Best practices in developing, conducting, and evaluating inductive research☆

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ABSTRACT

This editors' introductory article to the *Human Resources Management Review* special issue on inductive research methods aims not only to provide an overview of the four main articles, but to provide guidance to researchers and gatekeepers about how best to conduct such research. We address four specific goals in the current article. First, we present a brief overview of each of the four papers. Second, we provide a general background on deduction, induction, and abduction: what they are, how they are distinguished from one another and should be used in a complementary manner, and how our field has moved away from inductive toward deductive paradigms over the last five decades. Third, we shed further light on the current representations of deductive versus inductive approaches in our collective published works, and what can/should be done to achieve a better balance between them as we move forward. Fourth, we offer several "best-practice" recommendations for how best to conduct and evaluate research that does not conform to the prevailing hypothetico-deductive model.

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"Not enough theory" is a common criticism of submitted manuscripts offered by reviewers and editors. Indeed, the current zeitgeist of organizational science appears deeply vested in a "top-down," deductive approach that relies primarily on testing a priori hypotheses. Accordingly, inductive research conceived as "bottom-up," data-driven, and/or exploratory rarely appears in top-tier outlets. Unfortunately, this broad sentiment against exploratory and inductive research comes at a cost. As articulated by several leading scholars (e.g., Hambrick, 2007; Locke, 2007; Spector, Rogelberg, Ryan, Schmitt, & Zedeck, 2014), a sole reliance on the hypothetico-deductive approach limits the advancement of organizational science (as well as other sciences) and can contribute to research and publication practices that are less than ideal. The absence of inductive research restricts our field to the study of only those questions which have a sufficient theoretical basis and discourages the exploration of new questions for which theory is not yet available. Further, the myriad research topics within human resource management (and even management more broadly) carry with them many important research questions that might benefit from a more empirical and exploratory approach. With this as a backdrop, the goal of this special issue is to facilitate a thoughtful and balanced dialogue on the value that inductive research brings to organizational science and, relatedly, what constitutes *high-quality* inductive research.

Our objective for this editors' introductory article to the *Human Resources Management Review* special issue on inductive research methods is to not only introduce the four main articles, but to provide guidance to researchers and gatekeepers about how best to conduct such research. We will address four specific goals. First, we will provide a brief overview of each of the four papers. Second, we provide a general background on deduction, induction, and abduction: what they are, how they are distinguished from one another and should be used in a complementary manner, and how our field has moved away from inductive toward deductive paradigms over the last five decades. Third, we draw from our interviews with some of the thought leaders (former and current editors of leading journals) within our field to shed further light on the current representations of deductive versus inductive approaches in our collective published works, and what can/should be done to achieve a better balance between them as we move forward. Fourth, we offer several "best-practice" recommendations for how best to conduct and evaluate research that does not conform to the prevailing hypothetico-deductive model.

1. Overview of articles

The four articles included in this special issue cover some of the key topics related to inductive research that deserve careful attention – namely, exploratory data analysis (Andrew Jebb, Scott Parrigon, and Sang Eun Woo); Big Data (Samuel McAbee, Ronald Landis, and Maura Burke); grounded theory (Chad Murphy, Anthony Klotz, and Glen Kreiner), and abductive reasoning (Robert Folger and Christopher Stein). The first article by Jebb and colleagues introduces the notion of exploratory data analysis (largely developed by a prominent statistician John Tukey) as a rigorous methodological mechanism for "phenomenon detection" within organizational sciences that uses various statistical and graphical techniques. The authors clarify how exploratory data analysis is (and should be) distinguished from confirmatory data analysis, as well as from some of the "data exploration" efforts that are considered largely problematic when presented as confirmatory (e.g., *p*-hacking). A clear case is provided for the importance of formally (and openly) distinguishing exploratory from confirmatory data analytic approaches in light of the recent dialogue in the field about replication-related issues. Jebb and colleagues also note that exploratory data analysis allows researchers to maximize the value of data, and provide several examples of how it can be done in practice (e.g., multiple uses of a data set; implementation of graphical/visual analytic methods).

In the second article, McAbee and colleagues provide a "cautiously optimistic" perspective on the Big Data opportunities for inductive research in organizational sciences. Specifically, they discuss how Big Data analytics (i.e., a set of techniques for identifying relations between observed variables and/or cases using Big Data) may facilitate organizational researchers' inductive efforts, and illustrate these points by providing a number of specific examples of data-driven research and practice organized by major HR and related topics (e.g., selection, recruitment, performance management). At the same time, the authors also discuss three most-commonly recognized limitations of Big Data analytics (i.e., dustbowl empiricism; overreliance on behaviorism; data veracity) and argue for the importance of organizational scientists' knowledge and insights in interpreting the data.

While the first two articles consider the quantitative side of the inductive research (focusing on the role of data and analytic techniques for detecting interesting phenomena), the third article by Murphy and colleagues introduces an example of qualitative data-driven approaches to theory building: grounded theory. Murphy et al. provide an introductory (yet sufficiently detailed) overview of what grounded theory is, how it differs from other inductive qualitative methodologies, and how it may be done in practice. Further, the authors note that the philosophical orientation of grounded theorists is diverse and often diverges from positivist traditions where research is evaluated based on internal and external validity. This calls for a different set of guidelines for ensuring the research quality when developing a grounded theory. In light of this, the authors highlight a set of criteria for building and evaluating the trustworthiness of a grounded theory (i.e., credibility, transferability, dependability, and confirmability), which is becoming a norm among grounded theorists in the broad field of management but has yet to be fully adopted within the HR research community.

The fourth article by Folger and Stein significantly extends and enriches this special issue's coverage of the deduction-induction divide within organizational sciences by introducing the concept of abductive reasoning. As we elaborate in the next section, deduction, induction, and abduction are to be clearly distinguished in their respective roles for knowledge building, and all three modes of science should be fully recognized and appreciated within our field. To this goal of diversifying the methodological choices within organizational research, Folger and Stein provide a helpful introduction to abduction as a reasoning process in which a new, revised, or extended theory is developed after observing (or detecting) a surprising phenomenon.

2. Deduction, induction and abduction

Philosophers of science often distinguish three specific forms of inference that form the logical basis of a researcher's investigations: deduction, induction, and abduction. *Deduction* is simply reaching a logical conclusion based on true premises. If all Object As have Property *i*, then if Object B is an A, it will have Property *i*. More specifically, if all Employees in a company own an automobile, and if Lynn is an employee of said company, then it follows logically that Lynn owns an automobile. Note that the conclusion merely follows logically from the premises. This is the logic of deductive/confirmatory research. We state hypotheses derived logically from a theory. If the theory and derived hypotheses are correct, then the results should come out as expected. For example, in structural equation modeling we specify a model assumed to be correct that will lead logically to a given structure in the data. Of course, the limitation to deduction is that we do not know whether or not our premises are correct, and our investigation is not a direct test of the premises, only the conclusions that derive from those premises. Thus Lynn might own an automobile even though not every employee owns one, and/or Lynn might not really be an employee (i.e., our assessment of