

What's In a Title?

Predictors of the Productivity of Publications

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Abstract

This paper examines the impact of titles and other characteristics of published economics articles on the ultimate success of these articles, as measured by their cumulative citations over the six year period following their publication. Interestingly, poetic titles are pivotal to the productivity of published empirical papers, but detrimental to that of theoretical papers. Another finding of general interest is that the reputation of authors and their institutions counts much more toward the success of empirical papers than toward that of theoretical papers.

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There is all the poetry in the world in a name. It is a poem which the mass of men hear and read. I want nothing better than a good word. The name of a thing may easily be more than the thing itself to me.

Henry David Thoreau, "A Yankee in Canada" (1853)

Producers brand their products, parents name their children, and authors title their papers. Economists have long recognized the importance of brand names in product performance (Zipf, 1950, Mayers-Levy, 1989, and Wiggins and Raboy, 1996), and have recently analyzed the effect of individual names on labor-market performance (Bertrand and Mul-lanaithan, 2003, Fryer and Levitt, 2003, and Aura and Hess, 2004). This paper explores the effect of titles and names on the performance of academic articles. When readers pick up the latest issue of a journal, they may first scan the titles, or the names of the authors and their institutions, to infer something about the interest or content of the articles. Readers might discriminate in favor of papers with poetic or catchy titles, or papers by big name authors at high-ranking universities, and these may be the papers they end up choosing to read and incorporate into their own research.

For the period 1992-96, data was gathered from JSTOR on all single-authored papers (but not comments or communications) in regular issues of the *American Economic Review* (AER), *Journal of Political Economy* (JPE), and *Quarterly Journal of Economics* (QJE), widely regarded as three of the leading refereed, general-interest journals in economic science. This produced a sample of 268 papers. For each paper in the sample published in year t , data on citations by other authors to that paper in years $t+1$ to $t+6$ was gathered from the *Social Science Citation Index* (SSCI). Cumulative citations over the six year period after publication is the measure of an article's performance.

Each paper's title was classified according to whether it contains a poetic device (figure

or speech) or whether it is purely informative. For example, “Digging for Golden Carrots” (Taylor, 1995), contains a metaphor, “Ants, Rationality, and Recruitment” (Kirman, 1993), a personification, “The Optimality of Myopic Behavior” (Leahy, 1993), an oxymoron, “Competing Head-to-Head May be Less Competitive” (Klemperer, 1992), a synecdoche, “Warm-Glow Versus Cold-Prickle” (Andreoni, 1995), an antithesis, “Would Harassing Drug Users Work?” (Lee, 1993), a rhetorical question, and “Measurement Matters” (Belongia, 1996), an alliteration.² On the other hand, “A Solution to the Problem of Externalities When Agents are Well-Informed” (Varian, 1994), is an example of a title classified as purely informative.

A paper also bears the name of its author, who has a reputation, as well as a degree of skill, out of which the article was made. A more able author may produce inherently higher-quality papers, or may have acquired fame and a greater audience. To account for these factors, each author’s citations by other scholars in year t was compiled from the SSCI.

A paper also sports the names of the author’s institution and the journal that published it, each of which also have a reputation. Thus, authors were classified according to whether they belonged to an economics department, or were in business or government; and economics departments were further classified according to the world ranking reported in Kalaitzidakis *et al* (2003).³ Indicator variables for each journal are also employed in the formal estimation.

Research in some fields of economics may be more cited than research in others. Thus, a paper’s JEL classification is recorded. Similarly, empirical research may be more or less cited than theoretical research. Thus, each paper is classified as empirical if it includes tables or figures that depicted data. Empirical papers are further classified as experimental if the

² Packard (1994) contains a list, definitions, and examples of commonly used poetic devices. The list was used for the classification.

³ The authors used citations data for the period 1995-1999 to construct the ranking. The data used in this paper is for the period 1992-1996. Department rankings may have changed between these two periods, but not substantially.

data were generated by controlled experimentation in a laboratory. The presence of a mathematical appendix is also recorded for theoretical papers. A mathematical appendix may be indicative of more technical detail, or less interpretation in terms of economic intuition.

A paper's length may affect its productivity, so data was obtained on the number of pages in each paper. To account for differences in page length across journals, these are adjusted and the number of AER-equivalent pages is used.

Other recorded paper characteristics include whether the author employed research assistance, whether the author received a grant for the underlying research, and how many colleagues or peers offered the author comments on the paper. By presenting papers at seminars or discussing them informally with peers, authors often receive valuable suggestions for improvement. The number of peer acknowledgements made by the author is a proxy (albeit a rough one) for the positive externalities that the author enjoyed by being in, or traveling to, a productive research environment.

Authors who have received a grant to support the research underlying their paper have already successfully passed through a selection process. Moreover, grants may allow researchers to undertake larger or more expensive projects, which may be more productive than smaller or less expensive ones.

Grants are sometimes used to support research assistants. For empirical work on small samples, minor mistakes made by an inexperienced assistant may affect the results. In these cases, research assistance may be counter-productive. In other cases, relationships between researcher and assistant may be very productive, especially if the latter is a graduate student under the former's supervision.

Table 1 describes the sample of 268 papers for which the aforementioned article characteristics were gathered. Approximately thirty percent of papers in the sample have a figure

Table 1: Means (SD) of Variables Describing Aspects of Papers, by Method

Variable	All	Theory	Empiric
Cites to paper, year $t + 1$ to $t + 6$	19.354 (19.314)	17.691 (18.721)	20.816 (19.760)
Poetic title	0.283 (0.451)	0.316 (0.467)	0.258 (0.439)
Grant	0.604 (0.489)	0.551 (0.499)	0.653 (0.477)
AER-equivalent pages	17.536 (5.166)	16.719 (4.968)	18.233 (5.246)
Cites of author, year t	22.626 (36.562)	25.016 (41.694)	20.204 (31.371)
Econ. department	0.813 (0.391)	0.809 (0.393)	0.816 (0.388)
Econ department rank	47.821 (61.026)	42.551 (56.047)	52.125 (64.723)
Research assistance	0.268 (0.444)	0.133 (0.341)	0.380 (0.487)
Peer acknowledgements	6.858 (4.778)	6.491 (4.535)	7.156 (4.978)
Math appendix		0.625 (0.486)	
Experimental			0.034 (0.181)
N	268	121	147

of speech in the title. The average paper in the sample was cited nineteen times over the six-year period following its publication. The mean six-year productivity, number of peer acknowledgements, and length, of empirical papers are greater than those of theoretical papers. The t-statistics testing the hypothesis that the mean productivity, peer acknowledgements, and length of empirical papers is the same as those of theoretical papers are $t = 1.326$, $t = 1.143$, and $t = 2.421$, respectively. At reasonable significance levels, the null hypothesis is only rejected for mean length.

Approximately eighty percent of papers were written by authors affiliated with economics departments. The mean ranking of the departments of the published empirical authors is lower than that of the published theoretical authors. This suggests that mainly authors from top universities publish theoretical research in top journals, while authors from a broader range of universities publish empirical research in top journals. The average career citations count of theoretical authors is also greater than that of empirical authors, suggesting that mainly authors with proven track records and big names publish theoretical research in top journals, while less experienced and lesser known authors can nevertheless publish empirical research in top journals. However, the t-statistics testing the hypothesis that the mean ranking of author affiliation and author career citations count are the same across method are $t = 1.297$, and $t = 1.049$, respectively.

To test whether titles, as well as the names of authors, authors' institutions, and journals of publication, have an effect on the productivity of articles, controlling for other article characteristics, the following regression was performed

$$\sum_{j=1}^6 P_{t+j,i} = \alpha + \beta PoeticTitle_i + X_i\delta + \varepsilon_i \quad (1)$$

where $\sum_{j=1}^J P_{t+j,i}$ is the cumulative number of citations that article i received six years after it was published, and X contains other article characteristics (including eighteen JEL classi-

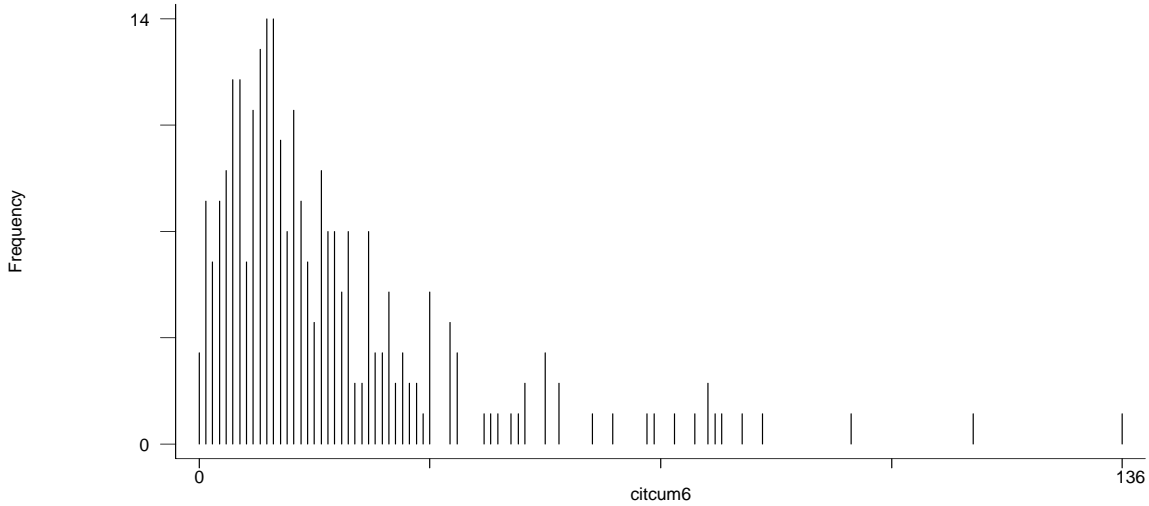


Figure 1: Cumulative Citations Over the First Six Years after Publication, Frequency Distribution

fication dummies), as well as author and journal characteristics. Figure 1 plots cumulative citations over the six-year period after publication. Because of its skewness, its concentration at zero, and its integer values, equation (1) is estimated using Poisson regression. The results are reported in Table 2. The first two columns present the coefficient estimates and marginal effects for the entire sample. For dummy variables, such as *Poetic title*, the “marginal” effects are for discrete changes from 0 to 1.

In the full sample, poetry in the title has a positive and statistically significant impact on an article’s citations. However, the effect is small. A poetic title earns the average paper a modest one and a half extra citations over its lifetime. But the effect is much larger if only empirical papers are considered. The third and fourth columns present the coefficient estimates and marginal effects for the sub-sample of empirical papers, while the last two columns present them for the sub-sample of theoretical papers. A poetic title earns an empirical paper almost four and half extra citations over its lifetime, but reduces a theoretical paper’s lifetime citations by almost three.

Table 2: Coefficient Estimates (SD) of the Determinants of Paper Productivity

Variable	All ($N = 268$)		Empiric ($N = 147$)		Theory ($N = 121$)	
	$\sum_{j=1}^6 P_{t+j}$	Mfx	$\sum_{j=1}^6 P_{t+j}$	Mfx	$\sum_{j=1}^6 P_{t+j}$	Mfx
Poetic title	0.077 (0.033)	1.425	0.219 (0.047)	4.423	-0.200 (0.055)	-2.747
Grant	0.146 (0.033)	2.599	0.038 (0.048)	0.719	0.324 (0.058)	4.622
AER-pages	0.029 (0.003)	0.530	0.005 (0.004)	0.103	0.090 (0.006)	1.302
AER	-0.120 (0.038)	-2.141	-0.286 (0.052)	-5.229	-0.116 (0.069)	-0.668
JPE	-0.175 (0.039)	-3.071	-0.0213 (0.050)	-3.929	-0.197 (0.074)	-2.747
Author cites, year t						
10-49	0.334 (0.033)	6.427	0.404 (0.048)	8.457	0.341 (0.057)	5.189
50-99	0.020 (0.061)	0.375	0.397 (0.080)	9.073	-0.441 (0.115)	-5.344
≥ 100	0.180 (0.061)	3.531	0.653 (0.084)	16.915	-0.280 (0.111)	-3.609
Econ dept	0.030 (0.041)	0.537	-0.117 (0.061)	-2.335	0.339 (0.079)	4.428
Econ dept * Rank						
0-10	0.206 (0.045)	3.899	0.284 (0.054)	5.822	0.161 (0.068)	2.397
11-20	-0.052 (0.041)	-0.925	-0.007 (0.065)	-0.133	-0.363 (0.081)	-4.620
21-30	-0.119 (0.067)	-2.056	0.028 (0.082)	0.559	-0.647 (0.136)	-7.099
Research assistance	-0.071 (0.033)	-1.257	0.015 (0.041)	0.286	-0.623 (0.092)	-7.270
Acknowledgements	0.018 (0.002)	0.332	0.002 (0.004)	0.039	0.056 (0.005)	0.814
Empirical	0.190 (0.032)	3.406				
Math appendix					-0.516 (0.061)	-8.005
Experimental			-0.197 (0.124)	-3.435		
LR chi2(32)	722.29		509.60		817.99	
Pseudo R2	0.142		0.183		0.357	

Thus, a rhetorical flourish in the title is counter-productive for theoretical papers, but very productive for empirical papers. Indeed, an extra four and a half citations represents about twenty percent of the lifetime citations of an average empirical article. Perhaps poetic titles are more productive in empirical work because such work appeals to a more general audience, and general readers are more susceptible to rhetoric. Another theory is that empirical work has more caveats and interpretational subtleties than theoretical work. Therefore, summaries that stick the major point in the brain of the reader may be correspondingly more valuable for empirical work. The empirical result is an amusing reminder that economics is an art as well as a science.

In the full sample, articles by authors from top ten economics departments received almost four more citations over their lifetime than articles by authors from economics department that are not in the top thirty. Articles by authors with between ten and fifty career citations received almost six and a half more citations than articles by authors with fewer than ten career citations. These effects are larger for empirical papers, and smaller for theoretical papers. This suggests that having a reputation may be more productive in empirical research than in theoretical research. Indeed, empirical articles by “superstar” authors with more than one hundred career citations earn a whopping sixteen more citations than empirical articles by “no name” authors with fewer than ten career citations; while theoretical articles by superstar authors received more than three and half fewer citations than theoretical authors with fewer than ten career citations.

Grants, length, and peer acknowledgements each have a positive impact on an article’s productivity, while research assistance has a negative impact on an article’s productivity. Surprisingly, grants are especially productive for theoretical papers. Not surprisingly, research assistance is especially counter-productive for theoretical papers.

Perhaps the most striking result is the last entry in the last column of Table 2. A mathematical appendix reduces a theoretical article's lifetime productivity by more than eight full citations. Too much technical detail may be negative. But relegating technical detail to appendix may also be negative. Incorporating the mathematical expressions into the body of the text probably forces authors to simplify these expressions and interpret them in terms of economic intuition, and this may be very productive.

To distinguish between these two possible sources of the negative impact of a mathematical appendix, the theoretical papers were classified according to whether they have a lot of mathematics, based on a simple visual scan of them. A t-test easily rejected the hypothesis that the mean citations of the highly mathematical papers without math appendices is equal to that of the highly mathematical papers with math appendices, in favor of the alternative that the former is greater than the latter. This suggests that highly mathematical papers that provide intuition for the technical detail in the text do better than those that relegate technical detail to appendix without intuition. It would be interesting to test whether this continues to hold in a sample of papers published in highly mathematical journals, such as the *Journal of Economic Theory* or *Econometrica*.

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