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Citation Success: Evidence from Economic History Journal Publications*

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Abstract

This study analyses determinants of citation success among authors publishing in economic history journals. Bibliometric features, like article length and number of authors, are positively correlated with the citation rate up to a certain point. Remarkably, publishing in top-ranked journals hardly affects citations. In regard to author-specific characteristics, male authors, full professors and authors working economics or history departments, and authors employed in Anglo-Saxon countries, are more likely to get cited than others. As a 'shortcut' to citation success, we find that research diffusion, measured by number of presentations and people mentioned in acknowledgement, boosts the citation rate.

Keywords: Bibliometrics, Citation Analysis, Citation Success, Economic History, Scientometrics, Poisson Regression
JEL classifications: A10, A11, A14, N10

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1 Introduction

Citation counts are frequently used to evaluate how influential researchers are. This system is used for appointments decisions, salary increases, awards and so forth. But which factors determine how often a scholar gets cited? This study provides an initial attempt to identify some aspects that underlie citation success for authors who publish their research in economic history journals.[1]

Our analysis makes use of citations made in 2007 to original research articles published in journals with economic history as their main topic.[2] The empirical analysis is conducted in order to report the main findings regarding the determinants of author citation success. Then, we submit the data to more specific econometric analysis. The main aim is to try to quantify the importance of bibliometric features (aspects that concern the published articles), as well as features relating to the academic and personal background of authors.

We focus on three main categories of determinants: (i) factors concerning the published article (length, number of co-authors, years since publication, self-citation rate); (ii) characteristics concerning the author (research experience, academic degree; academic title, sex, language of the country of employment, departmental affiliation); and finally (iv) proxies that relate to the diffusion of, and accessibility to, the author's research (acknowledgement information, etc.).

Our analysis shows that bibliometric features carry important information regarding authors' citation success: article length and number of co-authors are positively correlated with an author's citation rate. Remarkably, publications in prominent and highly-ranked economic history journals do not seem to generate more citations than publications in less renowned journals. In regard to author-specific characteristics, we find that departmental affiliation and academic titles are crucial determinants of an author's citation rate. Male authors, full professors, and authors appointed in

[1] Whaples (2002) offers a similar analysis, but although he limits his focus to articles in the *Journal of Economic History* and citations from non-economic history journals.

[2] The citations used in this study were collected for the purpose of ranking thirteen international economic history journals using citation-based impact-factor analysis (see Di Vaio and Weisdorf, 2010).

economics or history departments in Anglo-Saxon countries tend to receive more citations than others. Perhaps, the most notable result—one which the author can actually influence is that the diffusion of an author's research, as reflected in the number of presentations and people thanked in the article's acknowledgement, exerts a positive influence on citation success.

2 Data

2.1 The construction of the dataset

The data used for the empirical analysis conducted below come from several sources. The main source is the dataset collected by Di Vaio and Weisdorf (2010). This includes 657 citations appearing in research articles published in 2007 by a set of international economic history journals.[3] Following the so-called 'within-discipline' approach, the citations are produced by the journals in the sample and refer to works that were previously published in the same journals.[4]

For every author whose work was cited in 2007, we compute a number of bibliometric variables: citation rate (the total number of citations received);[5] self-citation rate (the total number of citations received from the author himself or his eventual co-authors); JCR citation rate (the total number of citation received by articles published in journals included in the *Journal Citation Reports*);[6] average length of the article cited; and average number of co-authors of the article cited. In this way, we construct a sample that contains bibliometric information about a total of 450 authors.

[3] The journals are: *Annales: Histoire, Sciences Sociales; Australian Economic History Review; Cliometrica: Journal of Historical Economics and Econometric History; Economic History Review; European Review of Economic History; Explorations in Economic History; Indian Economic and Social History Review; Irish Economic and Social History; Jahrbuch für Wirtschaftsgeschichte; Journal of Economic History; Revista de Historia Económica / Journal of Iberian and Latin American Economic History; Rivista di Storia Economica; Scandinavian Economic History Review*.

[4] See Di Vaio and Weisdorf (2010) for further details.

[5] This is a crude measure of academic impact, which does not control for size or impact of journals as is common in the bibliometric literature. As shown by Henrekson and Waldenström (2009), however, the correlation across different impact measures based on either journal-impact scores or actual citations is quite high. Hence, we feel confident about using unadjusted citations as our main outcome measure.

[6] In 2007, these journals were *Economic History Review*, *Explorations in Economic History* and *Journal of Economic History*.

In addition, we collected the following information from the author's professional[7] website (when available): the author's sex (male or female), region of employment (Anglo-Saxon, Latin, German-speaking, or Nordic), education (Ph.D. or not), academic title (full or associate professor), departmental affiliation (economic history, economics, or history), and finally a measure ranking the institution where the author is based (using the ranking of top 200 universities in the *Sunday Times*' "World University Rankings").[8] These latter variables are valid at the time of citation, namely the year 2007. Accordingly, this sample is smaller, though richer in terms of information; it includes a total of 325 authors.

The data contained in the two samples (the *basic* sample including 450 authors, and the *rich* sample including 325 authors) provide a broad representation of citation rates among economic history authors—from the most cited authors, who receive ten or more citations, down to those who received just a single citation. Note that the data does not contain information regarding authors not cited in 2007 in the journal included in the sample. That is, the results obtained below are conditional on authors being cited.

Another potential drawback of the current data is that we do not consider citations made to and from books, book chapters or other non-article items. Given that a fair share of citations made in the social and human sciences are not captured by journal articles (Hicks, 2004), our sample selection is potentially biased. And yet, we have observed that economic historians tend to publish the main results of their research in an economic history journal at the same time as their book is released. If this is indeed a common practice, then we implicitly pick up reference to the research that inspired the book, as these are repeated in the article; potential bias is mitigated as a result.

2.2 Data characteristics

Figure 1 shows the frequency distribution of authors conditional on citations received. About half of all authors received one citation in 2007, while one tenth of all authors received four citations or more. It is worth noting that one extreme observation

[7] We consulted only official websites, meaning websites hosted by universities or research institutes.
[8] See the *Sunday Times*' "Higher Educational Supplement", November 9, December 2007.

received 37 citations (Jeffrey G. Williamson).[9] As can be seen from the figure, the majority of observations is concentrated in the bottom part of the distribution, a phenomenon that deserves attention when correctly specifying the econometric model.

[Figure 1 about here]

Table 1 provides a summary of descriptive statistics for the variables used in the empirical analysis. The table is divided in two parts: the *basic* sample including bibliometric information for 450 authors, and the *rich* sample containing additional personal background information covering 325 authors. The average number of citations (conditional on receiving citation) is 1.96 in the basic sample and 2.18 in the rich sample. Therefore, every author in the samples receives, on average, about two citations. The median in both cases is one. Hence, the distribution of citations in both cases is strongly skewed. On average, only about one seventh of all citations received comes from the author him- or herself. It is worth noting that the bibliometric variables in the *basic* and the *rich* samples do not show large differences, implying that the two samples might be considered as belonging to the same population.

The share of citations addressed to JCR articles seems to dominate the whole set of sample citations, since more than two thirds of total citations received by an author, on average, refer to this category. Such a large fraction of citations to JCR articles might have some implications for its estimated impact, as will be clear later.

[Table 1 about here]

The data provide insight regarding patterns of co-authorship. The average number of authors per article in the basic sample is 1.57. Roughly half of all the articles were single-authored. Less than one tenth had three or four authors. These numbers do not seem to vary after controlling for departmental affiliation (whether authors come from economics, economic history, or history departments). The shares observed in our data are almost identical to those found for economics articles (Johnson, 1997; Coupé,

[9] Due to its outlier status, this observation is controlled for by means of a dummy variable in the empirical analysis.

2004). The average length of articles is 25 pages, with a standard deviation of 8 pages. This is considerably longer than articles published in economics journals, which average 11 to 15 pages (Laband and Piette, 1994; Johnson, 1997). The phenomenon can be explained by the fact that the specificity of economic history research usually requires large narrative and descriptive sections in the papers. In addition, economic history papers make ample use of data appendices.

The rich sample also offers information concerning authors' geographical location, the type of department to which they are affiliated, and their academic title. Two thirds (66 percent) of the cited articles were written by authors working in Anglo-Saxon countries, while two thirds (67 percent) were written by scholars who were full professors by 2007.

In regard to departmental affiliation, 58 percent of the cited authors were employed at economics departments. Indeed, the figures reach 70 percent for universities located in Anglo-Saxon countries. Just 25 percent of all authors were appointed at either history (13 percent) or economic history (12 percent) departments, while the rest were affiliated to other kinds of institutions. Figure 2 plots the frequency of citations per author controlling for departmental type. This clearly demonstrates the dominance of authors coming from economics departments. In fact, our analysis shows that the distribution of citations received by authors appointed at economics departments statistically dominates that of economic history departments, which again statistically dominates the distribution of those employed at history departments. This strongly suggests that authors employed in economics departments are among the most influential economic historians. Astonishingly, in her mid-1990s article titled "The End of Economic History", Christina Romer forecasts a shift of the US field of economic history from a distinct academic discipline to a sub-field of economics (Romer, 1994). Our data analysis seems to give numerical evidence for this conjecture.

[Figure 2 about here]

3 Econometric analysis

3.1 Specification

This section offers an econometric analysis of the data. Below, we try to link citation success to a number of article-specific and author-specific factors. In particular, our dependent variable is the total number of citations (*Cites*)—a count variable which takes integer values from one and up. Our explanatory variables include a set of bibliometric characteristics (self-citation, article length, etc.), as well as a set of author background characteristics (sex, academic title, academic affiliation, etc.).

It is important to note that the citations rates are highly skewed towards the right of the distribution (Figures 1 and 2). A skewed distribution of the dependent variable typically implies that the residuals are not normally distributed when using OLS regressions. This, in turn, means that the coefficient estimates may not be consistent. Therefore, our baseline estimations will be based on a Poisson model. Indeed, the Poisson model is designed specifically to treat count variable data.

The model accounts for the number of citations of articles authored by researcher *i*, $Cites_i$, as a function of a vector of bibliometric variables, x_i, and academic background variables, z_i. This can be expressed as follows:

$$Cites_i = \exp(x_i'\beta + z_i'\delta + \varepsilon_i)\,. \tag{1}$$

After log-linearization, the model reads

$$\ln Cites_i = x_i'\beta + z_i'\delta + \varepsilon_i\,. \tag{2}$$

In addition to the baseline Poisson estimation, we also run three alternative specifications to make sure that our approach is statistically robust. These are: (i) a standard OLS regression; (ii) a zero-truncated Poisson model; and (iii) a negative binomial model.[10] The zero-truncated Poisson model takes into account that our

[10] Effectively, the negative binomial regression is a generalized version of the Poisson regression, which allows for a more flexible dispersion of the dependent variable. Yet, we prefer the Poisson

dependent variable never takes the value zero (as we analyse citations *conditional* on being cited). The negative binomial model accounts for over-dispersion of the dependent variable. As will become apparent below, the results are qualitatively identical in all four cases. Despite the fact that we will report all the cases in subsequent tables, we will focus on the Poisson results when discussing our findings.

3.2 Main results

Table 2 reports the first set of regression results. Here, we use only bibliometric variables, and so we run the analysis on the basic sample, which covers the full 450 authors. We also run the analysis for the more information-rich sample covering 325 authors. The results were practically identical.[11] This suggests that when we conduct a second regression analysis on the smaller, but more informative sample, it will not suffer from severe sample selection bias.

[Table 2 about here]

Our analysis shows that an article's bibliometric information important insight with regard to an author's citation success. As reported in Table 2, we find that the share of self-citations tends to boost the citation rate. However, because this is commonly corrected for when computing someone's citation rate, self-citation is hardly a meaningful way of increasing one's citation success.

Consistent with Whaples (2002), we find that longer papers are cited more often, but only up to a certain point. The same is true for the number of authors collaborating on an article: the more authors, the more cites each author can expect to get. However, as indicated by the 'Authors squared' variable, the non-linear relationship implies that this is only true up to an optimal point.

Two questions spring to mind: what is the optimal length of an article for maximising one's citation rate, and what is the optimal number of co-authors when writing a

model due to its salient properties of robustness. That is, it provides consistent and asymptotically normal estimators, even if the Poisson distribution is not valid (Wooldridge, 2002).

[11] While the results are not reported in the paper, they are available upon request.

paper? Figure 3 shows the expected number of citations from the estimated linear and squared marginal effects of article length, holding all other factors constant. The estimates of the Poisson regression indicate that the optimal length of an article is 34 pages. This is remarkably long, not least in light of the fact that the mean length of articles in the sample is 25 pages. Since the standard deviation of the sample is 8 pages, however, the citation-rate maximising 34 pages are almost within one standard deviation away from the mean.

We find 2 to be the optimal number of authors per article (see Figure 4). Table 1 reveals that this number is also within one standard deviation away from the mean. As has been widely discussed concerning other disciplines (Coupé, 2004), it is not clear why more authors would give rise to more citations, especially compared to single-authored articles. Popular explanations point to the articles' higher quality stems from both more expert input into the article and more discussions taking place among co-authors while conducting the work. Co-authorship also increases opportunities for presenting the work at seminars and conferences (two people, as opposed to one, have twice the possibility of going away to conferences). This expands the diffusion of the work, whose role in citation success we address further below.

We also analyse the citation success for authors whose work is published in well-established, high-quality economic history journals; that is, journals that appear in the so-called *Journal Citation Reports* (JCR). As expected, there is a significantly positive effect on subsequent citations of publishing in top journals. However, as will be discussed below, this effect is not robust to the analysis of the more information-rich sample, probably due to the large dominance of citations addressed to JCR articles in the sample.

In order to get a more nuanced representation of the factors determining citation success of authors, we now extend the analysis to include a number of author background variables. Specifically, Table 3 complements the bibliometrical variables with author-specific personal and academic determinants. As mentioned earlier, this reduces the number of observations for which data are available. In the rich sample, the number of authors shrinks from 450 to 325. Reassuringly, however, the coefficient

estimates of the bibliometrical variables discussed below are almost identical to those reported above, except for the case of JCR-share variable (Table 2).

[Table 3 about here]

We find that authors employed in an Anglo-Saxon or, to a less significant extent, a German-speaking country are drastically more likely to be cited. By contrast, working in Latin or Nordic regions of the world has no significant impact on the citation rate. The estimate is indeed positive compared to the reference group (authors employed elsewhere than Anglo-Saxon, German-speaking, Latin and Nordic countries). When formally testing the differences across regions, however, only Nordic authors appears to be truly significant (see Table 4).[12]

With respect to academic titles (Table 3), we find that the likelihood of being cited improves considerably when the author is a full professor.[13] The effect is substantial: in the preferred specification, full professors are roughly 95 percent more likely to receive citations compared to assistant professors and post-docs (who together comprise the reference group). Interestingly, the impact on the citation rate of being an associate professor does not at all compare to that of full professors. Also, although this estimate is positive, it is not significant.[14]

Turning to the role of departmental affiliation, we find that authors from economics or history departments outperform authors belonging to economic history departments. Table 3 shows that, although it does have an effect on citation success, the estimated coefficient of affiliation to economic history departments is not statistically significant. When comparing the effects across department affiliations, Table 4 specifically shows that the lack of impact of economic history departments stands out.

[12] The low citation rate of Nordic scholars may be a result of the long-standing traditions in these countries to predominantly write economic history in the native language, in monograph format, and without almost any quantitative methods or economic-theoretical reasoning (see further Waldenström, 2005, on the case of Sweden).

[13] Note that authors whose articles were cited in 2007 were already appointed by that time, meaning that there is no issue of reverse causality.

[14] The effect of being full professor is robust to the inclusion of a variable measuring the years since PhD, which controls for academic experience. The introduction of this additional regressor, however, induces multicollinearity in the estimates. We do not report the results to save space. They are available upon request.

When interpreting the apparently higher influence of history departments as compared to economics departments, it should be noted that the regression effects are estimated on the margin and that there is a vast dominance of economists among the authors in our sample, as shown by Figure 2. In particular, the large number of economists who receive only one citation results in a relatively lower overall impact of belonging to an economics department. By contrast, among the relatively few authors coming who come from history departments (38 scholars, or roughly 10 percent of the sample), most of them (32) are full professors; the average impact of their department affiliation is hence more positive. In addition, looking at Table 4, it seems as if the equality of the estimated coefficients cannot be rejected.

The findings (Table 3) also seem to suggest that female authors generate fewer citations than their male counterparts. Given the relatively small number of female authors in the sample (41 out of 325), especially in the history (6 out 44) and economic history (4 out of 38) departments, Table 3's result regarding the role of gender should be interpreted with some caution.

Do authors appointed at highly ranked universities receive more citations? The answer, based on our sample, is no. Authors who come from top 10 universities do not receive significantly more citations compared to authors who work at less prestigious institutions (the reference group is authors employed at universities ranked below the top 50). In fact, authors appointed at universities ranked between top 10 and top 50 perform slightly worse than their colleagues coming from even lower ranked universities. These results are robust when controlling for departmental affiliation.[15] A potential explanation might refer to the fact that the general ranking of the universities is poorly correlated with the quality of the specific departments or with the research conducted by single authors.

The results presented above point to the conclusion that scholars do have an influence on their citation success. While chances are slim that authors will actually attempt to

[15] The ranking of universities comes from the *Sunday Times' "*Higher Educational Supplement", published December 2007. The only case in which we get a positive and (weakly) significant coefficient is when we group by top 100 universities. Excluding the extreme outlier, however, the statistical significance of this effect disappears.

change his or her sex in order to boost their citation rate, they might try to get an appointment as full professor at an economic or history department in an Anglo-Saxon country. Although producing exactly 34 pages of research and inviting someone to collaborate on the work may increase one's chances of receiving citations, a somewhat more tractable way of driving up the citation rate would be desirable. However, there is help ahead: what follows is a 'shortcut' to citation success.

3.3 The role of diffusion of academic work

Scholars have become increasingly aware of the different means of disseminating their work and ideas. This takes place through a variety of channels, spanning from participation in research seminars, workshops and conferences to internet-based venues for working papers and academic blogs (Colander, 2008; Frey et al., 2009).

One potential source of citation success could be the diffusion of an author's work, either through presentations (research seminars, workshops, conferences, etc.), or through asking someone to read and comment on the work. We address this issue by collecting additional information concerning 34 of the *most* and *least* cited articles in our database.[16] Supplementary data was gathered from the articles' acknowledgements regarding the number of individuals thanked for comments, suggestions and so forth, as well as the number of seminars, workshops and conferences where the work was presented.

Figure 5 scatter-plots the author's citation rate against each type of acknowledgment. This data suggests a positive association in both cases: the correlation coefficients are 0.73 for acknowledgement of individuals and 0.50 for acknowledgement of presentations.

[Figure 5 about here]

However, other factors may be responsible for the positive impact of presentations. For example, full professors might have relatively larger networks—they might get more invitations to research seminars; they may attend more conferences; and they

[16] Once the number of articles to be included in each category had been chosen, the specific items were randomly picked up by a uniform number generator from the distribution of similar articles.

may have easier access to colleagues for help. Hence, in order to disentangle the impact from research presentations and individual comments, we run Poisson regressions controlling from a number of bibliometric variables, as well as author background variables.

The results are shown in Table 5. The simple bivariate specifications show that the positive correlation between acknowledgements and citation success is indeed valid. This holds true even after controlling for article length and number of authors (linear and squared), as well as for years since publication. None of these bibliometric variables generate significant effects (except in one case in which years since publication seem to matter)—but they all have the expected signs. When using a dummy variable equal to one if the author is a full professor (a highly significant factor for the citations rate in previous regressions), this does indeed play a significant role regarding research presentations, which increase the likelihood of being cited.

Notably, however, the control variables—the dummy for full professor included—have no major impact on the effects of acknowledgments on citation success. Whether it comes in the form of quality-enhancement arising from receiving comments; from testing his or her ideas prior to submitting the work to a journal; or from simply making other scholars aware of one's studies, it is clear from the regression analysis that disseminating one's work matters when seeking to generate additional citations. Indeed, the returns of diffusion of research are quite substantial; authors can improve their citation success up to 30 percent by doing so.

[Table 5 about here]

4 Summary and Concluding Remarks

This study offers a modest attempt to identify some of the factors that determine the citation success of authors who publish their work in economic history journals. Similar studies have been done for other disciplines, including economics, but there has been no explicit treatment of economic history as a self-contained field. Arguably, our sub-discipline approach might be useful in truly understanding the citation success of economic historians.

Our findings can be summarized as follows: longer papers receive more citations, but only up to a certain point. The same is true for number of authors involved. The 'optimal' number of authors for a paper is 2, while the 'optimal' length of a paper is 34 pages. Authors appointed at universities in Anglo-Saxon countries are more likely to get their papers cited than authors employed in Latin, Nordic, or German-speaking countries. Academic titles matter: being a full professor significantly increases the citation rate as compared to assistant professors and post-docs. Furthermore, authors from economics or history departments are cited more often than those who come from economic history departments and other kind of institutes. Gender also seems to matter: women, especially those who come from economics departments, are less cited than men. Finally, the seemingly 'shortcut' approach to citation success: the diffusion of an author's research, as reflected in number of presentations and people thanked in the article's acknowledgement, drives up an author's citation rate.

Future work could involve a number of other factors: the topic of the article; whether the article has a theoretical or empirical approach; the sort of data it reports; if it is available online prior to its publication, and for how long; and finally how often it was cited in years preceding the year of analysis.

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Figure 1: Number of authors for each citation count

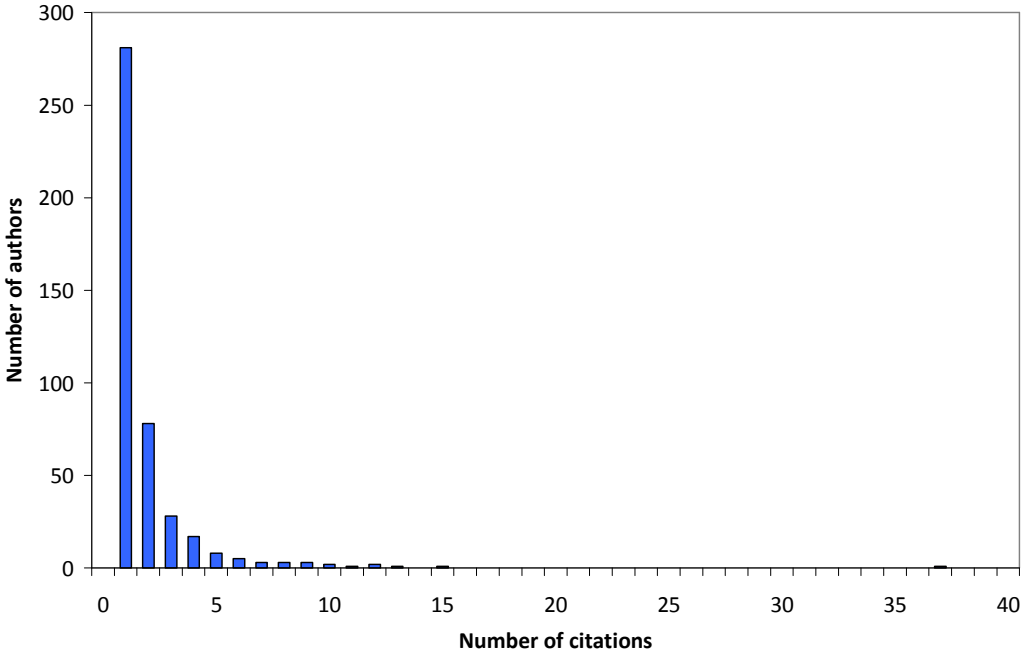


Figure 2: Distribution of citations across authors and departments.

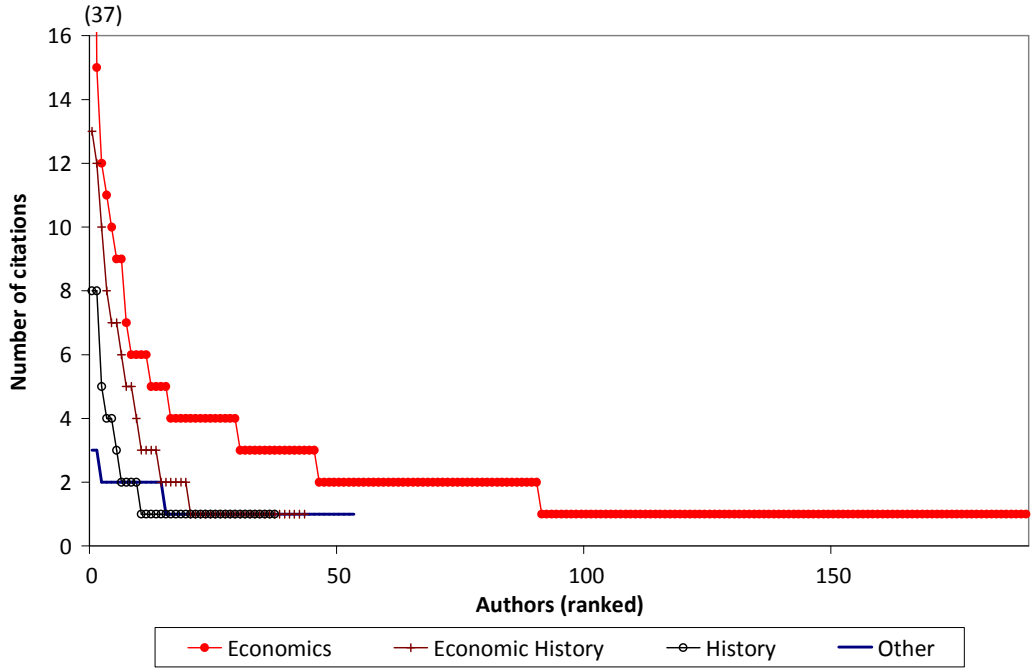
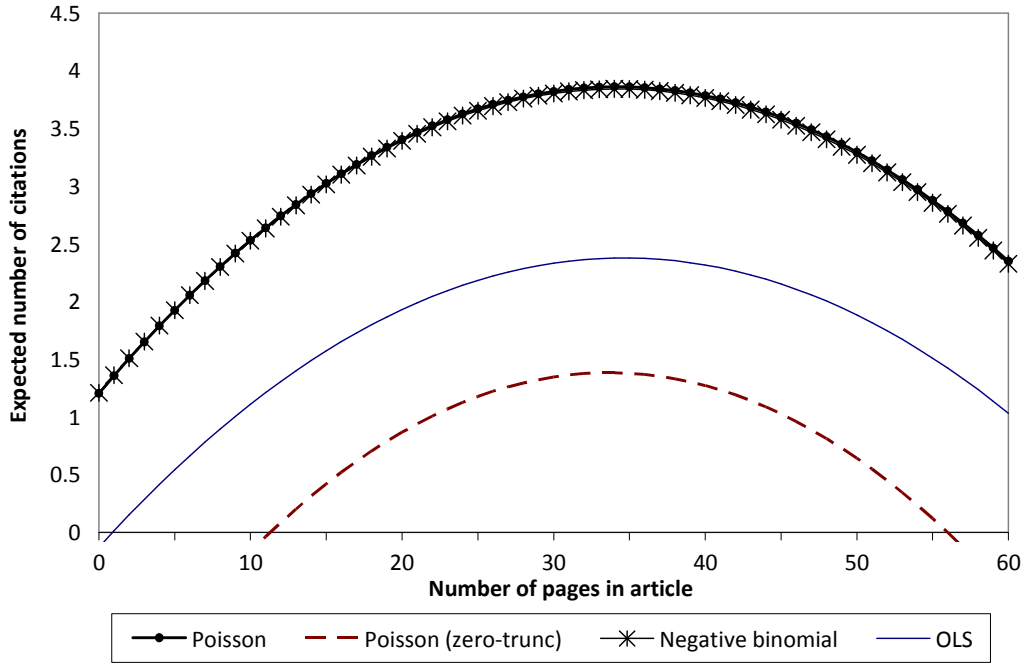
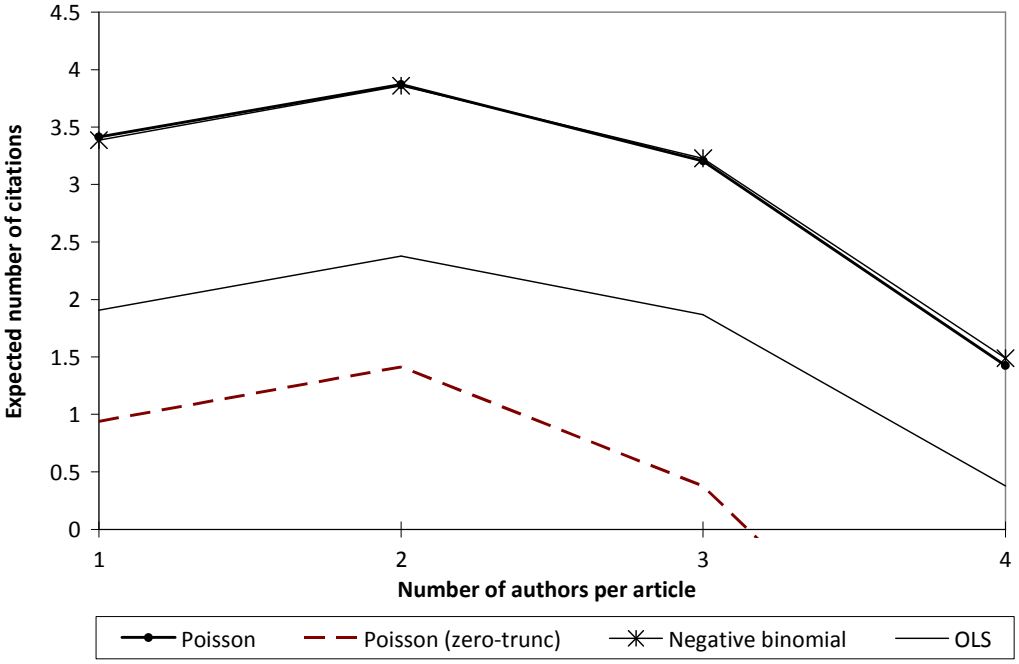


Figure 3: Article length and expected citation success.



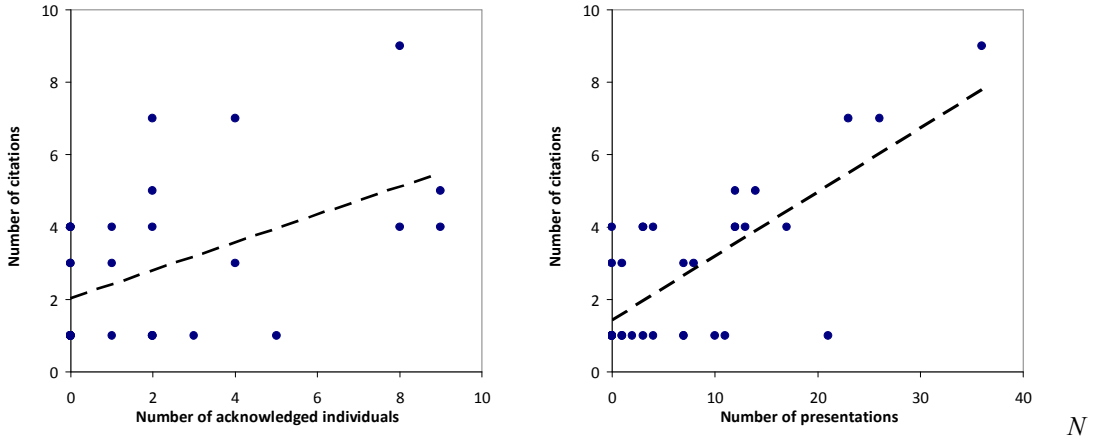
Note: Calculations are based on estimates in Table 3, i.e., using the marginal effects from pages and pages squared conditional on all the other controls.

Figure 4: Number of authors and citation success.



Note: Calculations are based on estimates in Table 3, i.e., using the marginal effects from authors and authors squared conditional on all the other controls.

Figure 5: Academic presentations and acknowledgments and citation success.



N

Note: The population in both graphs consists of 34 authors, constituting the top 17 and the bottom 17 (a random selection of all having one citation) in terms of citations of the basic sample population.

Table 1: Summary statistics

Variable	Description	N	Mean	S.D.	Min	Median	Max
	Basic sample (450 observations)						
Cites	Total number of citations	450	1.95	2.51	1	1	37
Selfcite-share	Share of self-citations	450	0.13	0.30	0	0	1
JCR-share	Share of JCR-journal citations	450	0.69	0.44	0	1	1
Length	Number of pages in articles	450	24.45	8.36	2	24	50
Authors	Number of authors	450	1.56	0.69	1	1.12	4
	Rich sample (325 observations)						
Cites	Total number of citations	325	2.18	2.84	1	1	37
Selfcite-share	Share of self-citations	325	0.16	0.33	0	0	1
JCR-share	Share of JCR-journal citations	325	0.68	0.45	0	1	1
Length	Number of pages in articles	325	25.55	8.09	5	25	50
Authors	Number of authors	325	1.67	0.73	1	2	4
Female	Female author	325	0.13	0.33	0	0	1
Anglo	From Anglo-Saxon country	325	0.66	0.48	0	1	1
Latin	From Latin European country	325	0.17	0.38	0	0	1
German	From Germanic country	325	0.08	0.27	0	0	1
Nordic	From Nordic country	325	0.05	0.21	0	0	1
Prof	Full professor	325	0.67	0.47	0	1	1
Associate	Associate professor	325	0.17	0.37	0	0	1
Top10univ	Top 10 university in THES[c]	325	0.07	0.26	0	0	1
Top1050univ	Top 10-50 university in THES[c]	325	0.13	0.34	0	0	1
Econ	Economics dept. affiliation	325	0.58	0.49	0	1	1
Hist	History dept. affiliation	325	0.12	0.32	0	0	1
Echist	Economic history dept. affiliation	325	0.14	0.34	0	0	1

Note: JCR-journals are journals listed in Thomson Reuter's *Journal Citation Reports*. Country groups are defined as follows. Anglo-Saxon: Australia, Canada, Ireland, New Zealand, United Kingdom, United States; Latin European: France, Italy, Portugal, Spain; Germanic: Austria, Belgium, Germany, Netherlands, Switzerland; Nordic: Denmark, Finland, Norway, Sweden.

[a] THES = Sunday Times Higher Educational Supplement, December 2007.

Table 2: The role of bibliometric variables (basic sample)

	Poisson	Poisson (zero–truncated)	Negative binomial	OLS
Selfcite–share	0.49**	0.47**	0.54**	0.59**
	(0.21)	(0.20)	(0.23)	(0.28)
Length	0.14***	0.21***	0.13***	0.12***
	(0.03)	(0.05)	(0.03)	(0.03)
Length squared	–0.00***	–0.00***	–0.00***	–0.00***
	(0.00)	(0.00)	(0.00)	(0.00)
Authors	2.42***	3.62***	2.35***	2.06***
	(0.58)	(0.79)	(0.57)	(0.53)
Authors squared	–0.63***	–0.99***	–0.60***	–0.51***
	(0.15)	(0.24)	(0.15)	(0.13)
JCR–share	0.29*	0.37*	0.30*	0.28*
	(0.16)	(0.20)	(0.16)	(0.15)
Constant	–1.72***	–5.34***	–1.70***	–1.79***
	(0.32)	(0.87)	(0.31)	(0.54)
Observations	450	450	450	450
R2 (pseudo, adj.)	0.13	0.21	0.07	0.48
Alpha			0.15	

Note: Dependent variable is the total number of citations (*Cites*). Coefficients are presented as marginal effects. Robust standard errors are in parentheses. Pseudo-R2 for all models except OLS for which R2-adjusted is used. ***, **, * denote statistical significance at the 1%-, 5%- and 10%-level.

Table 3: The role of academic variables (rich sample)

	Poisson	Poisson (zero–truncated)	Negative binomial	OLS
Selfcite-share	0.47	0.54**	0.57**	0.61*
	(0.29)	(0.24)	(0.28)	(0.35)
Length	0.16***	0.19***	0.15***	0.14***
	(0.04)	(0.05)	(0.04)	(0.04)
Length squared	–0.00***	–0.00***	–0.00***	–0.00***
	(0.00)	(0.00)	(0.00)	(0.00)
Authors	2.34***	2.74***	2.13***	1.94***
	(0.73)	(0.83)	(0.63)	(0.69)
Authors squared	–0.63***	–0.76***	–0.55***	–0.49***
	(0.19)	(0.23)	(0.15)	(0.16)
JCR–share	–0.20	–0.05	–0.06	–0.09
	(0.27)	(0.27)	(0.22)	(0.26)
Female	–0.44*	–0.47**	–0.31	–0.25
	(0.24)	(0.24)	(0.19)	(0.21)
Anglo	0.98***	1.13***	1.00***	1.10***
	(0.26)	(0.29)	(0.24)	(0.30)
Latin	0.51	0.95	0.61	0.53
	(0.55)	(0.77)	(0.52)	(0.50)
German	1.02*	1.52	1.10**	0.93**
	(0.56)	(0.98)	(0.54)	(0.38)
Nordic	–0.03	0.02	0.05	0.08
	(0.35)	(0.54)	(0.34)	(0.33)
Professor	0.95***	1.01***	0.89***	0.98***
	(0.19)	(0.23)	(0.17)	(0.20)
Associate	0.12	0.30	0.14	0.13
	(0.25)	(0.41)	(0.22)	(0.20)
Top10univ	0.81	–0.22	–0.29	–0.40
	(1.09)	(0.35)	(0.38)	(0.52)
Top1050univ	–0.31	–0.24	–0.28	–0.34
	(0.26)	(0.24)	(0.23)	(0.31)
Econ	0.68**	0.68**	0.40**	0.34*
	(0.30)	(0.27)	(0.19)	(0.19)
Hist	1.86***	2.44***	1.61***	1.41***
	(0.59)	(0.93)	(0.50)	(0.44)
Echist	0.16	0.46	0.08	–0.02
	(0.38)	(0.54)	(0.32)	(0.32)
Constant	–2.63***	–6.39***	–2.49***	–3.64***
	(0.45)	(0.96)	(0.40)	(0.83)
Observations	325	325	325	325
R2 (Pseudo/Adj.)	0.11	0.30	0.10	0.55
Alpha			0.13	

Note: Dependent variable is the total number of citations (*Cites*). Coefficients are presented as marginal effects. Robust standard errors are in parentheses. Pseudo-R2 for all models except OLS for which R2-adjusted is used. ***, **, * denote statistical significance at the 1%-, 5%- and 10%-level, respectively.

Table 4: Testing equality of estimated coefficients (from Table 4)

Test	F-statistic	Prob.>F
Echist = Econ	4.40**	0.04
Econ = Hist	0.89	0.35
Echist = Hist	6.08**	0.01
Anglo = Latin	0.76	0.38
Anglo = German	0.12	0.73
Anglo = Nordic	13.73***	0.00
Latin = German	0.28	0.60
Latin = Nordic	3.44*	0.06
German = Nordic	6.99***	0.01
Prof = Associate	14.41***	0.00
Top10univ = Top1050univ	0.00	0.99

Note: The tests are based on Poisson regressions in Table 3, column 1.

Table 5: The effect of research diffusion

	Number of acknowledgment in the form of:					
	Comments from individuals			Seminar/conference presentations		
Diffusion	0.12***	0.10***	0.10***	0.29***	0.19**	0.20**
	(0.01)	(0.02)	(0.02)	(0.07)	(0.08)	(0.08)
Length		0.14	0.14		0.19	0.19
		(0.09)	(0.09)		(0.13)	(0.12)
Length squared		–0.00	–0.00		–0.00	–0.00
		(0.00)	(0.00)		(0.00)	(0.00)
Authors		1.97	1.18		2.01	–0.29
		(1.95)	(2.53)		(2.63)	(2.71)
Authors squared		–0.60	–0.35		–0.68	0.08
		(0.50)	(0.72)		(0.68)	(0.72)
Years published		–0.10*	–0.09		–0.03	–0.00
		(0.06)	(0.06)		(0.08)	(0.07)
Any professor			0.42			1.22***
			(0.82)			(0.43)
Constant	1.05***	–2.56	–2.59	1.38***	–4.99	–4.77
	(0.29)	(4.36)	(4.28)	(0.33)	(8.73)	(7.77)
Observations	34	34	34	34	34	34
Pseudo R2	0.17	0.20	0.20	0.08	0.14	0.16

Note: Dependent variable is the total number of citations (*Cites*). Poisson regressions with coefficients are presented as marginal effects. Robust standard errors are in parentheses. *** and ** denote statistical significance at the 1%- and 5%-level.