each sector is indifferent to where a wager is placed or what type of wager is made. The incentive for the needless competition for the wagered dollar is removed. All that is important and mutually beneficial to all sharing parties is that the patron participates in the pari-mutuel system in some manner.

The revenues of each sector are safeguarded by the indifference principle. However, it is obvious that even though state government’s revenues are maintained, it is only sector which is not indifferent with respect to where the wager is placed. The state’s best interest is served by racetrack patronization. But, this is a positive attribute of the distribution scheme since it provides some assurance that racetracks do not become hollow structures where races are viewed solely by camera crews and videotape machines.

Many variations to the tax and distribution scheme suggested here are possible. Fine tuning some derivative of the indifference principle may best serve the interests of everyone involved in the pari-mutuel horseracing industry. The principle of indifference is of central importance if the revitalization of the New York pari-mutuel industry takes the form of new innovative wagering mechanisms. If all participants are indifferent to where the patron wagers, then a truly concerted effort to introduce and promote innovative wagering mechanisms can begin—regardless of where they are based. Given that simulcasting—the live telecast of races in OTB parlors—appears on the horizon, it seems that the implementation of some form of the indifference principle should serve as a necessary prerequisite to the introduction of any new wagering mechanism. Then both the racing industry and government can truly form a partnership to promote the overall sport of horseracing.

A Qualitative Test of Journal Discrimination Against Women

David N. Laband*

Recent evidence by Ferber & Teiman (F-T; 1980) indicates that rates of manuscript acceptance are higher for female and female/male authors than for male authors in economics journals employing a double-blind reviewing process, while the reverse holds true for non-blind economics journals. The fact that female-authored manuscripts enjoy a higher acceptance rate when they receive “even-handed treatment” is interpreted by F-T as evidence that women tend to submit higher quality manuscripts than men; lower acceptance rates at non-blind journals thus reveal discrimination against women.

As Lott pointed out in his (1983) critique of F-T’s methodology, interpretation of differential rates of manuscript acceptance between female and male authors across double-blind and non-double-blind journals as discrimination against female authors may be incorrect if submission strategies differ by sex of author and type of review process. To avoid this problem, one would need to control for quality of manuscript submissions—an admittedly difficult task.

A more general criticism of the editorial process is that editors decide to whom to send a manuscript for initial review; judicious choice can effectively guarantee a decision that justifies the editor’s publishing proclivities vis-à-vis sex of author, topic of concern, personal identity of the author, etc. One can test, after the fact, for discrimination in the editorial process, although it is extremely difficult to pinpoint the exact source of any discrimination that is found.

An examination of differences in quality of articles published by male versus female authors could be the heart of any analysis of potential editorial discrimination by sex. To the extent that journal editors accept demonstrably lower quality manuscripts for publication from men than they require from women, differential rates of publication success are an inevitable result, with consequent implications for career development of members of each sex.

Equation (1) models the general determinants of measurable quality of articles:

\[
\text{Quality} = f(\text{author's article reputation, author quality})
\]

Quality of a specific article can be proxied by subsequent citations of that article by researchers. Article-specific citations are available in the Social Sciences Citation Index, which is an annual publication that lists all citations to books and articles that have appeared in over 5,200 journals (and other periodicals) written by individuals in the Social Sciences. For example, the 1983 volume, under Buchanan, lists alphabetically, all of the individuals who referenced Buchanan and Tullock’s well-known volume, The Calculus of Consent (1962) in.

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I have benefited from suggestions by Marianne Ferber and the exceptionally able research assistance of J.P. Sophocles. The usual caveat applies.
articles published during 1983. Similarly, it lists by name every author who cited any of Buchanan’s work.

The use of citations as an “objective” measure of an author’s contribution is analogous, in certain respects, to dollar voting for goods and services in private markets. Both are evidence of voluntary choice behavior (revealed preference), and both serve to monitor the intensity of product appeal (impact). The pros and cons of using citations as a proxy for article quality have been aired extensively in the economics literature (Gerrity & McKenzie, 1978; Stigler & Friedland, 1975; Vanderneuen, 1972). For the proxy purposes of this investigation, there is no reason to believe that any of the suggested flaws differentially affect one sex or the other.

Citations may similarly be used to estimate an author’s professional reputation. Although data collection is tedious, one might proxy reputation by the total number of citations attributed to an author over the course of his/her professional career. Similarly, the proxy could consist of total citations over some period of time (e.g., five or ten years) of all previous work published by the referent author.

Presumably, the recognized quality of published research is at least partly a function of two additional, related factors: perceived quality of the journal and exposure received by the article. Both influences can be proxied with the aid of the SSCI—perceived quality of journal can be proxied by average number of citations per article published during some specified time period, while exposure can be proxied by measuring readership (subscription) of a journal, or by total citations of the material published over a specified time period. The specific form of equation (1) that was estimated is presented in equation (1) and explained below.

\[ (1) \text{CITES} = \alpha_0 + \alpha_1 \text{REPUTATION} + \alpha_2 \text{REPUTATION}^2 + \alpha_3 \text{REVIEW} + \alpha_4 \text{SEX} + \alpha_5 \text{LENGTH} + \alpha_6 \text{THEORY} + \alpha_7 \text{JNQUAL} + \alpha_8 \text{COAUTHOR} + \epsilon, \]

where CITES = the total number of citations of article i reported in the Social Sciences Citation Index over the years 1977–82, inclusive, excluding self-citations;

REPUTATION = total citations reported in the SSCI during the years 1971–75, inclusive, for the author of article i, as a proxy for the author’s reputation;

REVIEW = 1 for a review article, 0 for non-review articles;

SEX = 1 if the author(s) of article i were male, 0 if article i was coauthored by a female;

LENGTH = number of AER-equivalent-sized pages published as article i, where i includes 5,880 articles and notes published during 1974–76, inclusive, in 39 leading economics journals (the list of sampled journals is available from the author upon request);

THEORY = 1 if article i was theoretical, 0 if empirical;

JNQUAL = a relative quality ranking of the 39 sample journals, based on average, per article citations (1977–82) of articles published during 1974–76. Values for both articles and journals are divided by the number for the highest quality journal, which scales the index from zero to one;

COAUTHOR = 1 for coauthor articles, 0 for singly-authored articles, and

\( \epsilon \) = a random disturbance term.

The number of citations received by an author for publishing article i is expected to be a positive relationship to the author’s reputation, proxied by citations, for reasons outlined by Gerrity and McKenzie (1978). Thus, \( \epsilon \) is thus expected to sign positively; the predicted sign on the squared term is unclear a priori. Citations are also expected to be a positive function of article length, partly because, as suggested by Vanderneuen (1972), certain types of eminently publishable research that contain qualitative contributions to economic knowledge will be relatively lengthy, and partly because of the high probability that the shorter notes that are included in the sample are end-of-the-line comments to previous discussions, whereas longer, first-time articles are more likely to stimulate further theoretical and/or empirical development of an idea. I thus expect \( \alpha_1 \) to show a positive sign. Since the value of JNQUAL rises with revealed quality of material published in the journal under consideration, \( \alpha_7 \) should sign positively as well. Review articles should predictably receive more citations than the average non-review article, since they are ready sources of collected information from numerous previous researchers, and thus, constitute a low-cost source of knowledge to current investigators. \( \alpha_5 \) should therefore sign positively. Discrimination by editors with respect to quality of material published by male versus female authors clearly implies a negative sign on \( \alpha_4 \). That is, if journal editors accept lower quality manuscripts for publication from male authors than they require from female authors, average number of citations per article will be measurably lower for the former category of author than for the latter. Since it has been argued to me in private correspondence by reviewers that economic theory is cited more frequently than empirical work, the THEORY variable was included to test the proposition. Finally, inclusion of the 0-1 dummy variable COAUTHOR, controlling for reputational effects through JNQUAL, permits us to test Lott’s conjecture about the Adam Smith-type gains from coauthorship. A positive and significant sign on \( \alpha_8 \) would confirm the benefits to specialization and division of labor in academic research.

Results of empirical estimation of the relationships described in equation (1) are reported in the following Section.

**EMPIRICAL RESULTS**

The estimation procedure employed is ordinary least squares (OLS) regression. The OLS regression results for equation (1) are reported in Table 1 and discussed below.

As predicted, popularity (as revealed quality) of a published article depends strongly upon reputation of the author (with diminishing effects), length of article, and relative popularity of the publishing journal. Estimated coefficients on each of these variables are significant at the .01 level.

**TABLE 1**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>Std. Error</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>-2.835</td>
<td>0.844</td>
<td>-3.314***</td>
</tr>
<tr>
<td>Reputational</td>
<td>0.151</td>
<td>0.694</td>
<td>0.224</td>
</tr>
<tr>
<td>RepreVenue</td>
<td>-0.614</td>
<td>-0.964</td>
<td>-0.639***</td>
</tr>
<tr>
<td>Length</td>
<td>0.737</td>
<td>0.766</td>
<td>0.229***</td>
</tr>
<tr>
<td>Theory</td>
<td>-0.260</td>
<td>0.303</td>
<td>-0.85</td>
</tr>
<tr>
<td>JNQUAL</td>
<td>0.534</td>
<td>0.373</td>
<td>1.478***</td>
</tr>
<tr>
<td>COAUTHOR</td>
<td>0.139</td>
<td>0.139</td>
<td>1.006</td>
</tr>
</tbody>
</table>

\( R^2 = .139 \)  
\( R^2 = .139 \)  
\( N = 5,880 \)

***Significant at .01 level
0.01 level. The data reveal no statistically significant differences between male and female authors in terms of quality of material published. Not surprisingly, review articles receive significantly more citations than ordinary articles. The theoretical/empirical content of an article appears to exert no significant impact on subsequent citations. On the other hand, the strongly positive estimate for $a_6$ supports Latte's hypothesis about the gains from coauthorship in academic research.

CONCLUDING COMMENTS

Based on the empirical results reported in Section III, there is no reason to believe that journal editors in the economics profession discriminate against female authors, in terms of the qualitative standards for an affirmative publication decision. While Ferber and Teiman's suggestion that women authors submit higher quality material than men do may, in fact, be correct, it does not follow that such a differential reveals an operating entry barrier to women economists. There is no particular qualitative difference between material published by members of each sex, which reinforces the F-T finding that acceptance rates for women authors are higher than for men, ceteris paribus.

FOOTNOTES

1. In an as-yet-unpublished paper, Marianne Ferber argues that there is, in fact, an operative sex-bias in citations that favors male authors. Even if Ferber's claim is substantiated, interpretation of those findings is difficult, since such differences may reflect cost-of-information differences between the two sexes, with no intentional discrimination implied.

2. For coauthored articles, cities are summed across all contributing authors to obtain a single figure proximing repetition. I deliberately sum citations rather than take the individual with the highest number, since each author of a jointly-authored paper may attract readers that the other one does not.

3. The empirical results reported in Section III are completely unaffected by replacement of JNLQUAL by JNLQUAL-1. Total cites (1977-82) of articles published during 1974-76. The reported estimations have a slightly better fit than the empirical ones.

4. They argue (p. 610): "Technically speaking, the number of citations that a given economist receives during a year is a measure of the flow of citations a stock of past articles. We argue that this flow serves as a proxy for the value of the human capital on which a department or individual can draw. The productivity of a department or individual is a function of this flow and its stock. Similarly, the number of citations given individual receives for a specified article is a function, not of the stock of previous articles written, but of both the stock and flow of recognition stemming from that previous work.

REFERENCES


Ferber, M.A., "Citation: Are They an Objective Measure of Work of Men and Women?" (Unpublished, 1983).

