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Assessing the enduring impact of influential papers

Martin Eisend · Donald R. Lehmann

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Abstract This paper investigates citations of influential papers in the marketing and management area. These papers are successful in terms of the direct citations they receive (i.e., primary citations). To be truly influential, however, the papers citing them must in turn be used and cited by subsequent papers (i.e., have secondary citations) to demonstrate their long-run relevance. We propose a measure of *enduring impact* that takes into account (1) both primary and secondary citations and (2) the number of citations in the bibliography. The measure is non-linearly (exponentially) related to the traditional influence measure (i.e., primary citations to a paper) and captures the dissemination of knowledge from a paper more completely than cumulative or average primary citations.

Keywords Impact factor · Primary and secondary citations · Knowledge dissemination · Research performance assessment · Bibliometrics

1 Introduction

Citations have become a common instrument for research evaluation, resourcing, recruitment, and promotion (e.g., Groot and García-Valderrama 2006; Rinia et al. 1998). The most commonly used source of bibliometric data to assess a paper's impact—and thus performance by scientists—is the number of citations a paper receives as reported in the Thomson ISI (Social) Science Citation Index (SSCI).

Citations have been criticized as an insufficient indicator of academic performance (Aksnes and Rip 2009; Seglen 1997). One limitation of citation indicators is the differing referencing traditions of individual (sub-)disciplines (in terms of the number of citations and the immediacy of citations) which renders comparisons across disciplines difficult (e.g., Hargens and Schuman 1990; Martin and Skea 1992). Further,

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citations are driven by more than academic quality and contribution. Rather, they also reflect intellectual influence and the reputation of authors, schools, or journals (Stremersch et al. 2007; Judge et al. 2007). In addition, not all citations reflect acceptance of ideas: articles may be cited in order to critique them (Croom 1970). Concerns have also been expressed about the potential for strategizing citations to increase impact factors of journals. For instance, a problematic practice that has developed is for some journals to artificially drive up citations to articles in it by citing papers in their journals in editorials or in related conference proceedings. Citations are also driven up by coercive citations, that is, citations to articles in the same journal outlet that have been added by authors upon request from editors. Wilhite and Fong (2012) point to several business journals as being among the worst offenders. Taken together, therefore, citations and traditional impact factors that are measured by the average number of times articles from a specific journal are cited have fundamental limitations as performance measures (Aksnes and Rip 2009). At the same time, the field needs simple measures to help evaluate academic performance.

The concept we seek to measure is *enduring impact*. For a paper or person to matter in the long run, they need not only to influence direct citations/ties but also to have that influence span generations. For example, some historical figures have been important during their lifetimes but long since forgotten by most (e.g., the later Roman emperors) while others' reputations and influence have endured (e.g., George Washington). In marketing, Frank Bass has influenced the field not just through the almost 60 students whose dissertations he supervised but also through the hundreds of students these students subsequently supervised. Consequently, we define impact in terms of not only immediate impact but also indirect impact/ties.

We provide a measure that better captures the dissemination of knowledge over time and across disciplinary boundaries by looking at more than one generation of citations. This enduring influence measure assesses the relative importance of a paper by both the number of cites to the paper and the number of secondary cites, i.e., cites to the papers that initially cited the focal paper, as suggested by Lehmann et al. (2011, p. 100). The new measure takes into account the fact that truly impactful papers not only receive more direct citations but also lead to papers that in turn are influential and hence cited themselves. For example, a paper could initially generate a lot of initial interest and citations (as in a fad) but have little lasting impact while another paper could have few direct citations but be followed by numerous citations to the papers that cite it, suggesting enduring impact. The proposed measure also (imperfectly) accounts for how prominent a citation is in the bibliography in terms of the percent it is of the total number of references as a proxy for a paper's importance. For instance, a paper cited as one of five papers in the reference list is assumed, *ceteris paribus*, to influence the ideas presented in the paper that cites it to a larger extent than if the paper was one of 20 papers in the reference list. Including secondary citations also helps capture knowledge dissemination across disciplinary boundaries because it takes time for knowledge to be transferred across disciplines (Cote et al. 1992).

The measure captures knowledge dissemination across disciplinary boundaries, reduces the probability that papers are cited primarily because of the author's reputation or because other authors critique the paper, and reduces the influence of coercive citations. The new measure further responds to calls to use multiple performance indicators in academia, since no simple measure fully captures the research

contributions by and academic performance of scientists (Martin and Irvine 1983; Rinia et al. 1998). In sum, the construct provides a more complete assessment of the research contributions of an article or scholar within and across the boundaries of a discipline.

2 Method

2.1 Data

This study focuses on two related academic fields, marketing and management. These fields—and the social sciences in general—have been under-researched in the area of bibliometrics (Harzing 2005). We concentrate on influential papers in the discipline since the large majority of publications receive very few citations. Specifically, we examine four types of papers: meta-analyses, reviews, seminal papers, and award-winning papers. Meta-analyses are our starting point and set the sampling frame of influential papers.

Meta-analyses Previous studies have shown that meta-analyses are cited at a significantly higher rate than primary-level studies (Aguinis et al. 2011). To locate published meta-analyses, we searched business and management journals listed in the SSCI under the subject categories “Business” and “Management” (which cover both marketing and management journals), as well as “Business, Finance.” From these journals, studies were retrieved using keyword searches (e.g., “metaan*,” “meta-an*,” “research synthesis,” “quantitative review”). In order to be included in the analysis, a study had to report at least one numerical measure of a relationship between two variables (e.g., correlation, mean difference) or an integration of descriptive measures. In addition, the study had to summarize evidence of more than two primary studies by two or more researchers/research teams. If more than one paper was published based on the same meta-analytic data, only one paper was selected. Eighty-three meta-analyses were found to be appropriate for the analysis.

Literature reviews As a basis of comparison, we analyzed a sample of narrative reviews that could reasonably be compared to the meta-analyses in our study. We searched all issues of the same publication year of the journal where a meta-analysis was published by using the keyword “review.” A narrative review had to be the main purpose of the study, i.e., we did not include studies that provided a literature review preceding an empirical study. When we found more than one review in the journal in the same publication year as a meta-analysis, we chose the review that was published closest to the meta-analysis in terms of issue or placement within issue. Altogether, we identified 24 such reviews.

Seminal papers We analyzed seminal papers that were mentioned as such in the meta-analyses. If more than one source was mentioned, the older source was selected. Out of 23 meta-analysis papers that mentioned such sources, six of them were books and four papers were not (yet) indexed by the SSCI. Hence, 13 seminal papers were included.

Award-winning papers Award-winning papers that were published before and including 1996 were retrieved using the following major awards in the area of management

and marketing: *Academy of Management Journal* Best Article Award (since 1986), H. Paul Root Award (since 1990), Harold H. Maynard Award (since 1974), John D. C. Little Award (awarded since 1982, but papers were indexed by the SSCI only since 1986), and William F. O'Dell Award (awarded since 1979 for papers that were published 5 years earlier). Altogether, we retrieved 82 award-winning papers. (An overview of the 198 papers included in our analysis is available from the authors on request.)

2.2 Primary and secondary citations

We compute primary citations to the original paper for 14 years after publication of the original paper using the SSCI. We examined papers published before 1996 to allow all of them to have a 14-year history by 2010. For example, citations to a paper published in 1990 are calculated for the 14 years 1990 through 2003. We used 14 years of citations to capture the main part of the citation life cycle because, on average, the impact of an article in a high-impact journal lasts for about 14 to 15 years (Franses 2003). We calculate primary citations based on citations per year over the first 14 years since publication (i.e., the minimum citation history of the papers in our sample).

In addition to annual (primary) citations, we collected secondary citations, that is, citations to the papers (primary citations) that cited the original influential paper through 2010. We computed average secondary citations per year because secondary papers published in different years have different time frames for citations to occur before 2011, many less than 14 years in length. For example, citations to a paper published in 1990 were divided by 20, since the paper had 20 years to receive (secondary) citations. (An alternative approach would be to simply use total primary and secondary cites. We chose to use citation rates instead to capture intensity of impact.)

One way to improve on a pure citations measure would be to explore how influential a cited paper was in the subsequent paper. Doing so would require either surveying authors (a difficult task at best for a large number of papers and one prone to faulty recollections) or some form of content analysis/text mining (again a difficult task as well as an errorful one). Here we take a different tack and examine not only initial but also secondary citations, a relatively simple (but still arduous) undertaking.

2.3 Extended influence measure

To compute the influence of a paper, we assume that the influence of a paper on one that cites it is the inverse of the number of references in the bibliography:

$$IF_1 = \frac{1}{B_n}, \quad (1)$$

where B_n = the number of references in paper n . This assumes that the influence of an original paper on a paper is higher if it is one of a few references in the paper that cites it compared to one of many papers.

The impact factor of a secondary citation is

$$\text{IF}_2 = \frac{1}{B_n} \frac{1}{B_m}, \quad (2)$$

where B_m is the number of references in secondary paper m . For example, if the first generation paper cites the original paper as one of 10 cites and the second generation paper cites the first generation paper as one of 20 cites, then the estimated influence of the original on the second generation paper is $(1/10)(1/20)=1/200$.

We compute the extended influence for each paper as the sum of first and second generation impacts:

$$\text{IF}_{\text{sum}} = \sum_1^n \frac{1}{B_n} + \sum_1^n \sum_1^m \frac{1}{B_n} \frac{1}{B_m}. \quad (3)$$

We also computed an estimate for third generational influence as

$$\frac{1}{B_n} \frac{1}{B_m} \frac{1}{B_l}. \quad (4)$$

Because this produced very small numbers, we limited our influence measure to the first two generations of citations.

Given the huge number of secondary citations for some papers and the difficulty involved in coding manually the publication year and the number of references for each secondary citation, we focus our analysis on a random subset of 60 papers. The sample of selected papers is not significantly different from the other reviews, seminal papers, meta-analyses, and award-winning papers in terms of secondary citations, primary citations, or the ratio of secondary/primary citations nor in terms of publication year, journal quality (top journal versus other), or subject area (management versus marketing) (all p 's $>.10$). Similarly, the types of awards in the sample of award-winning papers do not differ from the distribution of awards in the non-selected award-winning papers ($p=.92$).

3 Results

3.1 Basic results

Figure 1 shows that the average number of primary citations to each type of influential paper within 14 years after publication follows a concave shape, suggesting that in general a paper's influence approaches a saturation level, although they do not necessarily peak within 14 years.

Table 1 presents additional descriptive statistics of primary and secondary citations for all influential papers as well as for each type of influential paper. The figures give a sense of the citation history of different papers. For instance, seminal papers have the largest number of primary and secondary citations: even though they have lower average cites for 14 years, they have higher cites per year over the life span captured in our data set. They are older than the other papers (publication year 1971 versus 1989 for all other papers), which (partly) explains the high total of primary and secondary citations.

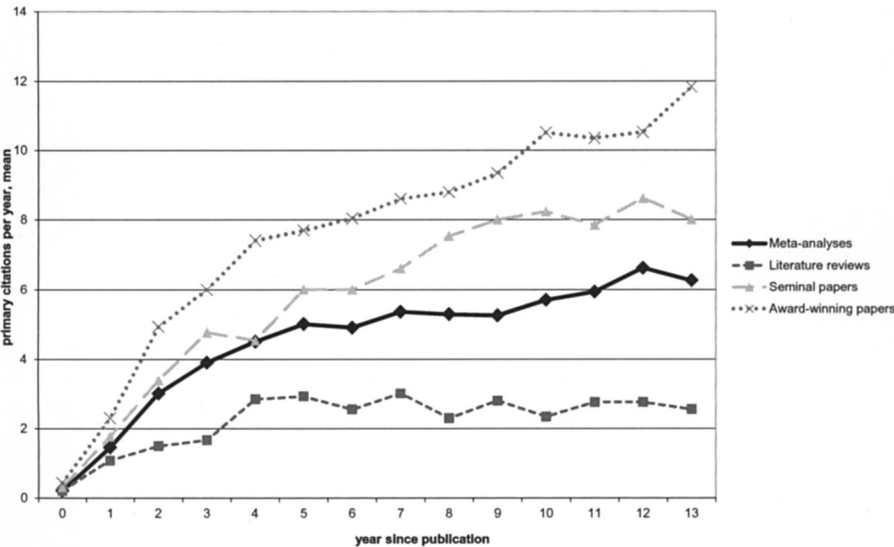


Fig. 1 Average number of primary citations to each type of influential paper within 14 years after publication

The average primary citations per year for a meta-analysis of 1.95 is similar to the 1.8 average reported for a typical research paper in three of the top marketing journals (JM, JMR, JCR). All papers received 2.67 average primary citations which corresponds to the average of 2.9 citations a lead article in these three journals receives (Hubbard et al. 2010). A typical research paper in the 28 management journals listed in the SSCI receives an average of 1.2 citations per year versus an article in the top seven management journals (JAP, MS, AMJ, AMR, ASQ, SMJ, and OBHDP) which receives an average of 2.3 citations per year (Podsakoff et al. 2005). Overall, the meta-analyses

Table 1 Descriptive statistics of primary and secondary citations to influential papers

	All papers	Meta-analyses	Literature reviews	Seminal papers	Award-winning papers
Primary citations					
Total citations	136.30	99.19	49.25	343.23	166.67
Citations after 14 years	78.25	63.42	31.21	81.62	106.71
Citations per year	2.67	1.95	0.97	6.73	3.27
Secondary citations					
Total citations	3,614.86	2,567.76	1,042.71	10,826.54	4,249.82
Citations after 14 years	2,756.03	2,190.48	893.38	3,873.00	3,658.54
Citations per year	173.30	137.95	63.03	291.74	220.42
Ratio of secondary/primary citations					
All years	25.05	23.73	19.59	28.37	27.27
14 years	33.47	30.23	24.18	37.07	38.40
N	198	83	24	13	82

The total number of all papers is smaller than the sum of the four types of papers since four papers belong to more than one group; three meta-analyses and one literature review were also award-winning papers

we examined received primary citations comparable to those a typical paper in a top journal in the field receives. Literature reviews receive fewer and seminal and award-winning papers receive more primary citations.

Award-winning papers on average receive the highest number of primary citations within 14 years (106). Studies that rely on traditional citation measures typically conclude that award-winning articles generate the highest number of citations (Hubbard et al. 2010).

However, seminal papers receive the highest number of secondary citations within 14 years (3,873) and the highest number of primary citations per year (6.73) over their entire life cycle. This suggests that enduring influence is not fully captured by traditional (primary) citation measures.

The ratio of secondary to primary citations on average is 33. Secondary papers might cite the focal (original) paper and therefore also count as primary cites. This, however, is relatively rare and happens for a maximum of 3 % of the secondary citations and hence has little impact on our measure.

Table 2 presents the correlations between average yearly primary and secondary citations. The correlations are positive and, except for literature reviews, significant but relatively small. More influential papers not only receive more citations but also are cited by papers that are successful in terms of the citations they receive.

Figure 2 shows the relation of primary to secondary citations. One outlier among the award-winning papers is Huselid (1995). This paper received a very high number of primary citations, but only an average number of secondary citations. If we drop this paper, the correlation coefficient for award-winning papers in Table 2 becomes stronger ($r=.285$, $p=.010$), although it is still fairly small.

Given the small significant correlation between primary and secondary cites, unsurprisingly, there are several “off-diagonal” papers. Some papers seem to be initially under-recognized, receiving few primary cites but many secondary cites per year, while other papers receive a lot of primary cites but have low long-term influence reflected in secondary cites. Table 3 provides an overview of the ten “outliers” which had the lowest and highest ratios of primary to secondary citations. Papers that have high primary citations but low secondary citations per year versus those that have low primary citations but high secondary citations are more likely to be published in top journals ($\chi^2=3.20$, $p=.074$, Fisher’s exact test $p=.089$) and more likely to be award-winning papers ($\chi^2=5.50$, $p=.019$, Fisher’s exact test $p=.029$) but less likely to be

Table 2 Correlations between average yearly primary and secondary citations (within 14 years after publication)

	Correlation	Significance	N
All influential papers	.250	<.001	198
Meta-analyses	.270	.013	83
Literature reviews	.259	.221	24
Seminal papers	.596	.032	13
Award-winning papers	.199	.073	82

The total number of all papers is smaller than the sum of the four types of papers since four papers belong to more than one group; three meta-analyses and one literature review are also award-winning papers

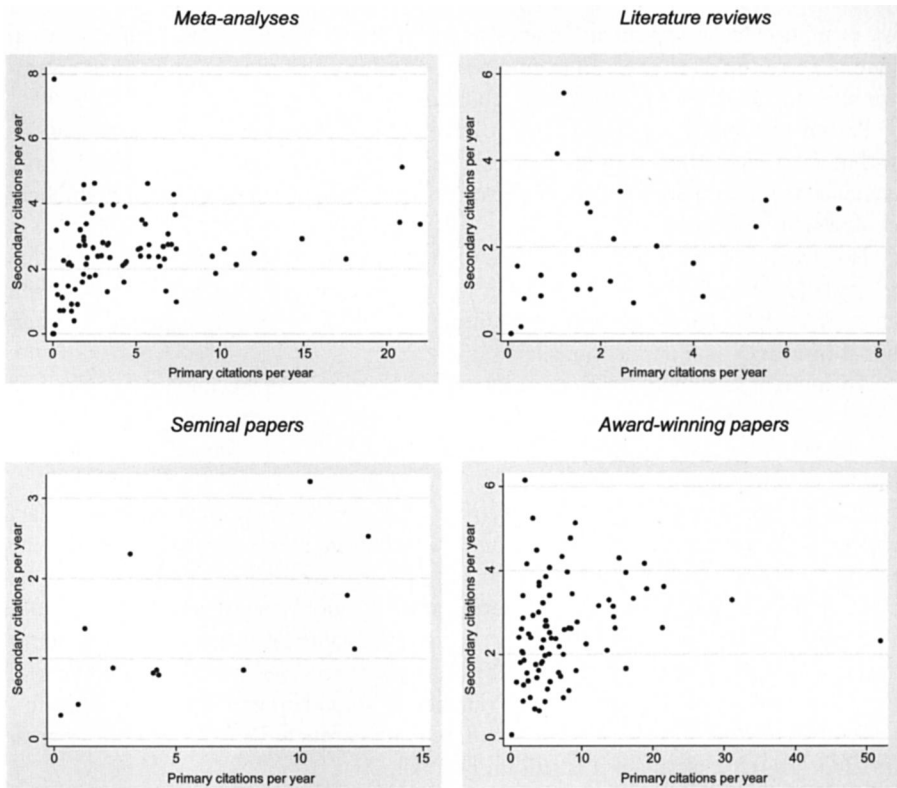


Fig. 2 Relationship between average yearly primary and secondary citations to each influential paper (within 14 years after publication)

meta-analyses ($\chi^2=3.33$, $p=.068$, Fisher's exact test $p=.085$). This suggests that some papers receive high primary cites because top journals and awards signal importance, but these signals do not transfer to secondary cites. Looked at differently, papers high in primary (relative to secondary) cites tend to represent fads while those where secondary cites are high compared to primary ones represent enduring contributions.

For instance, the meta-analysis by Lodish et al. (1995) that was published in *Marketing Science* received relatively few primary citations, but a high number of secondary citations. The meta-analysis integrates findings from in-market experimental findings on advertising carryover effects. Possibly because few researchers have access to data on field experiments, the paper had fewer cites. Nevertheless, the papers inspired by it have been widely cited. By contrast, Clarke's 1976 paper on the duration of the effect of advertising has been quite well cited. However, the papers citing it have had relatively little impact, perhaps because newer approaches to measuring ad effects have replaced aggregate data analysis and the Koyck model. Thus, while the paper by Clarke had more immediate impact, the one by Lodish seems to have had a longer-term effect. Looking only at primary citations would not have uncovered this result which relates to the “staying power” (enduring impact) of papers.

Table 3 Off-diagonal papers

Author (year)	Title	Journal	Type	Primary cites per year	Secondary cites per year (adjusted)
Primary cites per year>>>secondary cites per year (adjusted)					
Huselid (1995)	The Impact of Human Resource Management Practices on Turnover, Productivity, and Corporate Financial Performance	AMJ	Award	52.00	2.33
House (1971)	A Path Goal Theory of Leader Effectiveness	ASQ	Seminal	12.21	1.12
Mahajan et al. (1990)	New Product Diffusion Models in Marketing: a Review and Directions for Research	JM	Award	16.21	1.66
Day (1994)	The Capabilities of Market-Driven Organizations	JM	Award	31.14	3.31
Cleary (1968)	Test Bias: Prediction of Grades of Negro and White Students in Integrated Colleges	JEM	Seminal	7.71	0.86
Keller (1993)	Conceptualizing, Measuring and Managing Customer-Based Brand Equity	JM	Award	21.36	2.64
Clarke (1976)	Econometric Measurement of the Duration of Advertising Effect on Sales	JMR	Award/meta	7.43	0.98
Jackson and Schuler (1985)	A Meta-analysis and Conceptual Critique of Research on Role Ambiguity and Role Conflict in Work Settings	OBHDP	Meta	17.57	2.31
Johnson (1974)	Trade-off Analysis of Consumer Values	JMR	Award	8.21	1.14
Locke (1968)	Toward a Theory of Task Motivation and Incentives	OBHDP	Seminal	11.93	1.79
Secondary cites per year (adjusted)>>>primary cites per year					
Hite (1987)	An Application of Meta-Analysis for Bankruptcy Prediction Studies	OBHDP	Meta	0.07	7.85
Datta and Narayanan (1989)	A Meta-analytic Review of the Concentration-Performance Relationship: Aggregating Findings in Strategic Management	JMG	Meta	0.21	3.17
Lewis et al. (1994)	Empirical Studies of Projection: a Critical Review	HR	Review	0.21	1.56
Reilly and Connover (1983)	Meta-analysis: Integrating Results from Consumer Research Studies	ACR	Meta	0.21	1.51
Gattiker (1992)	Computer Skills Acquisition: a Review and Future Directions for Research	JMG	Review	1.21	5.56
Cohen and Gattiker (1994)	Reward and Organizational Commitment Across Structural Characteristics: a Meta-Analysis	JBP	Meta	0.29	1.20
Lodish et al. (1995)	A Summary of Fifty-Five In-Market Experimental Estimates of the Long-Term Effect of TV Advertising	MS	Meta	0.86	3.38

Table 3 (continued)

Author (year)	Title	Journal	Type	Primary cites per year	Secondary cites per year (adjusted)
Datta et al. (1991)	Diversification and Performance: Critical Review and Future Directions	JMS	Review	1.07	4.14
Szymanski and Busch (1987)	Identifying the Generics-Prone Consumer: a Meta-analysis	JMR	Meta	0.64	2.26
Bagozzi (1977)	Structural Equation Models in Experimental Research	JMR	Award	2.07	6.15

ACR Advances in Consumer Research, *AMJ* Academy of Management Journal, *ASQ* Administrative Science Quarterly, *HR* Human Relations, *JBP* Journal of Business & Psychology, *JEM* Journal of Educational Measurement, *JM* Journal of Marketing, *JMG* Journal of Management, *JMR* Journal of Marketing Research, *JMS* Journal of Management Studies, *MS* Marketing Science, *OBHDP* Organizational Behavior and Human Decision Processes (former: Organizational Behavior and Human Performance)

3.2 Influence measure results

Table 4 presents the results for the proposed enduring influence measure for the four types of papers. The influence after two generations is highest for seminal papers, followed by award-winning papers, meta-analyses, and literature reviews. Seminal papers led to wide dissemination of knowledge via secondary citations, i.e., they really did generate a stream of research.

Third generation impact is less than 1 % of first generation impact. Seminal papers and review papers have longer reference lists, which reduces the influence of a paper in their reference list on the study that cites it. Second generation papers do not differ systematically in the length of their bibliographies.

Figure 3 illustrates the positive relationship between primary citations and the enduring influence measure ($r=.715, p<.01$). The relationship is non-linear: a convex (exponential) function provides a better fit to the data than a linear function (R^2 change=.029, F change =3.555, $p=.064$). This non-linearity is driven by papers that receive a relatively high number of secondary citations, which shows once more that the extended influence measure captures somewhat different information than primary citations.

Table 5 displays the correlations among the new influence measure, primary citations, and secondary citations. The correlations indicate that these measures have commonalities, but they differ between paper types. Furthermore, the relationship between traditional citations measures and the new measure is not linear (Fig. 3). Note that the findings in Table 5 refer to correlations between the sum of primary and the sum of secondary cites, while Table 2 provides the correlation between the average citations per year with secondary citations adjusted for intensity of impact. The correlations differ. That is, the findings in Table 2 (versus Table 5) provide results that reflect the patterns of the new influence measure based on a shorter period of time.

4 Discussion

This paper suggests a new and extended influence measure to assess the relative long-term importance and enduring impact of a paper. The measure better captures the

Table 4 Enduring influence (after 14 years)

	All papers	Meta-analyses	Literature reviews	Seminal papers	Award-winning papers
Enduring influence (first and second generations) (IF_{sum})	62.22	30.98 ^a	14.06 ^b	138.44 ^c	69.52 ^d
Ratio influence (third generation/first generation)	0.00070	0.00049 ^a	0.00090 ^{bc}	0.00105 ^c	0.00059 ^{ab}
Mean of inverse of number of references, primary citation ($1/B_n$)	0.04332	0.02843 ^a	0.07583 ^b	0.06812 ^b	0.02528 ^a
Mean of inverse of number of references, secondary citation ($1/B_m$)	0.01917	0.01697 ^a	0.01920 ^a	0.02140 ^a	0.02010 ^a
<i>N</i>	60	20	10	12	18

Figures followed by the same letter do not differ significantly from each other ($p<.10$)

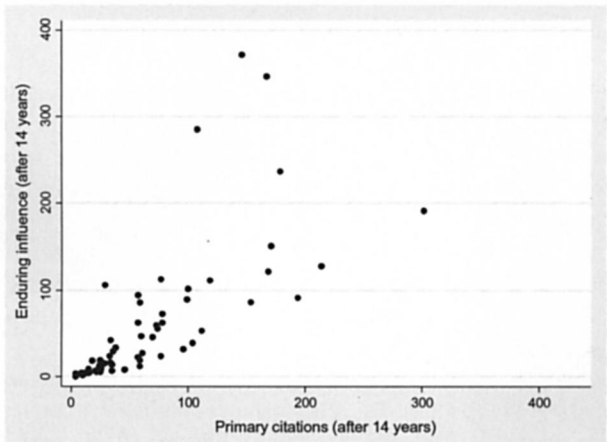


Fig. 3 Relationship between primary citations and the enduring influence measure (within 14 years after publication)

pattern of the dissemination of knowledge than traditional citation measures. The measure has several advantages. First, including secondary citations helps capture knowledge dissemination across disciplinary boundaries over a longer time period for knowledge to be transferred across disciplines (Cote et al. 1992). Second, the new influence measure reduces the probability that citations reflect only intellectual influence within a small academic community and that papers are cited primarily because of the author’s reputation (Stremersch et al. 2007). While it might drive up the number of primary citations, the reputation of the original paper’s authors does not affect secondary citations. Similarly, a paper that is highly cited because other authors critique it (Croom 1970) drives up primary citations, but not necessarily secondary citations. Third, some journals try to drive up primary citations to articles by citing papers in their editorials or in related conference proceedings that are listed in the SSCI database. Since editorials and conference proceedings usually receive a low number of citations, the second generation impact of articles is typically even lower, even if primary citations indicate high impact. Further, the new influence measure helps reduce the effect of coercive citations (Wilhite and Fong 2012). Additional citations in the bibliography increase the number of references in the reference list and thereby reduce

Table 5 Relationship between different influence measures (after 14 years)

Correlations	All papers	Meta-analyses	Literature reviews	Seminal papers	Award-winning papers
Enduring influence—primary cites	.715 ^a	.933 ^{bc}	.561 ^a	.848 ^{ac}	.752 ^a
Enduring influence—secondary cites	.841 ^a	.985 ^b	.874 ^a	.891 ^a	.929 ^a
Primary cites—secondary cites	.820 ^a	.873 ^a	.854 ^a	.897 ^a	.802 ^a

All correlations are significant at $p < .05$, except for a correlation in italics that is significant at $p < .10$. Figures related to each type of paper and followed by the same letter do not differ significantly from each other ($p < .05$)

the proposed influence measure because the measure uses the inverse of the length of the bibliography as a weighting factor.

While sourcing both primary and secondary citations and counting the number of references manually is an enormous undertaking, it is possible to develop scripts that can source the data automatically (as, for example, in Kunz and Hogreve 2011). We restricted our analysis to influential papers because the large majority of papers receive few citations and it is challenging to define a sample of “normal” papers. Future research could extend the analysis to other kinds of papers once automatic data sourcing has been implemented.

This research has several implications for the scientific community. First, focusing on the new influence measure can help to reduce the problems of coercive citations and other practices that bias traditional measures of impact. If journals report the new influence measure in addition to the traditional measure, scientific stakeholders (academic scholars, sponsoring associations, publishers, editors) can more easily identify problems with the conventional measure and assess the overall influence of a journal. Second, the influence measure is a more appropriate criterion to assess long-term impact. As do most scientific communities, marketing recognizes long-term impact with awards. For example, the INFORMS Long Term Impact Award recognizes the impact of papers that were published in *Marketing Science* or in *Management Science* 5 or 10 years prior to the award, and the Sheth Foundation Award recognizes the impact of papers to the field that have been published between 6 and 10 years previously. Similarly, several awards recognize long-term achievement such as the Churchill Award for lifetime achievement in marketing research and the Mahajan Award for marketing strategy. While certainly not the only criterion for the evaluation of the achievement of outstanding scholars, the new measure provides a way to assess longer-term research contributions within and across disciplinary boundaries. In particular, the ratio of secondary to primary citations is a potentially useful measure of long- versus short-run impact.

Simply counting citations of course does not distinguish between fundamental and foundational ones, ones simply included to “pad” a bibliography and those that address a minor methodological or conceptual point. The same problem persists in “second generation” citations. A truly important paper is foundational to the paper that cites it which in turn is foundational to the paper which cites the citing paper. By simply counting direct and secondary citations, we are implicitly assuming a paper that is cited has an “average” effect. Future research may want to explore measures that capture differences in influence beyond weighting based on the numbers of cites in a citing paper.

The purpose of this paper is not to propose “the” measure of impact. No single measure can fully capture research contributions by scientists (Martin and Irvine 1983; Rinia et al. 1998). However, the traditional impact measure is controversial and one can anticipate that an increasing and more mechanical use of this indicator will generate opposition among scientists who feel that it undermines or threatens the very idea of scientific quality (Aksnes and Rip 2009). We believe that the new enduring influence measure better captures the extent of knowledge dissemination. At a minimum, the new measure provides a different perspective from which to assess the impact of an article.

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