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WHAT IS MIXED METHODS RESEARCH AND WHY USE IT?

We define mixed methods research as a research approach that weaves together strands of research using qualitative and quantitative data to speak to and enhance each other, resulting in a more holistic body of evidence. What does a holistic body of evidence look like? Take, for example, a study by Shelley Correll and colleagues (2020) that greatly enriches our understanding of how gender discrimination operates in firms. Motivated by a lack of research that unpacks how managers' assessments of their employees' work come to be gendered, these scholars analyze managers' written performance reviews and numeric ratings of a stratified random sample of 208 employees in a large technology firm in Silicon Valley.

In the first strand of this research project, three researchers inductively (i.e., intentionally letting findings emerge organically from the data) analyzed all the written performance reviews, taking and comparing notes, to capture all the forms of commentary found in them. This informed the creation of a codebook of 88 language codes (e.g., experience, team player, visionary, too aggressive, too distant, etc.) that were systematically coded across all the reviews. The second strand of the project employs these codes as quantitative data and assesses the degree to which gender is related to the likelihood of receiving certain types of feedback. In addition, the researchers correlated certain comments with the likelihood of an employee receiving a higher numeric rating, looking for gendered processes in those patterns as well.

This study is an excellent example of mixed methods research because the second strand of research would not have been possible without the first strand of research using qualitative data to build a model of key forms of manager feedback. Also, although the findings from the analysis of the qualitative data are essential to revealing the many dimensions of managers' perceptions of their employees, those data alone cannot speak to patterns of

which employees are more and less likely to receive certain kinds of feedback. The quantitative data analyses were necessary for that part of the project.

Together, the layers of qualitative and quantitative data and findings from each strand helped these researchers achieve key breakthroughs in understanding how managers' gender beliefs frame their evaluations of employees and the implications therein for gender discrimination. In this mixed methods exemplar, Correll et al. (2020) reached important conclusions, including the existence of some gender-neutral forms of evaluation (e.g., levels of technical knowledge), as well as gender bias in the degree to which women are critiqued as too aggressive and men as too soft. Also, values such as "taking charge" are more valued among men than women, and "taking charge" results in the highest performance ratings for men, but that is not the case for women. Their findings, only possible through this mixed methods approach, shed important light on how gender biases infiltrate a process meant to be fully meritocratic.

THE FIELD OF MIXED METHODS RESEARCH

It is not uncommon these days to see references to mixed methods research in social science publications, at conferences, in a list of research courses, or within a call for papers or proposals. An official movement to define and promote mixed methods research is largely traced to the late 1980s as a response to a split methods terrain in which researchers tended to choose between quantitative or qualitative traditions or paradigms of research to understand social phenomena and remain within that paradigm's boundaries (Mertens et al. 2016). Over time, the mixed methods research movement has developed into a field working to formalize research approaches that draw from what many consider to be separate quantitative and qualitative research paradigms, creating a third path or paradigm (Johnson and Onwuegbuzie 2004; Morgan 2007). This relatively new and quickly legitimizing field comprises key founders and experts, a vast and expanding literature defining approaches through a common lexicon, and a dedicated professional organization, journals, handbooks, and multiple book series (Johnson, Onwuegbuzie, and Turner 2007; Timans, Wouters, and Heilbron 2019).

There is much to value in this formal movement, *and* it is situated within a much longer and broader history of social research encompassing a variety of forms and labels for the combined use of quantitative and qualitative data to advance science. Researchers such as Burgess and Locke (1945), Du Bois (1899), and Lynd and Lynd (1929) wove together evidence

from multiple strands of research, including compiled statistics, participant observation, interviews, and historical records, to craft theories about social organization and interactions. For example, W. E. B. Du Bois (1899) used data gathered through participant observation, interviews, surveys, census data, and archival research to construct a case study of life for Black residents of Philadelphia in *The Philadelphia Negro* (Hesse-Biber 2010). Some of the earliest texts on empirical methods of social science lay out the value in scouring existing documents for foundational knowledge, talking to key informants, observing activities in key social institutions and organizations within a site of study, and keeping detailed notes on all of this, as well as gathering systematic numeric data in records or through surveys, to represent and statistically examine patterns (Chapin 1920; Park and Burgess 1924). Early social science, whether focused on individuals, organizations, or cities, understood the importance of fully understanding social contexts and the interactions within them, which often requires different forms of data and inquiry to achieve.

In this book, we embrace the idea of mixed methods research as a general and flexible approach, often drawing on the forerunners and materials of the more formalized field but recognizing there is a lot of excellent social research occurring beyond the confines (i.e., not using the same vocabulary) of said field. We acknowledge that many leaders in the more formalized field argue that mixed methods research, as its own paradigm of research, requires unique forms of research questions, sampling, and so on. However, we see mixed methods research more as a tapestry in which we are developing different strands of data (derived from different forms of sampling and using different data collection tools) and weaving them together with contrasting philosophical approaches (objective vs. subjective or deductive vs. inductive) to arrive at a richer and more complex set of findings than any one strand of research might be able to accomplish on its own. Furthermore, before any pieces are stitched together, they should all be evaluated in their own right using the standards of the methodological traditions they follow. Then, as they come together, their combination should be assessed for logical fit and flow.

Although throughout this book, we highlight the flexibility of mixed methods approaches, we argue that mixed methods research is distinct from multiple methods research, in that it always includes both qualitative and quantitative data in some combination and there are opportunities for findings from a strand of research using one kind of data to contribute to the development, collection, or analysis of another strand of research involving another kind of data. This is reflected in our definition of mixed methods research at the start of this chapter.

Other definitions of mixed methods research tend to center on the idea that it is a combination of research from the so-called quantitative paradigm combined with research from the so-called qualitative paradigm, which fits more squarely in a third paradigm labeled Mixed Methods Research (Ghiara 2020; Johnson, Onwuegbuzie, and Turner 2007). This presumes that there are two distinct paradigms entailing completely different assumptions, analytic approaches, and research goals. For example, these definitions of “quantitative research” depict this research paradigm as deductive, generalizable, and oriented toward hypothesis testing. In practice, however, it turns out that some research endeavors do not fit so squarely in one of the two paradigms (Pearce 2015).

CLARIFYING SOME TERMINOLOGY

As may be obvious by now, there are a variety of languages used to describe mixed methods research and its components, so here we lay out for you some of our guiding ideas.

What Is Being *Mixed* in Mixed Methods Research?

Within the label of this approach to research, “mixed methods research,” the word *methods* can be misleading. As with so many other words used in this style of research, *methods* means different things to different researchers (Tashakkori and Creswell 2007). It could mean the underlying paradigm or set of philosophical underpinnings to research, which some people refer to when talking about quantitative or qualitative methods, or a particular approach, like grounded theory methods. The word is seen by others as only referring to practical tools, like data collection or analysis methods (e.g., survey methods, ethnographic methods, or hierarchical linear regression methods). Finally, some people combine both into a big tent for “methods.” To be as clear as possible in this book, rather than discuss what “methods” are being mixed, we rely on the concept of *strands of research* to indicate what is being mixed in mixed methods research.

A strand of research is a series of steps involved in collecting and analyzing a single type of data, which can then be combined with another strand of research in some way. These strands can carry equal or disparate weights, and there may be two or more strands within a single mixed methods research project. Throughout this book, we refer to two dimensions of mixed methods design: the time ordering of data collection and analysis, categorized as concurrent or sequential, and the rationale for mixing two strands of data,

categorized as elaboration or extension. To lay out these concepts briefly, in concurrent approaches to mixed methods research, research strands are conducted simultaneously or nearly simultaneously. This can occur in the context of a single sample, nested samples, or separate samples, as we discuss in Chapter 3. In other cases, the strands may be completed sequentially with findings from one strand informing the data collection and/or analysis of the next strand. The choice of using either of these two approaches, concurrent or sequential, hinges on researchers' aims and resources for conducting data collection or the analysis of preexisting data.

We will also refer to mixed methods research as either typifying an elaboration approach or an extension approach. Mixed methods research that seeks to answer one question or a set of closely related questions takes an elaboration approach, in that they build knowledge about a single topic from multiple angles. This is somewhat analogous to triangulation, an approach focused on using multiple methods to provide validation (Fetters and Molina-Azorin 2017). However, it is more flexible in allowing different strands of research to build upon—not necessarily confirm—one's findings. On the other hand, extension-of-findings approaches build outward, often taking the findings from the first step in a research project to design the data collection and/or analysis of the second. Research taking an elaboration approach may be either concurrent or sequential, but extension-of-findings approaches will always be sequential. We will delve into these options in the coming chapters.

The Q Words

In discussing strands of research, you may notice that we avoid using the terminology of “qualitative research” or “quantitative research” in favor of more specifically describing the research approach being used. We do this because the phrases tend to overemphasize the similarity among certain types of research while de-emphasizing commonalities across them. For example, quantitative research is typically described as coming from a deductive approach, or an approach in which researchers start with a theory or set of assumptions and use data to test those theories, and qualitative research as coming from an inductive approach, in which researchers rely on the data to reveal new theories or conclusions that may be applied more broadly (Morgan 2007). This both ignores approaches that do not fit neatly within those boxes (particularly deductive work that draws on qualitative data, such as forms of content analysis (Neuendorf 2017), and inductive work with survey or other quantitative data) and obscures how research is often practiced in a less tidy way than these labels imply. Although some work has proposed a more

abductive approach to qualitative research, which entails “the cultivation of anomalous and surprising empirical findings against a background of multiple existing sociological theories and through systematic methodological analysis” (Timmermans and Tavory 2012:169), this has not altered the ways that these “Q words” are overly simplified and juxtaposed to one another.

Readers also come to research methods with specific ideas about what these two phrases mean. For example, many researchers may immediately picture regression models when reading “quantitative research,” which is only one among many tools that people who consider themselves quantitative researchers may use. Increasingly, research can involve elements of both what has conventionally been considered quantitative and qualitative research, thus reducing the usefulness of these terms. Thus, in this book, we prefer to use specific terminology to refer to the kinds of tools and processes being used to analyze data. When we do use the terms *quantitative* and *qualitative*, we will be referring to data (e.g., is the data processed as numbers or not) rather than the methods being used or the researchers doing the work.

OVERVIEW OF THE BOOK

There are at least four possible moments in mixed methods research projects when we must think carefully about how the different strands of our research are coming together to inform the broad goal(s) of our research. These moments are during (1) the development of research questions, (2) sampling, (3) the design of data collection instruments, and (4) the analysis and interpretation of data. Our substantive chapters each discuss a different one of these four potential moments for mixed methods research. In these chapters, we assume a baseline understanding of social science research methods and focus our discussion on how mixed methods research is planned and executed.

Chapter 2 focuses on developing research questions to guide a mixed methods research project. The chapter first outlines how to think about research questions for a fully defined mixed methods project from the start, but we also discuss how mixed methods research can emerge and evolve over time, allowing the findings from one type of data to inform the development of a research question to be answered by the analysis of a different type of data.

Chapter 3 discusses how a sampling or case selection effort in any one strand of research can be enhanced by capitalizing on opportunities or insights presented by another form of data. For concurrent projects, where

the sampling or case selection approach for each method is designed from the start, we offer guidance on using one sample for all strands of the project, and for sequential projects, where the analysis of one form of data is completed in time to inform the sampling or case selection design for the second, we describe options for moving in either direction—quantitative to qualitative data or qualitative to quantitative data.

In Chapter 4, we cover a range of options for using the results from analysis of one form of data to inform the development of a tool to collect a different form of data. This includes using findings from focus groups or individual, semistructured interviews to specify key concepts of study, develop precise measures, or situate and adapt existing measures or intervention mechanisms in new contexts. This approach can also be used when moving from the analysis of quantitative data to designing tools to collect qualitative data. For example, survey data and analysis might help a researcher better tailor questions in a less structured interview or strategically focus observations.

Chapter 5 is about integrating qualitative and quantitative data in the analysis phase of a project. We present options for integration that focus on either the elaboration or confirmation of findings using two data sources or the extension of one set of findings using another type of analysis. We also recognize the form an integration takes depends on whether the analyses of both types of data are happening independent of each other or whether an analysis of one form of data might depend on findings from the other form of data. We share a variety of options for integrating in the analysis phase, keeping these design differences in mind.

At the end of each of the four main chapters (2–5), we provide Application Exercises that are designed to help a reader process the material and apply it in their own research. In Chapter 6, we conclude the entire book by presenting general issues raised for mixed methods research and discussing future needs and opportunities for this type of social inquiry.

What We Do Not Cover

This book is a resource for researchers seeking to conduct mixed methods research for the first time or for those who already have some experience with mixed methods research and may wish to revisit other possibilities. We provide many examples from our own and other research projects throughout the book in order to illustrate the vast array of options available for conducting mixed methods research. We do not, however, cover every aspect of mixed methods research, nor do we offer detailed advice on any one method or use of data. We write with a specific audience in mind: researchers, at any level

from graduate student to seasoned professionals, who have general expertise on single-method approaches. That is, we assume readers are familiar with the basic logic of social science research methods, and we assume that they are practitioners of analysis of at least one type of data. With these skills and knowledge in place, readers can use this book as a springboard to expand the types of data and data analysis they use. We intend for this book to help those who wish to dive into all aspects of mixed methods research as well as those who will bring their own methodological expertise to a group project but wish to understand how unique strands of research will operate together.

Uses for This Book

This book is ideal for use in the classroom or for informing one's own research expertise or practice. First, this book would fit well into either a short course on mixed methods research or as the primary material on mixed methods research within a general social sciences research methods course. In the latter case, instructors often cover mixed methods research in the final one to two weeks of a semester-long general methods course. Because our book is short and uses nontechnical language, it would fit perfectly in such a schedule and would build upon the materials students learned in earlier portions of the course. This book could also be a guide for researchers wishing to better understand how mixed methods research works in practice. In one such scenario, a researcher may be looking for a taste of mixed methods research in order to acquaint themselves with the logic and options of mixed methods research, perhaps to be a better reviewer of this type of work. In another, a researcher may be planning to conduct mixed methods research in the near future. In either case, our goal in this book is to offer readers the tools necessary to understand and practice mixed methods research.

We hope that readers come away from reading this book with a new or renewed understanding of the varied approaches researchers take in employing mixed methods research. This book is not as comprehensive as a standard textbook, but our aim is to provide trained researchers with an entry into mixed methods research.¹ To that end, we have written this book with three takeaways in mind. First, we provide a general overview of mixed methods research. Our design brings readers through the stages of planning and enacting a research

¹ Some examples of more comprehensive, textbook treatments of mixed methods research include Creamer (2018), Creswell (2015), Hesse-Biber (2010), Greene (2007), Morgan (2014), Plano Clark and Ivankova (2015), Ridenour and Newman (2008), Tashakkori and Teddlie (2009), and Watkins and Gioia (2015).

project so that they may design their own or take part in a team of researchers seeking to combine different strands of research. We offer numerous tips for how to think about sequencing and integrating different steps in the process. Second, we provide numerous specific examples of published mixed methods research in order to spark ideas about how similar techniques or approaches can be used in the future (see Appendix, Table A.1 for a chapter-by-chapter listing of citations for the main exemplars used). These real-world examples also offer a glimpse into the messiness or complexities of research; while we try to provide guidelines and metrics for designing projects, specific examples will illustrate how research projects evolve and surprise us at times, making flexibility and adaptation a necessity and a gift. Finally, this book offers readers a baseline familiarity, which will allow them to evaluate mixed methods research. By outlining the various approaches mixed methods research can take without being dogmatic about the forms it must take, we highlight the payoffs of various approaches, which can help reviewers identify the strengths of research projects they are reviewing (either for grants or journals) and suggest improvements that go beyond simplifying the scope of the project.

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