

# Natural Experiments in Management Research: Emerging Practices and Evaluation Guidelines

Simone Santoni<sup>•°</sup> and Jost Sieweke<sup>\*</sup>

<sup>•</sup>Bayes Business School (formerly Cass)

<sup>°</sup>Soundcloud

<sup>\*</sup>Vrije Universiteit Amsterdam

June 22, 2021

(Structured draft — do not circulate)

## INTRODUCTION

The quest for empirical identification in management research has created substantial attention around ‘natural experiments,’ a form of causal inquiry that has been traditionally popular in economics (Meyer 1995; Rosenzweig and Wolpin 2000) and political science (Dunning 2008). The premise to conduct a natural experiment is the presence of a ‘naturally’ occurring event — such as new regulations and laws, natural disasters, or economic and political crises — that heterogeneously influences the units of a population (Dunning 2012; Robinson, McNulty, and Krasno 2009). Insofar as such event generates random or as-if random variations in the environment, scholars can mimic the experimental ideal in which units are split into a treatment and a control group or receive different levels of the treatment. Ultimately, this opens up the possibility of inferring causal effects when the substantive relationship at hand is difficult to investigate in a laboratory setting and/or require operating costly, impractical, or unethical field experiments.

Although naturally occurring events can turn into opportunities to conduct causal research, there are limited guidelines that help management scholars prepare and review papers that implement the natural experiment research design. To fill this gap, we highlight the strengths and weaknesses of natural experiments as operated in the field of management studies and propose actionable suggestions to assess and communicate the validity of natural experiments.

To do so, we critically review the population of 147 natural experiments published across seventeen top-tier management journals.<sup>1</sup> Our review aims to address the following research questions: *R1 — How do management scholars claim the random or as-if random nature of environmental variation at the core of a natural experiment?* *R2 — How do they claim the empirical and substantive relevance of a natural experiment?* *R3 — How do they claim the credibility of the statistical model encapsulated in a natural experiment design?*

This work is organized as follows. The next two sections briefly introduce the key features of the ‘standard natural experiment,’<sup>2</sup> along with the evaluative framework we use to analyze the individual natural experiments. The following section describes the selection of the reviewed studies. Then, we present the key insights that emerge from our analysis and conclude with a suggested checklist that helps management scholars to exploit the opportunities of causal inference offered by naturally occurring events. The online appendix presents an integrated set of Python scripts to implement standard natural experiments and to assess their validity.<sup>3</sup>

## NATURAL EXPERIMENTS AND CAUSAL EMPIRICAL RESEARCH

The standard natural experiment resembles the design of a randomized experiment. Naturally occurring events (such as earthquakes (e.g., Belloc, Drago, and Galbiati 2016)) are supposed to determine a statistical unit’s treatment status. As show in Figure 1, the availability of longitudinal data makes possible to estimate the causal effect of

<sup>1</sup> TODO: We’re updating the literature search on May 31, 2021.

<sup>2</sup> In his comprehensive, cross-disciplinary analysis of the literature, Dunning 2012 identifies three forms of natural experiments: Standard natural experiments; instrumental variables (Angrist, 1990); regression discontinuity designs (Thistlethwaite & Campbell, 1960). In the interest of clarity and integrity, our review concentrates on standard natural experiments, whose origin goes back to the highly acclaimed and impactful research Dr John Snow (Snow, 1855) conducted on the diffusion of cholera in the mid 19<sup>th</sup> century London. In this paper we use the term ‘natural experiment’ to exclusively refer to standard natural experiments.

<sup>3</sup> TODO: Jost and I have been working on a Python library that provides an integrated set of statistical and visualization capabilities for the analysis of natural experiments. Happy to share what we have produced so far.

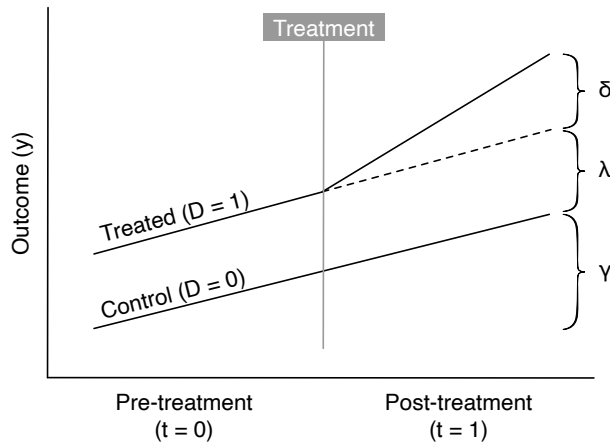


Figure 1: Visual representation of the standard natural experiment. The underlying population regression function is  $y = \gamma t + \lambda D + \delta tD$ , where  $\gamma$ ,  $\lambda$ , and  $\delta$  represent the systematic difference in the outcome across the treated and control cases, the trend effect, and the difference in the outcome that is due to the treatment. For the sake of clarity, we represent the case in which  $\delta > 0$ .

the treatment by contrasting the pre-post change in the outcome variable  $y$  across the control group ( $\gamma$ ) and the treatment group ( $\gamma + \delta$ ).

### Assessing the Validity of Natural Experiment Designs

How do (management) scholars evaluate a standard natural experiment research design? According to Dunning (2012, page 27), the validity of a natural experiment should be assessed against three criteria (see Figure 2). First, scholars should prove the random nature of the treatment or, at least, defend the plausibility of as-if random. In the *randomized standard natural experiment*, it is important that the assignment process is truly random. Although this may seem obvious, this condition is sometimes violated, even in the context of lotteries (e.g., Starr 1997). In the case of *as-if randomization*, it is vital the assignment process is: i) independent of factors that are related to the outcome, and ii) not affected by unit's self-selection into treatment or control conditions. As Dunning points out, the researcher has to make a compelling case for this assertion (or refrain from claiming he/she conducts a natural experiment). In-depth knowledge of the context (e.g., industry regulatory frameworks), qualitative evidence about the naturally occurring event (e.g., a new law), and quantitative evidence at the event- and unit-level are essential ingredients to defend the plausibility of as-if random assignment, and, ultimately, to sustain the natural experiment.

Second, the naturally occurring event should reveal the wider “*theoretical, substantive, and/or policy issues*” (Dunning 2012, page 29) that motivate the study. For example, the sudden, premature death of a star scientist (Azoulay, Zivin, and Wang 2010) create the premises for a natural experiment that quantifies the spill-over effect of collaborating with academics who are prominent in their fields of research.

Finally, the statistical model should fit with the characteristics of the naturally occurring event. In the case of a randomized standard natural experiment, simplicity and transparency should take precedence in the data analysis stage. Particularly, Neyman's potential outcomes framework (Splawa-Neyman, Dabrowska, and Speed 1990), namely, a treated Vs. control mean comparison test, should be used

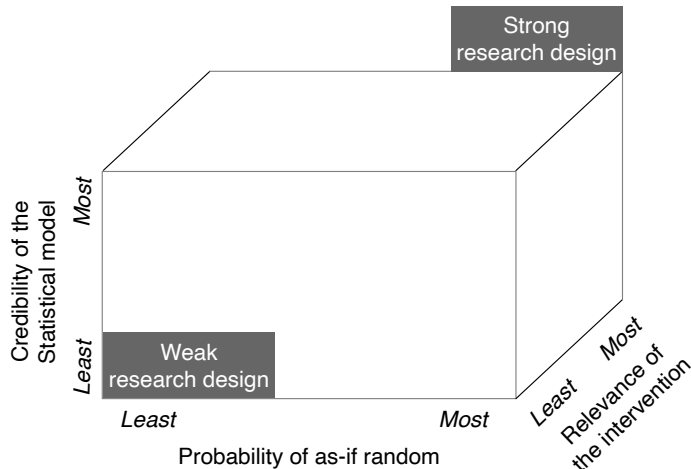


Figure 2: Visual representation of Dunning's validity framework (Source: (Dunning 2012, page 31))

*prima facie*. At the same time, some statistical adjustments may be required even in presence of a random (or as-if random) treatment. For example, the Stable-Unit-Treatment-Value-Assumption (SUTVA) may be violated insofar as the treatment status of a unit  $i$  interferes with the potential outcome of unit  $j$ . Such a concern is central in the Belloc and colleagues's (2016) study about the impact of earthquakes on institutional change at the city-level in the Middle-Ages northern and central Italy. Both the distribution and timing of earthquakes are random. However, the probability a control city will move from autocratic regimes to self-government is also a function of the information key actors are exposed to, such as the transition choices treated neighboring cities make. In this case, scholars may want to adopt some statistical adjustments to model the correlation of residuals induced by the geographical proximity of any pair of units.

## DATA & METHODS

### Sample of Studies

Consistently with review articles recently published in the Journal of Management (e.g. Gonzalez-Mulé and Aguinis 2018; Rindova et al. 2018), we restrict our literature review to a selection of prominent journals such as Academy of Management Journal, Administrative Science Quarterly, Entrepreneurship Theory and Practice, Journal of Business Ethics, Journal of Business Venturing, Journal of Management, Journal of Management Studies, The Leadership Quarterly, Management Science, Organization Science, Organization Studies, Research Policy, Strategic Entrepreneurship Journal, Strategic Management Journal, Strategic Organization. Using the search engine embedded in each journal's web page (see Table A1) reported in the Appendix), we searched for articles published after January 2000 that show the token "natural experiment\*" in the full text.

We retrieved 499 publications, 201 of which were eventually included in the review. Figure A5, reported in the Appendix, illustrates

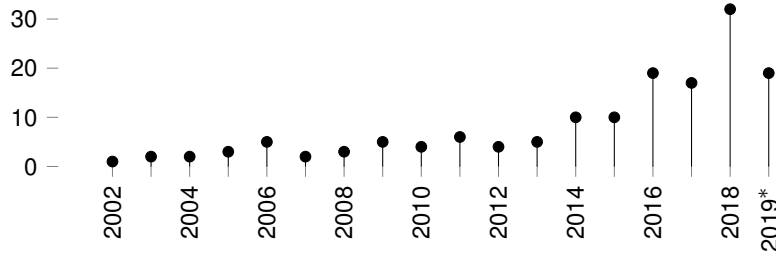


Figure 3: Inter-temporal distribution of natural experiment studies. The 2019 bucket, marked with an asterisk, contains both published and accepted, online articles.

the counts of excluded studies across the various categories. For example, We excluded 33 non-empirical publications, such as theoretical articles (e.g., Makadok 2011) or review articles (e.g., Shaver 2020), and articles that: i) recall the empirical evidence produced by previous natural experiments, ii) indicate natural experiments as a possible way to overcome the limitations or expand on the study at hand (e.g., Hsu 2006), iii) use the instrumental variable design (Zoloty 2018) or the regression discontinuity design (e.g., Flammer 2015). Finally, we excluded twelve qualitative studies adopting the logic of natural experiment (e.g., Powell and Baker 2017).

Furthermore, we filtered out articles whose authors claim to adopt a natural experiment research design, whereas, in fact, they operate: (i) correlational designs on observational data ( $N = 53$ ), data produced in the context of business simulations ( $N = 1$ ), or game shows ( $N = 2$ ); (ii) field experiments ( $N = 1$ ); (iii) quasi-experiment/matching designs ( $N = 3$ ); (iv) twin studies ( $N = 4$ ). Figure 3 reports the inter-temporal distribution of the retained studies.

## Coding Schema

## RESULTS

### Assessing the As-If Random Nature of the Treatment

This section focuses on the diagnostics that can be used to assess and argument the (as-if) random nature of the environmental variation at the center of the natural experiment. Specifically, this section surveys and articulates the following:

- diffusion/role of qualitative diagnostics to appreciate:
  - units' information about the treatment
  - units' incentives to self-select into the treatment (control) group
  - unit's capacity to self-select into the treatment (control) group
- diffusion/role of quantitative diagnostics (e.g., balance test) to compare and contrast treated and control units along relevant dimensions

Domain	Variable	Values of the Variable
Study features .....	Demographics	Authors; journal; year
	Level of theorizing	Between- or within-units design
Research design features .....	Level of the empirical model	Between- or within-units design
	Nature of the variation	Random; as-if random; not random
	Analytical strategy	DiD; mean-comparison; IV
	Natural experiment source	Open coding (e.g., CEO sudden death)
	Conceptual development level	Single-, multi-, or cross-level
Plausibility of as-if random .....	Role of information	False/True
	Role of incentives	False/True
	Individual capacity to self-select	False/True
Relevance of the intervention .....	Justification for the natural experiment	Methodological role; substantive role; both
	LATE interpretation	False/True
Credibility of statistical model .....	Statistical adjustment via covariates	False/True
	Statistical adjustment via matching	False/True
	Derivation of standard errors	Standard s.e.; clustered s.e.
	SUTVA considerations	False/True
Use of qualitative evidence .....	To sustain relevance of the intervention	False/True
	To sustain plausibility of as-if-random	False/True

Table 1: Coding schema.

### Assessing the Relevance of the Treatment

This section focuses on the empirical and substantive relevance of the environmental variation at the center of a natural experiment. Particularly, this section reviews and discusses the following:

- diffusion/role of qualitative diagnostics to show:
  - the empirical, substantive, and policy relevance of the natural experiment
  - the external validity (non-idiosyncrasy) of the natural experiment
  - exclusion of ‘bundling of treatments’ (i.e., environmental variations affecting the outcome through multiple causal pathways)
- diffusion/role of placebo tests supporting the magnitude of the average treatment estimation on the treated (ATT)
- diffusion/role of local average treatment estimation (LATE) considerations

### Assessing the Credibility of the Statistical Model

This section focuses on the credibility of the statistical model encapsulated in the natural experiment design. Specifically, this section surveys and articulates the following:

- diffusion/rationale of model based adjustments (instead of simple mean-comparison tests):
  - adjustment via control covariates

- adjustment via matching
- diffusion of SUTVA considerations and associated model adjustments (see the derivation of standard errors)

## GUIDELINES

This section wraps up around the literature review results and provides actionable guidelines to better leverage the natural experiment design. The preliminary analysis of the coded data <sup>4</sup> seem to indicate future natural experiments could:

- better integrate qualitative evidence and institutional knowledge in order to establish the as-if random nature of the treatment
- provide a more systematic discussion of the conditions under which a treatment can plausibly be considered as-if random (see the point on units' information, incentives, and capacity to self-select into the treatment group)
- pay equal attention to the empirical and substantive relevance of the treatment (that is, the possibility to reveal and/or detail important theoretical mechanisms by exploiting naturally-occurring events)
- provide a thorough assessment of the strengths and weaknesses of relying on a certain naturally-occurring event — i.e., explaining what the pros and cons are in terms of empirical identification (see LATE aspects) and theorizing opportunities
- use model-based adjustments (such as matching and control covariates) when there is no ground to establish the (as-if) random nature of the treatment. Indeed, the comparative advantage of natural experiments over alternative designs (e.g., quasi-experiments) also comes from the possibility to conduct causal inference by means of simple, transparent statical models. In other words, there should be good reasons to move from a design-based causal inference strategy to a model-based one (e.g., piggybacking on models that jointly use matching, DiD, and a long list of control covariates)
- consider the interactions among as-if random, relevance, and credibility elements. For example, the credibility of a model should be assessed against the nature of the treatment (random, as-if random, not random) and the process through which it is administered (see SUTVA)

<sup>4</sup> **TODO: We have already coded the 147 studies in the sample. Although further analyses are needed to reveal clear patterns, some interesting elements seem to emerge.**

## CODA

.

## REFERENCES

- Azoulay, Pierre, Joshua S. Graff Zivin, and Jialan Wang. "Superstar Extinction". In: *Quarterly Journal of Economics* May (2010), pp. 549–589. URL: <http://www.nber.org/papers/w14577>.
- Belloc, Marianna, Francesco Drago, and Roberto Galbiati. "Earthquakes, religion, and transition to selfgovernment in italian cities". In: *Quarterly Journal of Economics* 131.4 (2016), pp. 1875–1926. ISSN: 15314650. DOI: [10.1093/qje/qjw020](https://doi.org/10.1093/qje/qjw020).
- Dunning, Thad. "Improving causal inference: Strengths and limitations of natural experiments". In: *Political Research Quarterly* 61.2 (2008), pp. 282–293. ISSN: 10659129. DOI: [10.1177/1065912907306470](https://doi.org/10.1177/1065912907306470).
- *Natural Experiments in the Social Sciences*. Cambridge, UK: Cambridge University Press, 2012. ISBN: 9781139084444. DOI: [10.1017/CB09781139084444](https://doi.org/10.1017/CB09781139084444). arXiv: [arXiv: 1011.1669v3](https://arxiv.org/abs/1011.1669v3). URL: <http://ebooks.cambridge.org/ref/id/CB09781139084444>.
- Flammer, C. "Does corporate social responsibility lead to superior financial performance? A regression discontinuity approach". In: *Management Science* 61.11 (2015), pp. 2549–2568.
- Gonzalez-Mulé, Erik and Herman Aguinis. "Advancing theory by assessing boundary conditions with metaregression: A critical review and best-practice recommendations". In: *Journal of Management* 44.6 (2018), pp. 2246–2273.
- Hsu, David H. "Venture Capitalists and Cooperative Start-Up Commercialization Strategy". In: *Management Science* 52.2 (2006), pp. 2014–219.
- Makadok, Richard. *The four theories of profit and their joint effects*. Sept. 2011. DOI: [10.1177/0149206310385697](https://doi.org/10.1177/0149206310385697).
- Meyer, Bruce D. "Natural and quasi-experiments in economics". In: *Journal of Business and Economic Statistics* (1995). ISSN: 15372707. DOI: [10.1080/07350015.1995.10524589](https://doi.org/10.1080/07350015.1995.10524589).
- Powell, E. Erin and Ted Baker. "In the beginning: Identity processes and organizing in multi-founder nascent ventures". In: 60.6 (2017), pp. 2381–2414. ISSN: 00014273.
- Rindova, Violina P et al. "The good, the bad, and the ugly of organizational rankings: A multidisciplinary review of the literature and directions for future research". In: *Journal of Management* 44.6 (2018), pp. 2175–2208.
- Robinson, Gregory, John McNulty, and Jonathan S. Krasno. "Observing the Counterfactual? The Search for Political Experiments in Nature". In: *Political Analysis* 17.4 (2009), pp. 341–357. DOI: [10.1093/pan/mpp011](https://doi.org/10.1093/pan/mpp011).
- Rosenzweig, Mark R and Kenneth I Wolpin. "Natural "Natural Experiments" in Economics". In: *Journal of Economic Literature* (2000). ISSN: 0022-0515. DOI: [10.1257/jel.38.4.827](https://doi.org/10.1257/jel.38.4.827).
- Shaver, J Myles. "Causal identification through a cumulative body of research in the study of strategy and organizations". In: *Journal of Management* 46.7 (2020), pp. 1244–1256.
- Splawa-Neyman, Jerzy, Dorota M Dabrowska, and TP Speed. "On the application of probability theory to agricultural experiments. Essay on principles. Section 9." In: *Statistical Science* (1990), pp. 465–472.



Starr, Norton. "Nonrandom Risk: The 1970 Draft Lottery". In: *Journal of Statistics Education* 5.2 (1997), p. 1997. ISSN: 1069-1898. DOI: [10.1080/10691898.1997.11910534](https://doi.org/10.1080/10691898.1997.11910534).

## APPENDIX A — LITERATURE SEARCH

### Reproducibility of the literature search

On June 19, 2021, we retrieved the candidate studies for the review using the search tool available in each journal's website. This allowed us to look for the instances in which the 'natural experiment\*' token Table A1 reports the set of urls we visited. For the journals published by 'John Wiley & Sons' we were not allowed to compose our search query using the wild-car symbol '\*.' Therefore, to ensure the commensurability of results across journals, we run two separate queries, namely, 'natural experiment' and 'natural experiments.'

Journal	Address of the search page
Academy Of Management Journal .	<a href="https://journals.aom.org/search/advanced">https://journals.aom.org/search/advanced</a>
Administrative Science Quarterly...	<a href="https://journals.sagepub.com/search/advanced?SeriesKey=asqa">https://journals.sagepub.com/search/advanced?SeriesKey=asqa</a>
Entrepreneurship Theory & Practice	<a href="https://journals.sagepub.com/search/advanced?SeriesKey=etpb">https://journals.sagepub.com/search/advanced?SeriesKey=etpb</a>
Journal of Business Ethics .....	<a href="https://link.springer.com/search?query=&amp;search-within=Journal&amp;facet-journal-id=10551">https://link.springer.com/search?query=&amp;search-within=Journal&amp;facet-journal-id=10551</a>
Journal of Business Venturing.....	<a href="https://www.sciencedirect.com/journal/journal-of-business-venturing">https://www.sciencedirect.com/journal/journal-of-business-venturing</a>
Journal of Management.....	<a href="https://journals.sagepub.com/search/advanced?SeriesKey=joma">https://journals.sagepub.com/search/advanced?SeriesKey=joma</a>
Journal of Management Studies....	<a href="https://onlinelibrary.wiley.com/search/advanced?publication=14676486&amp;text1=">https://onlinelibrary.wiley.com/search/advanced?publication=14676486&amp;text1=</a>
Management Science.....	<a href="https://pubsonline.informs.org/action/doSearch?SeriesKey=mns">https://pubsonline.informs.org/action/doSearch?SeriesKey=mns</a>
Organization Science.....	<a href="https://pubsonline.informs.org/action/doSearch?SeriesKey=orsc">https://pubsonline.informs.org/action/doSearch?SeriesKey=orsc</a>
Organization Studies.....	<a href="https://journals.sagepub.com/search/advanced?SeriesKey=oss">https://journals.sagepub.com/search/advanced?SeriesKey=oss</a>
Research Policy .....	<a href="https://www.sciencedirect.com/journal/research-policy">https://www.sciencedirect.com/journal/research-policy</a>
Strategic Entrepreneurship Journal.	<a href="https://onlinelibrary.wiley.com/search/advanced?publication=1932443x&amp;text1=">https://onlinelibrary.wiley.com/search/advanced?publication=1932443x&amp;text1=</a>
Strategic Management Journal.....	<a href="https://onlinelibrary.wiley.com/search/advanced?publication=10970266&amp;text1=">https://onlinelibrary.wiley.com/search/advanced?publication=10970266&amp;text1=</a>
Strategic Organization .....	<a href="https://journals.sagepub.com/search/advanced?SeriesKey=soq">https://journals.sagepub.com/search/advanced?SeriesKey=soq</a>
The Leadership Quarterly.....	<a href="https://www.sciencedirect.com/journal/the-leadership-quarterly">https://www.sciencedirect.com/journal/the-leadership-quarterly</a>

Table A1: Sample of target journals along with search page addresses.

### Sampling

To consistently sample the studies for the review, two co-authors independently went through a random sample of twenty items and created a tentative set of exclusion categories. Then, the whole team of co-authors collectively evaluated the codes included in each set of exclusion categories, normalized the codes, and created the sampling workflow portrayed in Figure A4.

First, we removed non-empirical works, such as conceptual studies (e.g., Eden 2021), literature reviews (e.g., Shaver 2020), meta-analysis (e.g., Geyskens, Steenkamp, and Kumar 2006), calls for papers (e.g., Jacquart et al. 2020), or editorial notes (e.g., Breschi et al. 2020). With few exceptions (e.g., Sieweke and Santoni 2020), the NE design plays a peripheral role in this category's studies. Second, we removed qualitative empirical works that mirror the logic of a natural experiments (e.g., Powell and Baker 2017), a case study design that Eisenhardt

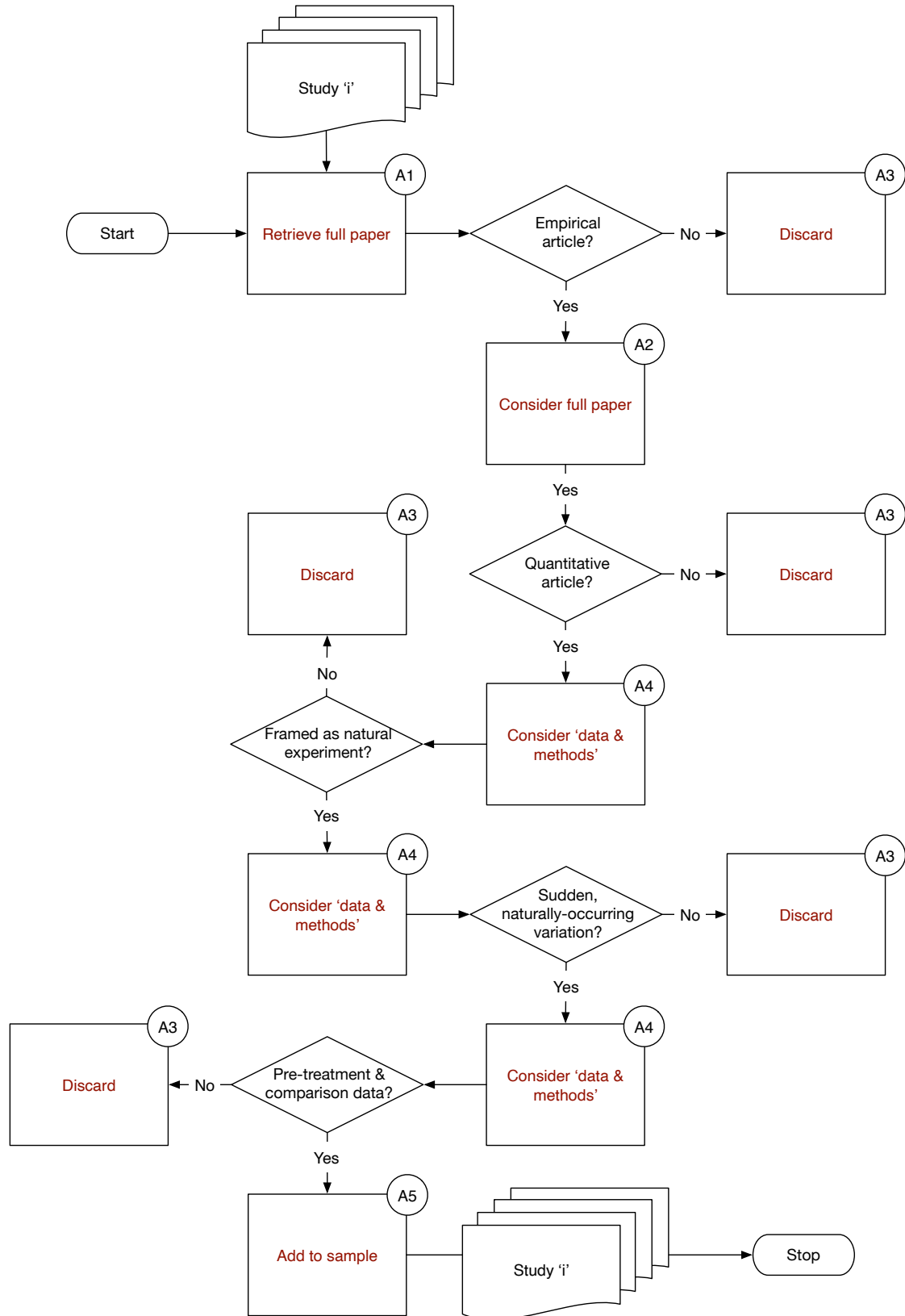


Figure A4: Sampling workflow

recently labeled “racing design” since “cases (often ventures) begin at the same time with similar initial conditions like founders, location, and funding, and then ‘race’ to some natural endpoint like IPO, unicorn valuation, or other temporal marker.” (page 150, Eisenhardt 2021). Third, we removed empirical works that limit to refer to previous natural experiment studies (e.g., Stevens and Newenham-Kahindi 2021), discuss a project’s limitations in regard to the lack of a natural experiment (e.g., Chen, Chittoor, and Vissa 2020), or indicate natural experiments as a future research avenues (e.g., Xie, Shen, and Zajac n.d.). Fourth, we removed empirical works that claim to use a natural experiment whereas they do not exploit any sudden naturally occurring, sudden variations in the data. Such a category includes studies that — in fact — use field experiments (e.g., Lee and Tang 2018), quasi-experiments (e.g., Azoulay, Stuart, and Wang 2014), laboratory/online experiments (e.g., Laureiro-Martinez 2014), twin research design (nicolau2008), or correlational research designs (e.g., Boyle and Shapira 2011). Fifth, we removed empirical works that exploit a naturally occurring variation to operate the instrumental variable (e.g., Zolotoy et al. 2018) or the regression discontinuity research design (e.g., Flammer 2015). Finally, we removed empirical works that exploit a sudden, naturally-occurring variation but lack either a comparison group (e.g. Corbo, Ferriani, and Corrado 2016) or pre-treatment data (e.g., DesJardine, Bansal, and Yang 2019).

A5.

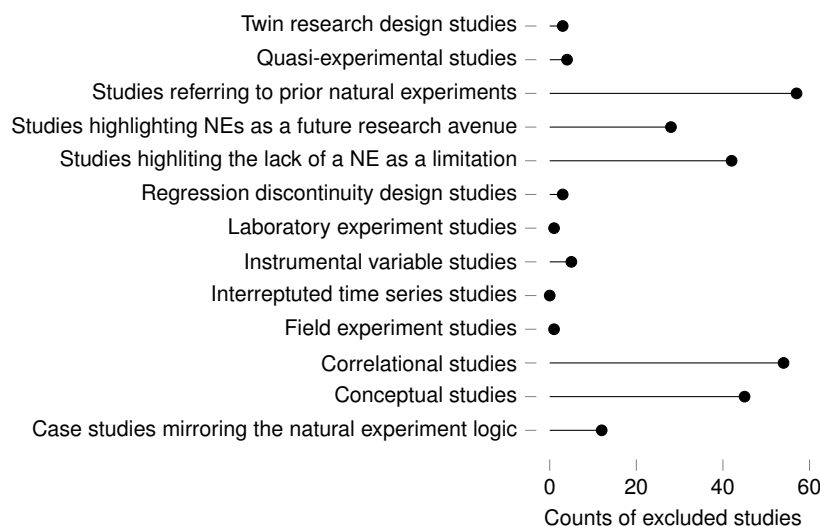


Figure A5: Exclusion categories. The reported codes are note mutually exclusive — for example, a study can both refer to a previous natural experiment and mention the lack of a natural experiment as a project’s limitation.

## References

Azoulay, Pierre, Toby Stuart, and Yanbo Wang. “Matthew: Effect or Fable?” In: *Management Science* 60.1 (2014), pp. 92–109.

- Boyle, Elizabeth and Zur Shapira. "The Liability of Leading: Battling Aspiration and Survival Goals in the Jeopardy! Tournament of Champions". In: *Organization Science* 23.4 (2011), pp. 1100–1113.
- Breschi, Stefano et al. "STEM migration, research, and innovation". In: *Research Policy* 49.9 (2020), p. 104070.
- Chen, Guoli, Raveendra Chittoor, and Balagopal Vissa. "Does Nepotism Run in the Family? CEO Pay and Pay-Performance Sensitivity in Indian Family Firms". In: *Strategic Management Journal* (2020).
- Corbo, Leonardo, Simone Ferriani, and Raffaele Corrado. "A New Order of Things: Network Mechanisms of Field Evolution in the Aftermath of an Exogenous Shock". In: *Organisation Studies* 37.3 (2016), pp. 323–348.
- DesJardine, Mark, Pratima Bansal, and Yang Yang. "Bouncing Back: Building Resilience Through Social and Environmental Practices in the Context of the 2008 Global Financial Crisis". In: *Journal of Management* 45.4 (2019), pp. 1434–1460.
- Eden, Dov. "The science of leadership: A journey from survey research to field experimentation". In: *Leadership Quarterly* 32.3 (2021), p. 101472. ISSN: 10489843.
- Eisenhardt, Kathleen M. "What is the Eisenhardt Method, really?" In: *Strategic Organization* 19.1 (2021), pp. 147–160.
- Flammer, Caroline. "Does Corporate Social Responsibility Lead to Superior Financial Performance? A Regression Discontinuity Approach". In: *Management Science* 61.11 (2015), pp. 2549–2568.
- Geyskens, Ingen, J B E M Steenkamp, and Nirmalya Kumar. "Make, Buy, or Ally: A Transaction Cost Theory Meta-Analysis". In: *Academy of Management Journal* 49.3 (2006), pp. 519–543. DOI: [DOI: 10.1002/smj.3263](https://doi.org/10.1002/smj.3263).
- Jacquart, Philippe et al. "Call for Paper: Special Issue on Harnessing Exogenous Shocks for Leadership and Management Research". In: *Leadership Quarterly* 31.5 (2020), p. 101464. ISSN: 10489843.
- Laureiro-Martinez, Daniella. "Cognitive control capabilities, routinization propensity, and decision-making performance". In: *Organization Science* 25.4 (2014), pp. 1111–1133.
- Lee, Hau L. and Christopher S. Tang. "Socially and environmentally responsible value chain innovations: New operations management research opportunities". In: *Management Science* 64.3 (2018), pp. 983–996.
- Powell, E. Erin and Ted Baker. "In the beginning: Identity processes and organizing in multi-founder nascent ventures". In: *Academy of Management Journal* 60.6 (2017), pp. 2381–2414.
- Shaver, J. Myles. "Causal Identification Through a Cumulative Body of Research in the Study of Strategy and Organizations". In: *Journal of Management* 46.7 (2020), pp. 1244–1256.
- Sieweke, Jost and Simone Santoni. "Natural experiments in leadership research: An introduction, review, and guidelines". In: *Leadership Quarterly* 31.1 (2020), p. 101338. ISSN: 10489843.
- Stevens, Charles E. and Aloysius Newenham-Kahindi. In: *Strategic Management Journal* 42.2 (2021), pp. 273–301.
- Xie, Xuanli, Wei Shen, and Edward J. Zajac. "When Is a Governmental Mandate not a Mandate? Predicting Organizational Compliance

Under Semicoercive Conditions". In: *Journal of Management* (). DOI: [10.1177/0149206320948579](https://doi.org/10.1177/0149206320948579).

Zolotoy, Leon et al. "The Role of Affect in Shaping the Behavioral Consequences of CEO Option Incentives". In: *Journal of Management* (2018), p. 014920631877117.

## APPENDIX B — SAMPLE OF STUDIES

### References

- Agarwal, Sumit, Jessica Pan, and Wenlan Qian. "Age of Decision: Pension Savings Withdrawal and Consumption and Debt Response". In: *Management Science* In press a (2019).
- Aggarwal, Vikas A. and Brian Wu. "Organizational Constraints to Adaptation: Intrafirm Asymmetry in the Locus of Coordination". In: *Organization Science* 26.1 (2014), pp. 218–238.
- Albring, Susan et al. "Does The Firm Information Environment Influence Financing Decisions? A Test Using Disclosure Regulation". In: *Management Science* 62.2 (2016), pp. 456–478.
- Albuquerque, Ana M. and Julie Zhu. "Has Section 404 of the Sarbanes-Oxley Act Discouraged Corporate Investment? New Evidence from a Natural Experiment". In: *Management Science* In-press a (2019).
- Andersen, Steffen and Kasper Meisner Nielsen. "Fire Sales and House Prices: Evidence from Estate Sales Due to Sudden Death". In: *Management Science* 63.1 (2016), pp. 201–212.
- Apesteguia, Jose and Ignacio Isabel Palacios-Huerta. "Psychological Pressure in Competitive Environments: Evidence from a Randomized Natural Experiment". In: *Management Science* 58.8 (2012), pp. 1585–1591.
- Arts, Sam and Lee Fleming. "Paradise of Novelty—Or Loss of Human Capital? Exploring New Fields and Inventive Output". In: *Organization Science* 29.6 (2018), pp. 1074–1092.
- Balachandran, Sudhakar V. "How Does Residual Income Affect Investment? The Role of Prior Performance Measures". In: *Management Science* 52.3 (2006), pp. 383–394.
- Baptista, Rui, Francisco Lima, and Joana Mendonça. "Establishment of higher education institutions and new firm entry". In: *Research Policy* 40.5 (2011), pp. 751–760.
- Barroso, Alicia, Marco S. Giarratana, and Martina Pasquini. "Product portfolio performance in new foreign markets: The EU trademark dual system". In: *Research Policy* 48.1 (2019), pp. 11–21.
- Behr, Patrick, Darren J. Kisgen, and Jérôme Taillard. "Did Government Regulations Lead to Inflated Credit Ratings?" In: *Management Science* 64.3 (2018), pp. 1034–1054.
- Bhojraj, Sanjeev, Partha Sengupta, and Suning Zhang. "Restructuring Charges, FAS 146, and the Accrual Anomaly". In: *Management Science* 63.11 (2017), pp. 3654–3671.
- Bodt, Eric de, Jean-Gabriel Cousin, and Richard Roll. "Full-Stock-Payment Marginalization in Merger and Acquisition Transactions". In: *Management Science* 64.2 (2017), pp. 760–783.

- Bowers, Anne H. et al. "Competitive parity, status disparity, and mutual forbearance: Securities analysts' competition for investor attention". In: *Academy of Management Journal* 57.1 (2014), pp. 38–62.
- Branzei, Oana et al. "What Good Does Doing Good do? The Effect of Bond Rating Analysts' Corporate Bias on Investor Reactions to Changes in Social Responsibility". In: *Journal of Business Ethics* 148.1 (2018), pp. 183–203.
- Briscoe, Forrest and Wenpin Tsai. "Overcoming Relational Inertia: How Organizational Members Respond to Acquisition Events in a Law Firm". In: *Administrative Science Quarterly* 56.3 (2011), pp. 408–440.
- Brown, Jill A. et al. "Do Investors Care About Director Tenure? Insights from Executive Cognition and Social Capital Theories". In: *Organization Science* 28.3 (2017), pp. 471–494.
- Cahan, Steven F., Chen Chen, and Li Chen. "Social Norms and CSR Performance". In: *Journal of Business Ethics* 145.3 (2017), pp. 493–508.
- Cai, Jay and Guifeng Shi. "Do Religious Norms Influence Corporate Debt Financing?" In: *Journal of Business Ethics* 157.1 (2019), pp. 159–182.
- Callen, Jeffrey L. and Xiaohua Fang. "Local Gambling Norms and Audit Pricing". In: *Journal of Business Ethics* (2018), pp. 1–23.
- Cen, Ling, Sudipto Dasgupta, and Rik Sen. "Discipline or Disruption? Stakeholder Relationships and the Effect of Takeover Threat". In: *Management Science* 62.10 (2016), pp. 2820–2841.
- Chakraborty, Pavel and Chirantan Chatterjee. "Does environmental regulation indirectly induce upstream innovation? New evidence from India". In: *Research Policy* 46.5 (2017), pp. 939–955.
- Chakravarti, Arjun, Tanya Menon, and Christopher Winship. "Contact and Group Structure: A Natural Experiment of Interracial College Roommate Groups". In: *Organization Science* 25.4 (2014), pp. 1216–1233.
- Chemmanur, Thomas J., Tyler J. Hull, and Karthik Krishnan. "Do local and international venture capitalists play well together? The complementarity of local and international venture capitalists". In: *Journal of Business Venturing* 31.5 (2016), pp. 573–594.
- Chen, Hailiang, Yu Jeffrey Hu, and Michael D. Smith. "The Impact of Ebook Distribution on Print Sales: Analysis of a Natural Experiment". In: *Management Science* 65.1 (2019), pp. 19–31.
- Chen, Jiandong et al. "CEO Accountability for Corporate Fraud: Evidence from the Split Share Structure Reform in China". In: *Journal of Business Ethics* 138.4 (2016), pp. 787–806.
- Chen, Pei-Yu, Yili Hong, and Ying Liu. "The Value of Multidimensional Rating Systems: Evidence from a Natural Experiment and Randomized Experiments". In: *Management Science* 64.10 (2017), pp. 4629–4647.
- Chhaochharia, Vidhi et al. "Product Market Competition and Internal Governance: Evidence from the Sarbanes Oxley Act". In: *Management Science* 63.5 (2017), pp. 1405–1424.

- Cho, Theresa S. and Donald C. Hambrick. "Attention as the Mediator Between Top Management Team Characteristics and Strategic Change: The Case of Airline Deregulation". In: *Organization Science* 17.4 (2006), pp. 453–469.
- Clougherty, Joseph A. et al. "The Foundations of International Business: Cross-Border Investment Activity and the Balance between Market-Power and Efficiency Effects". In: *Journal of Management Studies* 54.3 (2017), pp. 340–365.
- Colombo, Massimo G., Michele Meoli, and Silvio Vismara. "Signaling in science-based IPOs: The combined effect of affiliation with prestigious universities, underwriters, and venture capitalists". In: *Journal of Business Venturing* 34.1 (2019), pp. 141–177.
- Conti, Raffaele, Alfonso Gambardella, and Elena Novelli. "Specializing in Generality: Firm Strategies When Intermediate Markets Work". In: *Organization Science* 30.1 (2019), pp. 126–150.
- Converse, Benjamin A. and Patrick J. Dennis. "The role of "Prominent Numbers" in open numerical judgment: Strained decision makers choose from a limited set of accessible numbers". In: *Organizational Behavior and Human Decision Processes* 147 (2018), pp. 94–107.
- Corbo, Leonardo, Simone Ferriani, and Raffaele Corrado. "A New Order of Things: Network Mechanisms of Field Evolution in the Aftermath of an Exogenous Shock". In: *Organisation Studies* 37.3 (2016), pp. 323–348.
- Cozarenco, Anastasia and Ariane Szafarz. "Gender Biases in Bank Lending: Lessons from Microcredit in France". In: *Journal of Business Ethics* 147.3 (2018), pp. 631–650.
- Crane, Alan D. and Andrew Koch. "Shareholder Litigation and Ownership Structure: Evidence from a Natural Experiment". In: *Management Science* 64.1 (2014), pp. 5–23.
- Criscuolo, Paola, Ammon Salter, and Anne L.J. ter Wal. "Going Underground: Bootlegging and Individual Innovation Performance". In: *Organization Science* 2012.1 (2018), p. 12234.
- Crosby, Neil et al. "Can Institutional Investors Bias Real Estate Portfolio Appraisals? Evidence from the Market Downturn". In: *Journal of Business Ethics* 147.3 (2018), pp. 651–667.
- Cumming, Douglas and Sofia Johan. "The Differential impact of the internet on spurring regional entrepreneurship". In: *Entrepreneurship: Theory and Practice* 34.5 (2010), pp. 857–883.
- Danaher, Brett et al. "An Empirical Analysis of Digital Music Bundling Strategies". In: *Management Science* 60.6 (2014), pp. 1413–1433.
- Danis, Andras. "Do Empty Creditors Matter? Evidence from Distressed Exchange Offers". In: *Management Science* 63.5 (2017), pp. 1281–1301.
- Darrough, Masako, Heedong Kim, and Emanuel Zur. "The Impact of Corporate Welfare Policy on Firm-Level Productivity: Evidence from Unemployment Insurance". In: *Journal of Business Ethics* (2018), pp. 1–21.
- Davidsson, Per and Scott R. Gordon. "Much Ado About Nothing? The Surprising Persistence of Nascent Entrepreneurs Through Macroeconomic Crisis". In: *Entrepreneurship: Theory and Practice* 40.4 (2016), pp. 915–941.

- DesJardine, Mark, Pratima Bansal, and Yang Yang. "Bouncing Back: Building Resilience Through Social and Environmental Practices in the Context of the 2008 Global Financial Crisis". In: *Journal of Management* 45.4 (2019), pp. 1434–1460.
- Dong, Jing, Elad Yom-Tov, and Galit B. Yom-Tov. "The Impact of Delay Announcements on Hospital Network Coordination and Waiting Times". In: *Management Science* (2018).
- Du, Xingqiang et al. "Do Lenders Applaud Corporate Environmental Performance? Evidence from Chinese Private-Owned Firms". In: *Journal of Business Ethics* 143.1 (2017), pp. 179–207.
- Eberhart, Robert, Charles E. Eesley, and Kathleen M. Eisenhardt. "Failure Is an Option: Institutional Change, Entrepreneurial Risk and New Firm Growth". In: *Organization Science* 28.1 (2017), pp. 93–112.
- Eesley, Charles E., Jian Bai Li, and Delin Yang. "Does Institutional Change in Universities Influence High-Tech Entrepreneurship? Evidence from China's Project 985". In: *Organization Science* 27.2 (2016), pp. 446–461.
- Ejeremo, Olof and Torben Schubert. "Do Higher Wages Reduce Knowledge Worker's Job Mobility? Evidence for Swedish Inventors". In: *Journal of Management Studies* 55.1 (2018), pp. 108–145.
- Fabrizio, Kira R. and Olga Hawn. "Enabling diffusion: How complementary inputs moderate the response to environmental policy". In: *Research Policy* 42.5 (2013), pp. 1099–1111.
- Flammer, Caroline and Aleksandra Kacperczyk. "The Impact of Stakeholder Orientation on Innovation: Evidence from a Natural Experiment". In: *Management Science* 62.7 (2016), pp. 1982–2001.
- Forman, Chris, Anindya Ghose, and Avi Goldfarb. "Competition between Local and Electronic Markets: How the Benefit of Buying Online Depends on Where You Live". In: *Management Science* 55.1 (2009), pp. 47–57.
- Fosfuri, Andrea and Marco S. Giarratana. "Masters of War: Rivals' Product Innovation and New Advertising in Mature Product Markets". In: *Management Science* 55.2 (2008), pp. 181–191.
- Fu, Yuming, Wenlan Qian, and Bernard Yin Yeung. "Speculative Investors and Transactions Tax: Evidence from the Housing Market". In: *Management Science* 62.11 (2016), pp. 3254–3270.
- Gil, Ricard and Christian A. Ruzzier. "The Impact of Competition on "Make-or-Buy" Decisions: Evidence from the Spanish Local TV Industry". In: *Management Science* 64.3 (2017), pp. 1121–1135.
- Gilje, Erik. "Does Local Access to Finance Matter?: Evidence from U.S. Oil and Natural Gas Shale Booms". In: *Management Science* 65.1 (2019), pp. 1–18.
- Girotra, Karan, Christian Terwiesch, and Karl T. Ulrich. "Valuing RD Projects in a Portfolio: Evidence from the Pharmaceutical Industry". In: *Management Science* 53.9 (2007), pp. 1452–1466.
- Goh, Khim Yong, Kai-Lung Hui, and Ivan P. L. Png. "Privacy and Marketing Externalities: Evidence from Do Not Call". In: *Management Science* 61.12 (2015), pp. 2982–3000.



- Goldfarb, Avi and Catherine E. Tucker. "Search Engine Advertising: Channel Substitution when Pricing Ads to Context". In: *Management Science* 57.3 (2011), pp. 458–470.
- "Standardization and the Effectiveness of Online Advertising". In: *Management Science* 61.11 (2015), pp. 2707–2719.
- Greenwood, Brad N. and Ritu Agarwal. "Matching Platforms and HIV Incidence: An Empirical Investigation of Race, Gender, and Socioeconomic Status". In: *Management Science* 62.8 (2015), pp. 2281–2303.
- Haack, Patrick and Jost Sieweke. "The Legitimacy of Inequality: Integrating the Perspectives of System Justification and Social Judgment". In: *Journal of Management Studies* 55.3 (2018), pp. 486–516.
- Hann, Il-Horn and Christian Terwiesch. "Measuring the Frictional Costs of Online Transactions: The Case of a Name-Your-Own-Price Channel". In: *Management Science* 49.11 (2003), pp. 1563–1579.
- Hasan, Sharique and Surendrakumar Bagde. "Peers and Network Growth: Evidence from a Natural Experiment". In: *Management Science* 61.10 (2015), pp. 2536–2547.
- He, Xianjie, Jeffrey Pittman, and Oliver Rui. "Reputational Implications for Partners After a Major Audit Failure: Evidence from China". In: *Journal of Business Ethics* 138.4 (2016), pp. 703–722.
- Hermosilla, Manuel and Yufei Wu. "Market size and innovation: The intermediary role of technology licensing". In: *Research Policy* 47.5 (2018), pp. 980–991.
- Hitt, Michael A. et al. "The Institutional Effects on Strategic Alliance Partner Selection in Transition Economies: China vs. Russia". In: *Organization Science* 15.2 (2004), pp. 173–185.
- Holderness, Clifford G. and Jeffrey Pontiff. "Hierarchies and the Survival of Prisoners of War During World War II". In: *Management Science* 58.10 (2012), pp. 1873–1886.
- Hoskisson, Robert E, Brent D Beal, and William P Wan. "Explaining the Clustering of International Expansion Moves : A Critical Test in the U.S. Telecommunications Industry". In: *Academy of Management Journal* 48.2 (2005), pp. 297–319.
- Howell, Sabrina T. "Joint ventures and technology adoption: A Chinese industrial policy that backfired". In: *Research Policy* 47.8 (2018), pp. 1448–1462.
- Hwang, Chuan-Yang and Yuan Li. "Analysts' Reputational Concerns, Self-Censoring and the International Dispersion Effect". In: *Management Science* 64.5 (2018), pp. 2289–2307.
- Islam, Mazhar, Jacob Miller, and Haemin Dennis Park. "But what will it cost me? How do private costs of participation affect open source software projects?" In: *Research Policy* 46.6 (2017), pp. 1062–1070.
- Iverson, Benjamin Charles. "Get in Line: Chapter 11 Restructuring in Crowded Bankruptcy Courts". In: *Management Science* 64.11 (2018), pp. 5370–5394.
- Jackson, Scott. "Mulling over Massachusetts: Health insurance mandates and entrepreneurs". In: *Entrepreneurship: Theory and Practice* 34.5 (2010), pp. 909–931.

- Jensen, Michael and Aradhana Roy. "Staging exchange partner choices: When do status and reputation matter?" In: *Academy of Management Journal* 51.3 (2008), pp. 495–516.
- Jia, Ming and Zhe Zhang. "News Visibility and Corporate Philanthropic Response: Evidence from Privately Owned Chinese Firms Following the Wenchuan Earthquake". In: *Journal of Business Ethics* 129.1 (2015), pp. 93–114.
- Jia, Nan, Kenneth G. Huang, and Cyndi Man Zhang. *Public governance, corporate governance, and firm innovation: An examination of state-owned enterprises*. 2019.
- John, Kose, Yuanzhi Li, and Jiaren Pang. "Does Corporate Governance Matter More for High Financial Slack Firms?" In: *Management Science* 63.6 (2016), pp. 1872–1891.
- Jung, Hyun Ju and Jeongsik Jay Lee. "The impacts of science and technology policy interventions on university research: Evidence from the U.S. National Nanotechnology Initiative". In: *Research Policy* 43.1 (2014), pp. 74–91.
- Kacperczyk, Aleksandra J. "Opportunity structures in established firms: Entrepreneurship versus intrapreneurship in mutual funds". In: *Administrative Science Quarterly* 57.3 (2012), pp. 484–521.
- Kacperczyk, Aleksandra, Christine M. Beckman, and Thomas P. Moliterno. "Disentangling Risk and Change: Internal and External Social Comparison in the Mutual Fund Industry". In: *Administrative Science Quarterly* 60.2 (2015), pp. 228–262.
- Kalcheva, Ivalina, Ping McLemore, and Shagun Pant. "Innovation: The interplay between demand-side shock and supply-side environment". In: *Research Policy* 47.2 (2018), pp. 440–461.
- Kalnins, Arturs, Anand Swaminathan, and Will Mitchell. "Turnover Events, Vicarious Information, and the Reduced Likelihood of Outlet-Level Exit Among Small Multiunit Organizations". In: *Organization Science* 17.1 (2006), pp. 118–131.
- Kapoor, Mudit and Shamika Ravi. "Elasticity of Intertemporal Substitution in Consumption: Empirical Evidence from a Natural Experiment". In: *Management Science* 63.12 (2017), pp. 4188–4200.
- Kaustia, Markku, Samuli Knüpfer, and Sami Torstila. "Stock Ownership and Political Behavior: Evidence from Demutualizations". In: *Management Science* 62.4 (2016), pp. 945–963.
- Kerr, Jon, Gil Sadka, and Ronnie Sadka. "Illiquidity and Price Informativeness". In: *Management Science* (2019).
- Khan, Urooj and Alvis K. Lo. "Bank Lending Standards and Borrower Accounting Conservatism". In: *Management Science* In press a (2018).
- Kim, Incheol et al. "Institutional Investors and Corporate Environmental, Social, and Governance Policies: Evidence from Toxics Release Data". In: *Management Science* In press a (2019).
- Kleinbaum, Adam M. "Reorganization and Tie Decay Choices". In: *Management Science* 64.5 (2018), pp. 2219–2237.
- Knittel, Christopher R. and Victor Stango. "Celebrity Endorsements, Firm Value, and Reputation Risk: Evidence from the Tiger Woods Scandal". In: *Management Science* 60.1 (2014), pp. 21–37.

- Knott, Anne Marie. "The Dynamic Value of Hierarchy". In: *Management Science* 47.3 (2003), pp. 430–448.
- Kruger, Mark and Yvonne Seng. "Leadership with inner meaning: A contingency theory of leadership based on the worldviews of five religions". In: *Leadership Quarterly* 16.5 (2005), pp. 771–806.
- Kuilman, Jeroen and Jiatao Li. "The Organizers' Ecology: An Empirical Study of Foreign Banks in Shanghai". In: *Organization Science* 17.3 (2006), pp. 385–401.
- Lee, Sunkee. "Learning-by-Moving: Can Reconfiguring Spatial Proximity Between Organizational Members Promote Individual-level Exploration?" In: *Organization Science* (2019), orsc.2019.1291.
- Leung, Ming D. and Amanda J. Sharkey. "Out of Sight, Out of Mind? Evidence of Perceptual Factors in the Multiple-Category Discount". In: *Organization Science* 25.1 (2014), pp. 171–184.
- Li, Kai, Jiaping Qiu, and Jin Wang. "Technology Conglomeration, Strategic Alliances, and Corporate Innovation". In: *Management Science* In press a (2019).
- Li, Si and Xintong Zhan. "Product Market Threats and Stock Crash Risk". In: *Management Science* In press a (2018).
- Li, Xu, Chen Lin, and Xintong Zhan. "Does Change in the Information Environment Affect Financing Choices?" In: *Management Science* (2018).
- Lilien, Gary L. et al. "Performance Assessment of the Lead User Idea-Generation Process for New Product Development". In: *Management Science* 48.8 (2002), pp. 1042–1059.
- Lin, Mingfeng and Siva Viswanathan. "Home Bias in Online Investments: An Empirical Study of an Online Crowdfunding Market". In: *Management Science* 62.5 (2016), pp. 1393–1414.
- Lu, Susan Feng and Lauren Xiaoyuan Lu. "Do Mandatory Overtime Laws Improve Quality? Staffing Decisions and Operational Flexibility of Nursing Homes". In: *Management Science* 63.11 (2017), pp. 3566–3585.
- MacCormack, Alan, John Rusnak, and Carliss Y. Baldwin. "Exploring the Structure of Complex Software Designs: An Empirical Study of Open Source and Proprietary Code". In: *Management Science* 52.7 (2006), pp. 1015–1030.
- Marx, Matt, Jasjit Singh, and Lee Fleming. "Regional disadvantage? Employee non-compete agreements and brain drain". In: *Research Policy* 44.2 (2015), pp. 394–404.
- Marx, Matt, Deborah Strumsky, and Lee Fleming. "Mobility, Skills, and the Michigan Non-Compete Experiment". In: *Management Science* 55.6 (2009), pp. 875–889.
- McGowan, Danny and Chrysovalantis Vasilakis. "Reap what you sow: Agricultural technology, urbanization and structural change". In: *Research Policy* (2019).
- Menon, Tanya and Katherine W. Phillips. "Getting Even or Being at Odds? Cohesion in Even- and Odd-Sized Small Groups". In: *Organization Science* 22.3 (2011), pp. 738–753.
- Min, Byung S. "Effects of Outsider's Monitoring on Capital Structure and Corporate Growth Strategy: Evidence from a Natural Experiment". In: *Journal of Business Ethics* 152.2 (2018), pp. 459–475.

- Mithas, Sunil and Henry C. Lucas. "Are Foreign IT Workers Cheaper? U.S. Visa Policies and Compensation of Information Technology Professionals". In: *Management Science* 56.5 (2010), pp. 745–765.
- Montizaan, Raymond Michel et al. "The Impact of Negatively Reciprocal Inclinations on Worker Behavior: Evidence from a Retrenchment of Pension Rights". In: *Management Science* 62.3 (2016), pp. 668–681.
- Nagaraj, Abhishek. "Does Copyright Affect Reuse? Evidence from Google Books and Wikipedia". In: *Management Science* 64.7 (2017), pp. 3091–3107.
- Natividad, Gabriel and Evan Rawley. "Interdependence and Performance: A Natural Experiment in Firm Scope". In: *Strategy Science* 1.1 (2016), pp. 12–31.
- Oettl, Alexander. "Reconceptualizing Stars: Scientist Helpfulness and Peer Performance". In: *Management Science* 58.6 (2012), pp. 1122–1140.
- Park, Hyunwoo, Jeongsik Lee, and Byung Cheol Kim. "Project selection in NIH: A natural experiment from ARRA". In: *Research Policy* 44.6 (2015), pp. 1145–1159.
- Parker, Chris, Kamalini Ramdas, and Nicos Savva. "Is IT Enough? Evidence from a Natural Experiment in India's Agriculture Markets". In: *Management Science* 16.9 (2016), pp. 2481–2503.
- Pertuze Salas, Julio et al. "Political uncertainty and innovation: The relative effects of national leaders' education levels and regime systems on firm-level patent applications". In: *Research Policy* 48.9 (2019), p. 103808.
- Pope, Devin G., Joseph Price, and Justin Wolfers. "Awareness Reduces Racial Bias". In: *Management Science* 64.11 (2018), pp. 4988–4995.
- Rao Sahib, Padma. "Status, Peer Influence, and Racio-ethnic Diversity in Times of Institutional Change: An Examination from European Labour Law". In: *Journal of Business Ethics* 126.2 (2015), pp. 205–218.
- Rao, Hayagreeva and Henrich R. Greve. "Disasters and community resilience: Spanish flu and the formation of retail cooperatives in Norway". In: *Academy of Management Journal* 61.1 (2018), pp. 5–25.
- Rawley, Evan and Timothy Simcoe. "Information Technology, Productivity and Asset Ownership: Evidence from Taxicab Fleets". In: *Organization Science* 24.3 (2013), pp. 831–845.
- Rubineau, Brian and Yoon Kang. "Bias in White: A Longitudinal Natural Experiment Measuring Changes in Discrimination". In: *Management Science* 58.4 (2011), pp. 660–677.
- Saito, Yoko et al. "Quality-oriented technical change in Japanese wheat breeding". In: *Research Policy* 38.8 (2009), pp. 1365–1375.
- Seenivasan, Satheesh, K. Sudhir, and Debabrata Talukdar. "Do Store Brands Aid Store Loyalty?" In: *Management Science* 62.3 (2015), pp. 802–816.
- Shi, Wei, Brian L. Connelly, and Kubilay Cirik. *Short seller influence on firm growth: A threat rigidity perspective*. 2018.

- Siegel, Jordan I. and Barbara Zepp Larson. "Labor Market Institutions and Global Strategic Adaptation: Evidence from Lincoln Electric". In: *Management Science* 55.9 (2009), pp. 1527–1546.
- Simcoe, Timothy S. and Dave M. Waguespack. "Status, Quality, and Attention: What's in a (Missing) Name?" In: *Management Science* 57.2 (2010), pp. 274–290.
- Sine, Wesley D. and Brandon H. Lee. "Tilting at Windmills? The Environmental Movement and the Emergence of the U.S. Wind Energy Sector". In: *Administrative Science Quarterly* 54.1 (2009), pp. 123–155.
- Sismeiro, Catarina and Ammara Mahmood. "Competitive vs. Complementary Effects in Online Social Networks and News Consumption: A Natural Experiment". In: *Management Science* 64.11 (2018), pp. 5014–5037.
- Stoker, Janka I., Harry Garretsen, and Dimitrios Soudis. "Tightening the leash after a threat: A multi-level event study on leadership behavior following the financial crisis". In: *Leadership Quarterly* 30.2 (2019), pp. 199–214.
- Tan, Justin. "Phase transitions and emergence of entrepreneurship: The transformation of Chinese SOEs over time". In: *Journal of Business Venturing* 22.1 (2007), pp. 77–96.
- Tan, Tom Fangyun and Serguei Netessine. "When Does the Devil Make Work? An Empirical Study of the Impact of Workload on Worker Productivity". In: *Management Science* 60.6 (2014), pp. 1574–1593.
- Teodoridis, Florenta. "Understanding Team Knowledge Production: The Interrelated Roles of Technology and Expertise". In: *Management Science* 64.8 (2019), pp. 3625–3648.
- Teodoridis, Florenta, Michaël Bikard, and Keyvan Vakili. "Creativity at the Knowledge Frontier: The Impact of Specialization in Fast- and Slow-paced Domains\*". In: *Administrative Science Quarterly* (2018).
- Tucker, Catherine E. "Identifying Formal and Informal Influence in Technology Adoption with Network Externalities". In: *Management Science* 54.12 (2008), pp. 2024–2038.
- Vasudeva, Gurneeta. "Weaving Together the Normative and Regulatory Roles of Government: How the Norwegian Sovereign Wealth Fund's Responsible Conduct Is Shaping Firms' Cross-Border Investments". In: *Organization Science* 24.6 (2013), pp. 1662–1682.
- Wang, Fangjun et al. "Loan Guarantees, Corporate Social Responsibility Disclosure and Audit Fees: Evidence from China". In: *Journal of Business Ethics* (2019), pp. 1–17.
- Wang, Jingqi and Yong-Pin Zhou. "Impact of Queue Configuration on Service Time: Evidence from a Supermarket". In: *Management Science* 64.7 (2017), pp. 3055–3075.
- Wang, Jue. "Innovation and government intervention: A comparison of Singapore and Hong Kong". In: *Research Policy* 47.2 (2018), pp. 399–412.
- Wang, Maobin, Chun Qiu, and Dongmin Kong. "Corporate Social Responsibility, Investor Behaviors, and Stock Market Returns: Evi-

- dence from a Natural Experiment in China". In: *Journal of Business Ethics* 101.1 (2011), pp. 127–141.
- Wang, Xue, Feng Cao, and Kangtao Ye. "Mandatory Corporate Social Responsibility (CSR) Reporting and Financial Reporting Quality: Evidence from a Quasi-Natural Experiment". In: *Journal of Business Ethics* 152.1 (2018), pp. 253–274.
- Wang, Zhongmin, Alvin Lee, and Michael Polonsky. "Egregiousness and Boycott Intensity: Evidence from the BP Deepwater Horizon Oil Spill ". In: *Management Science* 64.1 (2016), pp. 149–163.
- Wei, Zaiyan and Mingfeng Lin. "Market Mechanisms in Online Peer-to-Peer Lending". In: *Management Science* 63.12 (2013), pp. 4263–4257.
- West, Tim, Sue Ravenscroft, and Charles Shrader. "Cheating and Moral Judgment in the College Classroom: A Natural Experiment". In: *Journal of Business Ethics* 54.2 (2004), pp. 173–183.
- Wyrwich, Michael. "Can socioeconomic heritage produce a lost generation with regard to entrepreneurship?" In: *Journal of Business Venturing* 28.5 (2013), pp. 667–682.
- Xu, Kaiquan et al. "Battle of the Channels: The Impact of Tablets on Digital Commerce". In: *Management Science* 63.5 (2016), pp. 1469–1492.
- Yiu, Daphne, Garry D. Bruton, and Yuan Lu. *Understanding business group performance in an emerging economy: Acquiring resources and capabilities in order to prosper*. 2005.
- Zhang, Laurina. "Intellectual Property Strategy and the Long Tail: Evidence from the Recorded Music Industry". In: *Management Science* 64.1 (2018), pp. 24–42.
- Zhu, Hongjin and Chi Nien Chung. "Portfolios of Political Ties and Business Group Strategy in Emerging Economies: Evidence from Taiwan". In: *Administrative Science Quarterly* 59.4 (2014), pp. 599–638.