

An apologia for using journal prestige in academic employment decisions: An asymmetric information perspective

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Using journal prestige to gauge the quality of research articles has been criticized by some scholars in the academic research assessment literature. These critics argue that citation-based metrics, while imperfect, are better suited to assessing article quality. This paper counters these beliefs by describing specific research assessment contexts where journal prestige is likely to be the superior mode of assessment. To do so, academic employment decisions are framed as asymmetric information problems wherein the research evaluating body has less information about a scholar's true abilities than the scholar. Signaling Theory therefore offers a logical explanation for using journal prestige as a measure of research quality during academic contract renewals and promotions wherein recent research accomplishments are of preeminent importance. While journal prestige is an imperfect measure of article quality (as are citation counts), understanding it as a credible signal in an asymmetric information environment proffers a fundamental explanation for its applicability in academic assessment decisions.

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1. Introduction

Academic research assessment is not a simple manner. Scholarly output takes many forms, which vary by field and sub-field. The focus herein is academic journal articles, arguably the modal form of scholarly output in the hard and social sciences. Within the realm of academic articles, assessment practices have been debated at length. One such debate concerns the best manner to summarize article quality. The two most common summary approaches

use citation counts or journal prestige to gauge the article's quality. Both are imperfect, but some researchers (e.g., Seglen, 1997; Oswald, 2007, DORA Declaration) have largely dismissed journal prestige as germane in academic assessment settings. The purpose of this article is to rebut these beliefs by outlining academic employment settings wherein journal prestige is almost surely the better mode of assessment. The justification for this apologia is anchored in Signaling Theory (Spence, 1973).

1.1 *When Citations Falter*

The goal here is not to undermine the role of citations in the assessment process, but rather to highlight settings wherein they are not especially effective. For citation counts to be effective assessment measures, they need to be free from coercive citations (e.g., Wilhite and Fong, 2012), collusive citations (e.g., Aksnes and Rip, 2009; Haley, 2017), search utilities differences (e.g., Haley, 2014), self-citations (e.g., Haley, 2019a), negative citations and positive citations of retracted articles (e.g., Bar-Ilan and Halevi, 2017), field-specific database biases (e.g., Eisenberg and Wells, 2014), citation differentials between applied vs theoretical articles (e.g., Anauati et. al., 2016), and citation differentials across fields (e.g., Haley, 2016). Additionally, Haley and McGee (2020) argue that focusing on citations (and functions thereof) alone is philosophically narrow and they suggest a multi-dimensional assessment paradigm built on axioms.

An additional issue, of special relevance to this paper, concerns how citation counts are often slow to develop and are inevitably truncated at many career employment decision milestones where they could conceivably be of use, if they were fully developed and otherwise sound. To demonstrate this point, consider the promotion-renewal-tenure-merit-awards (PRTMA) processes, a professor at a typical US university encounters. Contract renewal processes, for example, occur at 1-3 year intervals leading up to a tenure decision and then recur at similar intervals for post-tenure review processes, merit, additional promotions, awards, endowments, and grant competitions. A notable feature of most, if not all, of these PRTMA considerations, is the depth and breadth of a scholar's accomplishments since his/her last evaluation. The emphasis on *recent* accomplishments undermines the usefulness of citation-based assessment for at least three important reasons. First, citations of new articles are often slow to work through the publication system; relatedly, these delays can differ across fields, journals/editors, and therefore across scholars. Second, early citation counts do not necessarily correlate strongly with an article's lifetime citation count (Wang, 2013). Third, it is not uncommon for a scholar's most recent work to have zero citations if, for example, the article has been accepted (i.e., forthcoming) but has not yet been put into production by the journal.

In contrast to scholar-specific citation counts, journal prestige offers usable information germane to the quality of the article immediately upon acceptance (Sgroi and Oswald, 2013; Haley 2019a, 2019b). There is no waiting period for journal prestige to necessarily mature because, unlike scholar-specific citation counts, journal-level citation counts (e.g., Hirsch, 2005; Egghe, 2006; Bornmann et. al., 2011; Perry and Reny, 2016), and metrics built

thereupon, do not typically suffer from the truncation issues outlined above¹. While journal quality is an imperfect measure of article quality (e.g., Seglen, 1997; Oswald, 2007; DORA), it is arguably less flawed than citation counts in the short-time domains outlined above.

2. Asymmetric Information

Is the use of journal prestige logical in the absence of well-developed citation information? Signaling Theory suggests that the answer is yes. Signaling Theory was developed by Nobel Laureate Michael Spence in 1973 as a solution to the asymmetric information problems inherent to the hiring process, wherein firms have less information about a job applicant's true abilities than the applicant. The firm's hiring committee, being at the informational disadvantage, seeks mechanisms that induce the candidate to reveal their true ability level (e.g., whether the applicant has high- or low-level skills). This is a conundrum for the hiring committee because all applicant skill-types want to be perceived as having high skills. As such, the firm cannot *prima facie* distinguish high-skill applicants from low-skill applicants, which is frustrating for both the hiring committee and high-skill job applicants.

This informational disparity about worker ability can be eased if the job applicants choose to emit a credible job-market signal of their true ability level. A credible job-market signal allows high-skill applicants to distinguish themselves from low-skill applicants, and therefore the signal helps firms see who really is and who really is not a high-skill worker. For job-market signaling to be successful, the signal must be credible, which means it must satisfy the following conditions:

- C1. *Applicability*: A useful signal should be germane to the skills of the job vacancy.
- C2. *Differentially Costly*: The signal needs to be more costly to obtain for low-skill applicants than for high-skill applicants.
- C3. *Discernability*: The firm needs to be able to recognize and correctly interpret the signal being sent by the applicant.
- C4. *Verifiability*: The firm needs to be able to verify that the signal was legitimately acquired by the applicant.

A college degree in a relevant field from a reputed university is a common example of a credible signal in many hiring settings. In contrast, simply having job applicants assert that they are high-skill types is not a credible signal because it is equally costless for high and low types, and therefore has no power to distinguish between types. Effectively, conditions C1-C4 serve as a type of quality assurance check on prospective signals.

¹ It is worth noting that citation-truncation issues may arise for newly formed journals; however, a scholar is under no obligation to submit articles to such journals.

Spence's job-marketing signaling idea also matches well to the academic assessment processes surrounding employment, merit, and award decisions. Early-career renewal and tenure decisions can be characterized as asymmetric information problems wherein the PRTMA committee has less information about a candidate's true abilities (e.g., IQ, work ethic, creativity, technical skills) than does the candidate. Further complicating matters is that PRTMA committees may be populated with administrators and/or scholars from different fields, which limits the PRTMA committee's ability to discern research quality by direct assessment (e.g., reading it themselves). Citations, if present, can help ease information symmetry; i.e., the PRTMA committee may interpret citations as a credible signal of ability because ability, research quality, and citations are generally thought to be positively correlated. However, truncated or under-developed citation counts are not necessarily credible signals because they may not meet conditions C2-C4. Given these shortcomings, a logical question arises: Is journal prestige a better signal in these settings? Exploring this question is the topic of the next section.

3. Bibliometric Signaling

Like the firm in Spence's job-market signaling paradigm, the PRTMA committee needs to determine if a candidate meets a research standard, however defined, and the candidate wants to convince the PRTMA committee that he/she is a high-skill worker and therefore worthy of renewal, promotion, or tenure, etc. Accordingly, candidates should pursue activities that function as credible signals (see conditions C1-C4) of their high-skill nature.

One such possible signal is publishing their research in prestigious journals. But does this satisfy conditions C1-C4?² The journal's, scope, editorial board, and published topics can convey whether the candidate's research efforts are in an area germane to the PRTMA objectives, which satisfies C1. Journals with higher levels of prestige typically have higher editorial and referee standards, requiring more time, effort, creativity, and technical skills than less visible journals; as such, C2 is met. The PRTMA committee can recognize the prestige level of the journal without much hardship, and the PRTMA committee can verify that the research was indeed published in the claimed journal. Moreover, journal prestige measures are easily interpreted across different candidates and different fields pursuant to suitable normalization (Pudovkin and Garfield, 2004; Iglesias and Pecharromán, 2007; Radicchi et. al., 2008; Schreiber, 2008; Alonso et. al., 2009; Leydesdorff et. al., 2013; Haley and McGee, 2018). Accordingly, C3 and C4 are met.

Condition C2 warrants extra discussion. A PRTMA committee aspires to renew, tenure, and promote scholars who have displayed competence and promise future research success. Both issues center on ability, like Spence's focus in job-market signaling. As such, using journal prestige requires PRTMA committees to assume that, on average, it takes

² Firms also use Screening to help discern work type; however, journal prestige is best interpreted as a signal because the scholar chooses the journal.

higher ability, effort, etc., to publish in a prestigious journal versus a low-level journal. While this assumption may be more strikingly valid in some fields than others, it is nearly impossible to believe the reverse is true in *any* field, i.e., that scholars with lower ability exerting less effort and creativity are better able to publish in the most prestigious journals.

3.1 *Developed Citations*

The narrative above centred on the case where citation counts are absent or under-developed, as is often the case in early-career academic employment decisions. More generally, these same arguments apply to cases where only the most recent research accomplishments matter in the assessment process. The usefulness of journal prestige in these settings leads to a larger question: Does journal prestige have standing when citation counts are well-developed? Conditions C1–C4 help bring an answer into focus. Specifically, C2 (Differentially Costly) casts aspersions on the signal quality of citation counts, even when they are fully developed. For example, a low-skill scholar might accumulate X citations in a low-skill applied area, whereas a high-skill scholar might accumulate X skills in a rigorous theoretical area. Assuming the goal is to discern ability, would a PRTMA committee be able to distinguish between these two scholars by citation count alone? Or, put differently, citation count would not be a credible signal of ability in this setting. In contrast, journal prestige can more clearly distinguish ability because of its clearer allegiance to C2³. More generally, placing emphasis on journal prestige greatly simplifies the research assessment process. There is no PRTMA need for citation counts and the myriad data issues that accompany them.

4. Discussion and Conclusions

This paper frames PRTMA committee deliberations as decisions involving asymmetric information wherein the PRTMA committee is at the informational disadvantage and the candidate, which holds the informational advantage, seeks to credibly reveal their high-skill nature, if present, using a credible signal. Credible signals may be especially useful in academic employment considerations characterized by short time domains wherein citations have not had time to accumulate due to “young” papers only recently accepted, which in turn may face idiosyncratic publication and citation delays. This paper argues that journal prestige can serve as a credible signal of research ability (e.g., creativity, work ethic, technical skill, writing ability) in these PRTMA decision environments. Citation counts, while potentially useful when fully developed, struggle to meet the criteria of a credible signal of ability and entail many nuanced data management practices that may or may not be well understood by PRTMA committees. In summary, the paper connects journal prestige with the practical needs of PRTMA committees using Signaling Theory (Spence, 1973). While these arguments may seem logical among economists, the bibliometric literature

³ Relatedly, recent experimental evidence highlights how adding low-level publications to an otherwise high-level publication list actually lowers overall ratings of the scholar (Nattavudh et al, 2018).

has surprisingly negative feelings about using journal prestige for article assessment; this dissonance motivated the presentation herein.

As with all assessment-based research articles, it is important to caveat the proposed arguments. The goal is not to eclipse citation-based research assessment but to offer a theory-based way to guide the joint and nuanced usage of citation counts and journal prestige in the assessment setting. Both can be interpreted as signals of underlying ability, but neither is a panacea.

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