How often is endogeneity addressed in published research?

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How does published strategy research approach the endogeneity problem?

- **Definition**: An endogeneity (or identification) problem == multiple explanations for observed data
  - Purist view: RCT’s are the “one true solution”

- Acknowledging and addressing endogeneity is related to broader idea of “empirical etiquette”
  - http://people.bu.edu/tsimcoo/etiquette.html

- Strong priors, *but no systematic evidence* that endogeneity under-appreciated in strategy research
Let’s gather some evidence!

- “In God we trust, all others bring data”

- Compulsory crowd-sourcing
  - Collaboration with Goldfarb, King & Waguespack
  - PhD Class: “Causal Inference for Management Research”
  - Developed “Empirical Etiquette” survey (see web site)

- Methods
  - Identify empirical papers using observational data
    - AMJ, ASQ, MS, OS & SMJ from 2003 to 2012
    - Randomly assign 1 paper per student-week for semester
    - Discuss surveys each week at start of class
Today’s Agenda

- Evidence on endogeneity
  - Different flavors (OVB, Selection, etc.)
  - Across journals and over time

- Evidence on other stuff
  - Discussing effect size
  - Page counts by content-type

- Take-aways
  - More awareness but less momentum than expected
  - Endogeneity = OVB and Selection (not simultaneity)
  - Little discussion / comparison of effect sizes
  - Management Science is the outlier
Causal Claims and Endogeneity

- Does the paper place a causal interpretation on the relationship between X and Y?
- Does the paper discuss potential problems with a causal interpretation?

<table>
<thead>
<tr>
<th>Causal Claims?</th>
<th>Problems Discussed?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>No</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>20%</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>35%</td>
</tr>
</tbody>
</table>

N = 140 papers
### Flavors of Endogeneity

- Does the paper **discuss potential problems**? Please select “Yes” or “No” for each:

<table>
<thead>
<tr>
<th>Flavor</th>
<th>% of Total*</th>
<th>% of “Yes”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endogeneity (General)</td>
<td>36</td>
<td>49</td>
</tr>
<tr>
<td>Selection Effects</td>
<td>30</td>
<td>41</td>
</tr>
<tr>
<td>Omitted Variables</td>
<td>24</td>
<td>32</td>
</tr>
<tr>
<td>Reverse Causality</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Simultaneity</td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>

*Percentages may sum to more than 100 because papers can discuss multiple flavors.*
Endogeneity over time

Share of Papers Addressing Endogeneity

- 2003-2005
- 2006-2009
- 2010-2012
Endogeneity across journals

- AMJ
- ASQ
- MS
- OS
- SMJ

Share of Papers Addressing Endogeneity
Discussing economic significance

- Does the paper discuss the **magnitude** or **economic significance** of its estimates?

<table>
<thead>
<tr>
<th>Response</th>
<th>Percentage</th>
<th>Count</th>
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</thead>
<tbody>
<tr>
<td>No, only sign and significance</td>
<td>57%</td>
<td>79</td>
</tr>
<tr>
<td>Yes, paper discusses effect size</td>
<td>38%</td>
<td>53</td>
</tr>
<tr>
<td>Yes, and compares to previous estimates</td>
<td>5%</td>
<td>7</td>
</tr>
</tbody>
</table>
Effect-size over time

Share of Papers Discussing Magnitudes

2003-2005
2006-2009
2010-2012
Effect-size across journals

Share of Papers Discussing Magnitudes

AMJ | ASQ | MS | OS | SMJ
Allocation of pages

- How many pages devoted to following topics?

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page Count</th>
<th>Percent</th>
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</thead>
<tbody>
<tr>
<td>Theory</td>
<td>5.1</td>
<td>37%</td>
</tr>
<tr>
<td>Data</td>
<td>3.1</td>
<td>24%</td>
</tr>
<tr>
<td>Methods</td>
<td>1.4</td>
<td>10%</td>
</tr>
<tr>
<td>Results</td>
<td>3.9</td>
<td>29%</td>
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</tbody>
</table>
Page allocation by Journal

AMJ

ASQ

MS

OS

SMJ

Theory

Data

Methods

Results
Conclusions

- Caveats
  - Amateur-ish survey methods on difficult topic
  - PhD-student respondents
  - Small sample of articles

- Take-aways
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