

## SPECIAL ISSUE ARTICLE



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# Empirical inquiry without hypotheses: A question-driven, phenomenon-based approach to strategic management research

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## Abstract

**Research Summary:** Many advances in strategic management have resulted from the application of formal deductive methods, based on tests of specific hypotheses derived from theory. Nonetheless, numerous important research topics involve phenomena that are novel and/or causally complex and so resist basic hypothetico-deductive logic. As a result, many of the most important findings in strategy research have come from open-ended studies of relevant phenomena. The special issue of the SMJ on “Question-Driven and Phenomenon-Based Empirical Strategy Research” presents innovative ideas for question-driven research and expands the toolkit of research approaches. In this introduction we describe the twelve articles in the special issue, focusing on how they contribute to continued development of the question-driven approach to research in strategic management.

**Managerial Summary:** One of the frustrations managers have with academic research is that it tends to be driven by questions that are theoretically interesting or lend themselves to clever econometrics. Accordingly, the results can lack managerial relevance. We highlight research that takes the opposite approach—identifying important business phenomena and devising empirical approaches to characterize them and derive managerial implications. In this introductory article, we briefly summarize the studies

in the special issue, showing how they answer a diverse set of questions using a range of methods.

#### KEYWORDS

empirical, phenomenon-based, question-driven

Since the birth of the strategic management field in the 1970s, researchers have made significant advances in identifying and explaining mechanisms that drive strategically relevant phenomena. Some of these advances have resulted from the application of formal deductive methods, based on tests of specific hypotheses derived from theory. However, many of the phenomena that are relevant for strategy scholars and practitioners are causally complex and so resist basic hypothetico-deductive logic. As a result, many of the most important findings in strategy research arise from more open-ended research questions concerning relevant phenomena. Starting with questions about intriguing phenomena enables scholars to document new systematic patterns, identify new mechanisms, refine existing concepts, and even construct new theories. Well-defined research questions backed by robust research design underly this progress.

The goal of this special issue was to present innovative ideas for question-driven research in strategy, helping to expand our toolkit of reliable research approaches. We wanted to showcase strong research that identifies questions that are important for strategy scholarship and provides reliable answers to those questions. We sought research that involved systematic and thorough analysis of data and led to robust core results while acknowledging the relevant boundary conditions of those results.

In particular, we wanted to publish work that:

- *Asks new questions*, identifying important puzzles regarding strategically relevant phenomena without developing or testing specific hypotheses.
- *Advances methods*, introducing novel data or analytical approaches to provide reliable answers to the research questions.
- *Offers meaningful results*, producing rigorous interpretations of analytical results and generating novel insights.
- *Builds framing templates*, expanding the ways that strategy scholars frame and execute question-driven empirical research.

The 12 articles for the special issue are outstanding pieces of research. They offer reliable answers to diverse questions using rigorous and innovative ways of collecting and analyzing empirical data. The articles' topics include competitive dynamics, strategic decisions, value creation and appropriation (VCA), incentive structures, talent acquisition, firm time horizon, corporate social responsibility (CSR), voids in market-based institutions, and entrepreneurial processes. The studies' methodologies include computational simulation, qualitative case studies, quantitative case studies, surveys, and laboratory and field experiments. Their analytical approaches include innovative quantitative and qualitative techniques such as regression discontinuity, matching models, and pattern-matching. Collectively, the studies contribute to theory by offering empirically-grounded definitions and measures of constructs, by identifying underlying mechanisms for relationships, and by documenting new systematic patterns.

The articles also illustrate the range of situations in which a question-driven approach may be appropriate and helpful, including:

1. *Empirical-theory conflict*: When exploring an empirical observation that conflicts with prior theory;
2. *Methods needs*: When investigating an area in which prior research is undermined by methodological flaws;
3. *Limited prior research*: When examining a topic for which there is prevailing conventional wisdom but a dearth of robust research;
4. *Ambiguous logic*: When examining a phenomenon for which prior theory offers unclear or conflicting predictions.

Below we summarize the articles in the Special Issue, using these four motivations for pursuing a question-driven approach as an organizing device.

## 1 | ARTICLE SUMMARIES

1. *Empirical observation conflicts with prior theory*. Two papers in the special issue use question-driven approaches to address conflicts between received theory and observable phenomena. These papers describe prior theory, contrast it with initial empirical observations, and then conduct deeper analysis to explain the apparent anomalies.
  - Bilgehan Uzunca and Bruno Cassiman (“Entry diversion: Deterrence by diverting sub-market entry”) focus on the puzzling observation that industry entry persists despite incumbents’ ongoing efforts at deterrence. This is in apparent conflict with “countless theoretical models” that describe deterrence mechanisms such as “advertising, limit pricing, excess capacity, minimum efficient scale, and absolute capital costs.” The authors show that, even with persistent entry, incumbents can protect their profits by diverting entrants toward different submarkets within the same industry. Using a unique submarket-level panel dataset from the global semiconductor manufacturing industry between 1995 and 2015, they offer empirical evidence for entry diversion. The threat of entry into a sub-market triggers capacity expansion by incumbents, which shifts the entry of both green-field and incumbent entrants into other submarkets.
  - Aline Gatignon and Laurence Capron (“The firm as an architect of polycentric governance: Building open institutional infrastructure in emerging markets”) motivate their question-based approach by noting that the Brazilian cosmetics firm Natura overcame voids in market-based institutions without following either of two models identified in prior work: the firm as the central architect of a closed institutional infrastructure and the firm as a secondary actor in building a shared institutional infrastructure. To understand this anomaly, Gatignon and Capron delved into Natura through a detailed, longitudinal case study that combined archival data and interviews. The authors used Elinor Ostrom’s design principles for polycentric governance as an analytical template, systematically comparing Natura to the two previously identified governance models. Their rigorous analysis confirmed that Natura followed a distinctive third pattern, which they termed *the firm as an architect of open institutional infrastructure*.
2. *Prior research and theory have been based upon incomplete or flawed data or analytical methods*. Four papers in this special issue argue that the data or methodological approaches

used in prior research are inadequate to offer guidance for answering their questions. These scholars explain the limits of existing strategy research methods for the questions at hand and establish the suitability of new-to-strategy methods.

- Victor Bennett and Aaron Chatterji (“The entrepreneurial process: Evidence from a nationally representative survey”) tackle the question of how prospective entrepreneurs make decisions leading up to the point of entry. While such decisions in established firms are well-documented, Bennett and Chatterji note, “[W]e have almost no empirical evidence about what kinds of choices prospective entrants make during this pre-entry period.” The common approach of relying on self-employment data to identify entrepreneurs suffers from sample selection bias. The authors remedy this problem by developing a novel representative dataset of US households and find that the bias is substantial: 90% of individuals who considered starting a business never quit their jobs. While the paper focuses on entrepreneurial learning before potential entry, its contribution is broader. The data set supports robust empirical examination of the entry decision, one of the key components of the economics of entrepreneurship. The paper demonstrates that designing and executing a novel survey unconstrained by pre-existing hypotheses can generate important new insights.
- Ben Lewis and Chad Carlos (“The risk of being ranked: Investor response to marginal inclusion on the 100 Best Corporate Citizens list”) argue that prior work on the effects of firm rankings has suffered from a lack of data on firms that were considered for a ranking list but ultimately excluded. They write that prior studies “have been limited in their ability to draw causal inferences about firms on the margin, primarily because they have not been able to access the full list of firms that were evaluated, but not included in the ranking.” Although theories generally assume that inclusion on a ranked list produces benefits for ranked relative to unranked firms, likely with increasing benefits for higher rankings, this article questions whether inclusion helps all the firms on a ranked list. The authors use regression discontinuity techniques to examine how list inclusion influences shareholder value for marginal firms. By analyzing firms that barely make or barely miss the 100 Best Corporate Citizens list, the authors find marginal firms *included* in the ranking experienced negative abnormal returns compared to marginally *excluded* firms. Intriguingly, investor response to marginal inclusion seems to be moderated by firms’ CSR investments. Marginally included firms that do not invest in CSR tend to experience a decrease in firm value, while firms that make material CSR seem to have a buffer for value.
- Florence Honoré and Martin Ganco (“Entrepreneurial teams’ acquisition of talent: Evidence from technology manufacturing industries using a two-sided approach”) note that prior studies of founding team recruitment have failed to empirically account for mutual selection processes, potentially leading to biased results and incomplete explanations of the recruiting process. For example, research has shown that founders with prior industry experience are better able to assemble entrepreneurial teams. But if potential team members prefer experienced founders, then founders without industry experience should be at a tremendous disadvantage because they lack both existing expertise and the ability to hire experts. Honoré and Ganco explore this conundrum using an empirical technique recently introduced in strategy research—two-sided matching models—to characterize when and how inexperienced founders can attract experienced team members. This paper demonstrates how newer techniques applied to seemingly well-understood phenomena can generate insights into puzzles such as inexperienced founders being able to assemble teams.

- Finally, Liangyan Wang, Brian Wu, Cornelia Pechmann, and Yitong Wang (“The performance effects of creative imitation on original products: Evidence from lab and field experiments”) argue that research on creative product imitation has relied on mathematical models and secondary data, “without the benefit of primary data or consumer data.” They study competitive interactions in the marketplace between incumbents and entrants, asking when incumbents will benefit from entrants’ product introductions. To answer the question, they incorporate consumer response to entrants’ creative imitations of existing products. The study focuses on the role of perceived quality of the new product in determining consumer response to an incumbent’s existing product. To do this, they examined sales of the original Apple iPhone in China in two cases: (1) when this product was an exclusive offering on retail store shelves versus (2) when both original Apple iPhones and creative imitation products were in the choice set together. Across five lab and field experiments, they find that a moderate-quality creative imitation from an entrant cuts into sales of the incumbent’s product. By contrast, a low-quality creative imitation actually benefits the incumbent, such that satisfaction with and sales of the incumbent’s original product increases. They explain consumer perceptions based on the concept of *disconfirmation of expectations* as a mediating variable for performance outcomes.
- 3. *Conventional wisdom has outpaced rigorous research.* Two articles in the special issue focus on topics for which there is prevailing conventional wisdom, yet a dearth of rigorous research findings. A key contribution of each article is an empirically-grounded measure of a concept that is prevalent in the popular press but has lacked a precise definition.
  - Jacqueline Kirtley and Siobhan O’Mahony (“What is a pivot: Explaining when and how entrepreneurial firms decide to make strategic change and pivot”) examine entrepreneurial “pivots,” a term that was popularized by the “lean startup” movement but remains ill-defined and poorly-understood in the research context. The authors explain, “entrepreneurs and the popular press have embraced the term pivot to describe nearly any strategic shift made by a firm, a person, or even a government...while the term pivot is widely used, we understand little about when and how entrepreneurial firms choose to make a strategic change or when a strategic change constitutes a pivot.” They note that the academic literature on strategic change offers limited insight into entrepreneurial pivoting because it focuses on established firms with pre-existing routines and clear performance metrics, both of which are absent in early-stage ventures. To explore strategic change in young ventures, Kirtley and O’Mahony conducted in-depth case studies of seven firms in the energy and cleantech sector. Their inductive study contributes an empirically-grounded definition of the term “pivot” that lays the foundation for further robust research. In addition, they offer a model describing how strategic change occurs in start-ups. In contrast to conventional wisdom, they find that pivoting was neither common nor sudden, but rather the product of “multiple independently triggered decisions.”
  - Rachelle Sampson and Yuan Shi (“Are U.S. firms becoming more short-term oriented? Evidence of shifting firm time horizons from implied discount rates, 1980–2013”) address one of the most common complaints that companies and investors lodge against one other, excessive *short-termism*. Sampson and Shi note that despite widespread perceptions that firms are becoming more short-term oriented, there are “reasons to be skeptical.” While the conventional wisdom is that both firms and investors have reduced their time horizons, there is scant academic work to substantiate the claim. The principal problem is defining short-termism. As one practitioner put it, “prove to me that a series of decisions, each of which is optimal in the short-run, isn’t optimal in the long-run.” Sampson and Shi

solve the problem by developing a firm-specific measure, implied discount rate (IDR). The authors use the measure to document that markets are increasingly discounting firms' prospects, thus validating the common view. The paper complements the main observation with cross-sectional studies demonstrating the IDR is negatively correlated with firms' long-term investments, for example, R&D, and positively correlated with share repurchases and dividends. These analyses lend construct validity to the measure. This paper shows the insights gained from a well-constructed measure, using careful mechanics of construction and validation.

4. *Prior theory provides unclear or conflicting predictions.* The question-driven approach in the final group of four studies reflects cases in which extant theory offers either no predictions or conflicting predictions for their research questions.
  - Mary Benner and Joel Waldfogel ("Changing the channel: Digitization and the rise of 'middle tail' strategies") pick up the question of how digitalization has impacted strategic opportunities. Focusing on recent changes in the economics of motion picture production, the authors consider whether reduced production costs and new digital distribution channels allowed producers to create more diverse products aimed at smaller audiences. Benner and Waldfogel explain, "Prior work does not allow for unambiguous predictions about whether the potential for a long tail in demand will spur changes in the types of products created. On the one hand, with dramatically lowered costs and the availability of digital distribution, we might expect producers to respond to the opportunity to profitably create more products aimed at smaller audiences. At the same time, other research on media industries suggests reasons why blockbusters will continue to dominate." They use a novel dataset of 51,097 movies produced in the United States between 1980 and 2016 to tackle the question. Benner and Waldfogel find that the number of movies at both extremes—intended blockbuster and long-tail products—increased after digitization. They also find that new middle-tail movies, which have budget ranges of commercial movies but lower than typical blockbusters, are commonly released directly to digital distribution channels, predominantly by newcomer producers.
  - Rui De Figueiredo, Evan Rawley, and Orie Shelef ("Bad bets: Nonlinear incentives, risk, and performance") shed new light on the oft-trod territory of managerial compensation. It is well known that increased pay for increased performance (slope) leads to higher performance, while nonlinear compensation, for example, compensation that rises faster than performance (shape), leads to greater risk taking. Indeed, incentives are designed precisely to invoke these behaviors. The authors ask what happens "off-diagonal"—how does slope affect risk taking and how does shape affect performance? They note the "received wisdom" that increased risk is associated with increased performance before describing a plausible scenario in which the opposite would be true. Examining the context of hedge funds, they find the unintended effects of incentive design can be greater than the intended effects. In particular, under certain circumstances with nonlinear incentives, managers will make "bad bets" (negative expected value investments). This paper demonstrates the power of bringing a new lens to a seemingly well-understood phenomenon.
  - Dmitry Sharapov and Jan-Michael Ross ("Whom should a leader imitate? Using rivalry-based imitation to manage strategic risk in changing environments") consider how a leading firm can stay ahead via imitative strategies that blunt the efforts of competitors. In many competitive settings, such as where Intel competes with ARM and Texas Instruments, or where Coca Cola competes with Pepsi and Suntory, the leader faces multiple, diverse rivals. The authors note that in a dynamic setting involving multiple rivals,



interactions between firms are too complex for a priori theoretical predictions. They ask, “which rivals should a leader focus on: near neighbors or challengers?” To answer the question, they relax the assumptions of static environments and study competitive interactions during environmental changes. The authors use a computational model and then conduct an empirical test using data on multi-competitor sailing races from the America's Cup World Series from 2011 to 2013. They find that *neighbor* imitation is a better strategic choice to stay ahead when environmental changes are infrequent and minor. In contrast, *challenger* imitation is more effective when environmental changes are frequent and substantial.

- Finally, Philipp Kern and Howard Gospel (“The effects of strategy and institutions on VCA in forms: A longitudinal study of three telecom companies”) build on the literature on VCA. They pose the question of how national institutional context can influence strategic decision making and constrain the ability of firms to create value and distribute that value among stakeholders. The authors argue that the literature on VCA offers no predictions regarding the potential impacts of the broader institutional context on managerial decisions and the resulting distribution of value. Using the VCA model and a mixed-methods approach, they investigate the evolution of VCA in three telecommunications companies in the UK, Italy, and Germany. These companies began as state-owned enterprises but subsequently followed divergent paths. Kern and Gospel find distinct patterns of value creation and distribution in the three companies, consistent with differences in strategic decision making by managers within the firm and constraints imposed by institutions outside the firm.

## 2 | IMPLICATIONS

### 2.1 | Question-driven versus hypothesis-based strategy research

The papers in this issue have both targeted and aggregate impact. Individually, the papers provide robust answers to important questions. Collectively, the papers provide a rich understanding of how question-driven research on strategic management phenomena contributes to new theory that can support future hypothetico-deductive logic. Thus, the question-based approach is an important complement to prediction-based research.

Figure 1 compares and contrasts the question-driven approach to the conventional hypothesis-based approach to strategy research. It shows how the two approaches differ with respect to their framing of research issues, empirics, and updating of theory. Conventional strategy research tackles unexplained phenomena using existing theory and its attendant assumptions, concepts, and causal mechanisms. Such research uses theory to develop logical predictions concerning possible relationships within the phenomena, then collects and analyzes data to determine whether the predicted relationships hold. This conventional approach is well suited when there is a relevant conceptual base with which to develop hypotheses, but leads to unreliable logic and results when existing theory is only partially germane to puzzling phenomena.

In the question-driven approach, by contrast, questions arise from unexplained phenomena, fundamental flaws in prior research, or conflicts in extant theory. Scholars collect and analyze relevant data to generate possible answers to their questions, which in turn may provide opportunities to refine or generate theory. The results of question-driven research may:

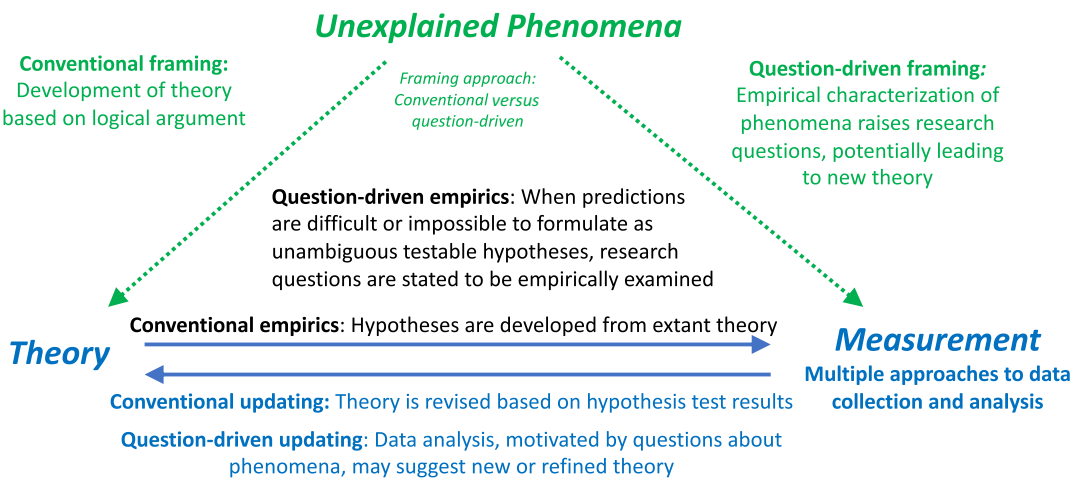


FIGURE 1 Question-driven approach versus conventional approach to strategy research

1. *Point the way to developing new stylized facts:* Question-driven studies offer new insights based on robust empirical findings. These new insights can foster further studies (including replication) that potentially convert the findings into new stylized facts. The new stylized facts can, in turn, invite theory generation in future research.
2. *Refine existing theory:* Question-driven research can fill gaps in existing theories by discussing how the new patterns identified by the research can reshape prior assumptions, concepts, and causal mechanisms. This approach may work within the bounds of a single theory or may connect two or more theories that have previously proceeded independently.
3. *Generate new theory:* Explanation of patterns uncovered in question-based studies may require new assumptions, concepts, and/or causal mechanisms, and so create new theory. This approach pushes past the boundaries of existing theory. This may involve de novo assumptions, concepts, and mechanisms that do not arise within an existing theory or, perhaps more commonly, may instead involve major recombination of elements of different theories to create a new conceptual platform.

We are proud of the individual papers in this special issue as well as their cumulative insights for robust question-based research in strategy. The diversity of the articles in the issue illustrates that there is no single approach to question-driven research, but rather an array of promising possibilities. We look forward to future research that offers new ways of framing question-driven insights.

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