Technical note

Renaissance of case research as a scientific method

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A R T I C L E I N F O

A B S T R A C T

Since the seminal article by Eisenhardt (1989), scholarly interest in case research has mushroomed in operations management and organization sciences. Volumes of methodological texts are matched with a massive amount of empirical research that seeks to apply and further develop case research as a scientific method. What is missing from this literature is a treatment of the *methodological diversity* of case research. In this paper, we seek to unveil this heterogeneity by describing three distinct methodological accounts of case study: theory generation, theory testing, and theory elaboration. Each approach has its own idiosyncrasies, in particular when it comes to the interplay between theory and empirics. A typical case research incorporates both existing theories and empirical data to varying degrees. In light of this heterogeneity, we re-interpret key aspects of extant contributions and discuss guidelines for future case research. We propose that ultimately, case research rigor is determined by attention to idiosyncrasy and transparency of reasoning. We conclude by arguing that we have witnessed in the past 25 years in organization research what amounts to *the Renaissance of case research*.

1. Introduction

One of the fundamental characteristics of scientific research is *transparency*. In order to evaluate the merits of an argument, one must have access both to the logic that generates the conclusion and the premises that support it. Concerning case studies in operations management (OM), Barratt et al. (2011, p. 339) concluded that case studies generally "lack details in how the study is framed and how the analysis is conducted (thus compromising) the basic scientific mode of inquiry that would call for transparency..." We believe such lack of transparency may be one of the leading causes of misconceptions and misinterpretations surrounding case research (e.g., O'Reilly et al., 2012; Pratt, 2008; Yin, 2011).

The problem is not in any way peculiar to OM research. The current editor of the *Academy of Management Review*, Suddaby (2006, p. 633) noted that grounded theory (Glaser and Strauss, 1967) "is often used as rhetorical sleight of hand by authors who are unfamiliar with qualitative research and who wish to avoid close description or illumination of their methods." Ragin (1992), in turn, wrote that "[t]he term 'case' is one of many basic methodological concepts that have become distorted or corrupted over time." The word *case* is used colloquially in numerous settings, and even within scientific communities, its use is diverse (Yin, 2003).

Scientific research is a complex endeavor and our cognition both as authors and evaluators of arguments is bounded. The problem is conspicuous in case research, not because case researchers in particular are suspect, but because case study comes in many varieties and is underpinned by heterogeneous theoretical and epistemological premises. The goal of this paper is to clarify this heterogeneity. While our context is OM research, many of the points apply also to management and organization research and the social sciences more generally. In the end, we hope that we can come to a collective understanding that case research is about making informed and justified choices, not rule following.

In order to achieve our objective, we discuss three different methodological approaches to case research: theory generation, theory testing, and theory elaboration. All three seek formulation of theoretical insight that can be understood as the outcome of the interaction between a general theory the extant literature offers (e.g., socio-technical systems theory) and the empirical context at hand (e.g., interplay between the technically organized work units and social networking of workers). The three approaches differ chiefly in the relative emphases given to theory and empirics. In Fig. 1, arrow thickness denotes degree of emphasis.

To be sure, much has been written on case study both in OM (Barratt et al., 2011; McCutcheon and Meredith, 1993; Meredith, 1993; Voss et al., 2002) and in the general methods literature on organizations and social systems (Eisenhardt, 1989; Ragin and
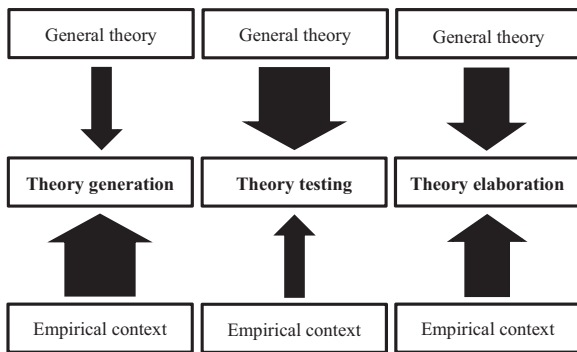
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Fig. 1. Three modes of conducting case research.

Becker, 1992; Yin, 2003). Many of the technical details on issues such as case selection, within-case analysis, and cross-case analysis, have already been covered in sufficient detail. Both in contrast and in complement with existing treatments, the main focus in this paper is to discuss the general methodological heterogeneity of case research. In particular, we seek to:

1. Challenge the unnecessarily narrow view of case research as theory *generation* (cf. Barratt et al., 2011; Bitektine, 2008).
2. Focus on case research as a *scientific method*. Understanding the forms of scientific reasoning used in case research is thus of central importance. More generally, the actual reasoning practices of scientists are much more complex and idiosyncratic than what methodological texts may lead us to believe (Mantere and Ketokivi, 2013; Stanovich, 1999). Related to this, we argue that while a number of prescriptive guidelines can be formulated, case research is ultimately not formulaic. We highlight both the formalized (computational) and the more idiosyncratic (cognitive) aspects of case research.
3. Establish that case research is an end in and of itself. The aim of case research is *not* to produce theories for others to test. Theories produced in case research can certainly be subjected to further testing, but as an *extension* of the earlier case research rather than as its validation.
4. Establish that declarations such as "we followed the grounded theory process" tend to be detrimental to transparency. In 2006 the editors of the *Academy of Management Review* (Bartunek et al., 2006) voted Dutton and Dukerich's (1991) grounded-theory case research of the Port Authority of New York and New Jersey as the most interesting piece of empirical research on organizations. The first reference to Glaser and Strauss appears in the last paragraph of this article. Case research must be made transparent by demonstration of what one has done, not by declaration that a formalized process was followed (Holton, 2007).

Finally, while this paper focuses solely on case research, it is important to note that one of the strengths of OM research has always been the combination of different methodological approaches and research designs. Case research is one of the many available methods such as analytical modeling, problem-solving, survey, behavioral experimentation, and others. They are all both valid and indispensable approaches to OM research.

2. The three modes of case research

Conceptual clarity is essential. We highlight two concepts in case research, because they link to the fundamental question of what is and what is not case research: the qualitative–quantitative distinction and the duality criterion.

2.1. Qualitative vs. quantitative research

For most of us, quantitative research refers to either large-sample research that relies on statistical inference (i.e., empirical quantitative) or mathematical and stochastic modeling (i.e., analytical quantitative). In contrast, qualitative research has typically been considered through what it is *not*. Whatever is not quantitative is qualitative; what is not numerical data is textual (e.g., interviews); what is not deductive is inductive; et cetera. Therefore, it is not surprising to find that case studies in OM are typically labeled qualitative (Barratt et al., 2011).

We submit that such distinction is misleading. First, implicit definitions by negation are neither rigorous nor impartial. Second, many research approaches categorized as qualitative in the above sense make use of quantitative data as well. Instead of focusing on the nature of the data used, we recommend adopting definitions of qualitative and quantitative research based on the meaning of the words *qualitative* and *quantitative* (cf. Denzin and Lincoln, 2011).

Qualitative = research approach that examines concepts in terms of their meaning and interpretation in specific contexts of inquiry. Quantitative = research approach that examines concepts in terms of amount, intensity, or frequency.

In light of these definitions, much of the case research pegged as qualitative appears to adopt a fundamentally quantitative orientation. Consider Proposition 1 in Eisenhardt and Bourgeois (1988, p. 743): "The greater the centralization of power in a chief executive, the greater the use of politics within a top management team." The essence of the proposition is the association between two quantities that vary in intensity and covary with one another. For an OM example, consider Proposition 2 in Choi and Hong (2002, p. 488): "The cost consideration represents the most salient force that shapes the emergence of the supply network structure." This proposition, too, is based on the notion of measurable quantities. These are just two examples out of many. Indeed, it is not at all uncommon for many case researchers *to think quantitative*. While the quantitative approach often also involves actual measurement of the quantifiable characteristics (Nunnally and Bernstein, 1994), measurement is not a necessary condition: one can be theoretically quantitative without actually measuring anything. In the qualitative–quantitative distinction, what is central is one's fundamental theoretical orientation, not the data or the analysis method used. Indeed, in their classic introduction to grounded theory (the paradigmatic qualitative research approach), Glaser and Strauss (1967) devoted an entire chapter to showing how the grounded theorist can use quantitative data.

The quantitative orientation of case research can also manifest itself in research design. In a multiple case study, for instance, one engages in cross-case analysis by explicit comparison of cases in terms of measurable characteristics. Theoretical sampling of cases, in turn, often relies on quantitative criteria. Choosing *polar types* of cases (Eisenhardt, 1989, p. 537) presupposes an underlying dimension onto which candidate cases map. In multiple case research therefore, both sampling and comparative cross-case analysis are based on quantification.

To illustrate the qualitative–quantitative distinction, consider research on culture. What distinguishes the quantitative researcher from the qualitative is the way the researcher conceives culture as a concept. Hofstede (1980) approached culture through quantifiable dimensions such as *power distance* or *uncertainty avoidance*. A key ingredient of his theory is the notion that different cultures exhibit different degrees of these quantities. For qualitative researchers on culture, such as Geertz (1973) and other ethnographers, quantities, dimensionality, and measurement are irrelevant. Geertz's (1973) anthropological inquiry into Balinese cockfights is about symbols,