of the 10,500 retractions we analyzed. One hundred of those authors have 3 or more retractions each. Those withdrawals are usually the result of deliberate misconduct, not errors" (2018, n.p.).

Curiously, [journals with high impact factors have higher retraction rates](#). Researchers Fang and Casadevall investigated the link between high impact journals and higher retraction rates, citing researcher pressure to publish and ensuing short cuts (2011, p. 7). Thus, selective journals may receive a higher number of articles containing misconduct.

Another possible link between high impact journals and high retraction rates may be the fact that many papers, according to Retraction Watch, "[receive more citations after they were retracted](#)" (2019). In fact, as far back as 1975, Joseph Arditti, a biologist at the University of California, Irvine wrote a letter to the editor in which he stated, "*consider a paper that is criticized widely for being simply bad. It will be cited often, but citation analysis will not indicate that these citations were for the purpose of criticizing it*" (1975, p. 1064).

Journals may feel that there is no punishment for retractions, if their reputation is based solely on their impact factor, which does not take retractions into account. Additionally, if retractions don't affect citations in a negative way, why even stop them?

Not addressing integrity and misconduct furthers inequity and selectivity merely for selectivity's sake, instead of furthering research in meaningful ways. Journals must take a hard stand for academic integrity, especially as the landscape becomes increasingly competitive.

Retractions are a long-standing stain on a publisher's, researcher's, and institution's reputation. In a competitive field, academic integrity becomes a differentiating factor for both publishers and researchers. Academic integrity is high stakes for all journals.

# Safeguarding your reputation

As stated, the impact factor drives the ecosystem between researcher, institution, and publisher. Publisher reputation is driven by citations, selectivity, and wide circulation. Institutional reputation is driven by appearances in high impact factor journals and association with prestige. And researchers are driven to publish in high impact journals so as to meet their own funding needs, further research, and secure career promotions.

A journal's impact factor, while independent from academic integrity in its metrics, can be negated by academic integrity issues in the form of retractions. A researcher's impact factor, too, is informed by citations—but academic misconduct can have lasting consequences on a researcher's reputation and consequent research, despite a prestigious reputation.

So how can one safeguard one's impact factor?

**Here are ways publishers can continue to improve their impact factor through specific process decisions, upholding academic integrity, and marketing efforts.**

To protect their reputations, publishers must review incoming submissions without a cloud of suspicion; they must instead focus on quality. Incoming submissions must inform content needs and the best authors. But that said, if publishers overlook academic misconduct in review, this can have huge negative outcomes—impacting the financial bottom line and reputation of the journal.

Publication ethics will take on a larger role within academic publishing. In 2009, the Committee on Publication Ethics (COPE), published [retraction guidelines for academic publishers](#), creating a central hub for ethics standards. In 2019, COPE released information on research surrounding [top publishing ethics challenges faced by journal editors](#). When asked "what situations or behaviors may cause ethical issues in five years' time," editors responded, "Authorship and attribution issues and problems with peer review are expected to increase" (COPE, 2019).

<b>Top publishing ethics challenges as stated by journal editors*</b> <small>* according to COPE</small>	<b>58% of respondents encountered issues with plagiarism and poor attribution standards.</b>
<b>Respondents said the most serious issues were detecting plagiarism and poor attribution, fraudulent submissions, and data and/or image fabrication issues.</b>	<b>Authorship and attribution issues and problems with peer review are expected to increase.</b>
<b>50% of the respondents had encountered self-plagiarism with 22% saying it arose frequently.</b>	<b>44% said they felt fraudulent submissions were among the most serious issues.</b>

[Onwuegbuzie, Frels, and Slate \(2010\)](#) researched citation errors and found, "Citation errors do not only reflect poorly on the author(s) (primarily) and editor(s) of a journal (secondarily), they also reflect poorly on the publisher and publishing team" (p. xx). Proper citation and attribution is a core component of safeguarding both the researcher and the journal's reputation.

### **Ethical methodology leads to excellent research articles, the basis of increased impact factor.**

These suggestions include:

- Crystalizing a journal's niche in the field.
- Publishing position papers that set the standard within your field.
- Streamlining revision processes and feedback communication throughout.
- Retaining excellent editors on staff.
- Inviting contributions from luminaries in the field.
- Organizing special issues with efficiency and cohesiveness with existing editorial staff.
- Focusing on publishing quality over quantity.
- Indexing articles with relevant scholarly search engines, and making articles easy to find.
- Multiple authors on articles, which will draw more readers.
- Considering articles that would encourage more citations—such as special issues or reviews.
- Publishing earlier in the year so as to encourage more citations.

Journals too can increase visibility via **publicity**. In a white paper entitled "[Where is the publication puck going? Making research available 'upstream' of publication](#)," Kudos led a research study on researcher expectations when it comes to project communication. Researchers who believe "*if research ends with a publication this severely impedes its reach*," depend on publications to further research (Rapple, 2019). In fact, according to the study, "*95% of respondents considered that being able to demonstrate broader communications and impacts was important to their future funding and career progression*" (Rapple, 2019).

If impact factor is a shared goal of publishers, researchers, and institutions, and if a journal wants to nurture a relationship with researchers, communication and publicity can increase impact factors for both parties, while strengthening the researcher-publisher relationship.

### **Here are ways researchers can improve their odds of having articles accepted, published, and cited.**

Academic integrity is a significant component of a researcher's reputation—and this matters down to citation errors. According to [research by Onwuegbuzie \(2010\)](#), "*Authors who made more than three citation errors [were] approximately four times more likely (odds rate = 4.01; 95% confidence interval = 1.22, 13.17) to have their manuscripts rejected than were authors who made three or fewer citation errors*" (p. iii).

There are other nuances, too, that heighten an article's visibility before and after publication. For example, in a [recent machine learning-based research article](#), Mohamed Elgendi breaks down the influences of title length, the number of authors, and the number of tables as they pertain to the likelihood of citation (Elgendi, 2019). He condensed his research into a list for Nature Index, in which he states the [5 features of a highly cited article](#):

1. "A title of 7-13 words
2. Common words in the titles of highly cited papers
3. Six authors or more
4. 35,000 characters (no spaces) at a minimum
5. Six figures and two tables at a minimum" (2019).

The possibilities abound for **post-publication publicity**. Along with the rise of open access repositories, online forums have taken on an increasing communication role, alongside traditional media. Researchers are no longer operating only within the traditional academic community, and now have access to a larger audience—and the lay audience, in return, now has access to research outside of mainstream journalistic formats. Not only do publishers and researchers now have direct and broader access, but they also have control over their own messaging.

*In sum, "With the rapid development of new media technologies, more people are turning to online sources to seek information about science and scientific development. Unlike traditional print and broadcast media, new web-based platforms have made it possible for audiences to step out of their passive roles and connect with the communicators themselves" (Erdt, Aung, Aw, Rapple, & Theng, 2017, p. 1). Additionally, platforms like ResearchGate and Twitter can gain a journal or researcher more readers, citations, and social impact. (Ortega, 2017, p. 1). Consequently, publicity and visibility of research have the potential to increase dramatically.*

Researchers and publishers no longer depend on mainstream journalism as a proxy through which to communicate to audiences. Web-based media enables direct access to readers—and has opened up communication and potential for citations, and thus increased impact factor.

Regardless, academic integrity is an ever-present factor in this new realm of web-based media. Increased access also comes with increased visibility when it comes to scandal, something a researcher or journal must avoid.

# Conclusion

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The publishing and academic research landscape is blessed with both funding and innovation—ingredients for growth and change in the form of increased research, increased article submissions, and the rise of open access journals. These changes can be positive, so long as publishers and researchers stay vigilant and prepare for the onslaught of opportunities and competition.

Venues will increase alongside the number of articles, making reputation and academic integrity all the more important as differentiators in selection. No matter how impact factors are calculated—the Journal Impact Factor will continue to be both lauded and challenged—academic integrity and citation rates will remain critical factors in a journal and researcher’s reputation, longevity, and impact on future research.

Open access repositories and their effect on citation rates will make their mark on future research—they already have begun to do so. Research funding is at historical highs, producing a plethora of research output and a need for greater publication outlets. Furthermore, open access increases research exposure and influence on subsequent studies. As a result, the trend of open access growth will likely continue.

Forums and communication are evolving and citations from open access articles have entered the landscape; as a result, academic integrity will become higher stakes than ever. The accessibility of research articles is increasing, which is, overall, a positive thing; but we must ensure that what is being cited is true.

**Find out how iThenticate will help you safeguard your impact factor and publish with confidence. Check out [iThenticate](#).**

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