



Mixed-Methods Designs

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Abstract

This chapter focuses on mixed-method designs, an increasingly popular approach to designing research in the social sciences that is used to combine the respective advantages of qualitative and quantitative analytical procedures and to strengthen the empirical analysis. After the introduction, two general principles of mixed designs are discussed, the principle of triangulation and the principle of integration. The former involves the concomitant application of different methods in order to cross-validate their findings. The latter entails the sequential combination of different methods to produce a unified causal inference, whereby one method is used to establish the final inference, and the other one is applied to prepare, test, qualify or refine the analysis generating this inference. Afterwards, the chapter proceeds by presenting three varieties of mixed-method studies: statistics-oriented, case-oriented and QCA-based mixed-methods designs. The last section

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before concluding discusses several advantages and limitations of mixed-method research.

Keywords

Integration · Methodological pluralism · Mixed-methods · Research design · Triangulation

1 Introduction

A mixed-method design is usually understood as a research strategy that combines qualitative and quantitative analytical procedures in a single study or research project, namely with respect to data collection and data analysis (Creswell 2014)¹. Instead, when multiple types of qualitative data (e.g., interviews and observations), or, respectively, multiple types of quantitative data (e.g., survey and databases) are examined, the expression “multimethod research” is used (see however Seawright 2016; Goertz 2017). Mixing methods implies accepting – at least implicitly – the pragmatist assumption that qualitative and quantitative methods are not only compatible, but also complementary for producing knowledge that is scientifically relevant and societally useful (Morgan 2007; Feilzer 2010). In that regard, it is worth noting that qualitative and quantitative research traditions are nowadays perceived as less oppositional, and thereby less polarizing, than it was during the fierce paradigmatic debates that were commonplace in the 1970s and 1980s. However, they still correspond to relatively distinctive research communities, whose research practices can be identified through their ideal-typical constitutive features. Generally speaking, qualitative research is traditionally associated with an ideographic paradigm emphasizing meaning, interpretation, subjectivity and inductivism, whereas quantitative research embraces a nomothetic paradigm which gives prominence to generalizability, causal explanation, intersubjective knowledge, and hypothetic-deductive reasoning (Denzin and Lincoln 2011; Given 2008). More specifically, qualitative and quantitative approaches co-exist by presenting distinctive features also when taking a “post-positivist” stance (Maggetti et al. 2013). In this respect, empirically oriented qualitative research is typically based on “[causal] process observations,” that is, pieces of evidence about the processes underlying specific causal relations (Brady et al. 2006). It is also characterized by special attention to individual cases for which evidence is derived from in-depth within-case analysis. What is more, a crucial goal of qualitative research is to uncover the causal mechanisms at work (Gerring 2004), that is, to transform the so-called black box into a transparent box exposing the properties and activities of the entities under investigation (Hedström and Ylikoski 2010). Quantitative research, on the other hand, relies on a large number of “data set observations” (Brady et al. 2006). Unlike the former, it is variable-oriented and concentrates on the (average) causal effect of

¹I would like to thank Ina Kubbe for helpful comments on this chapter.

one or a few of independent variables on a given dependent variable. It usually derives inference from cross-case comparison and thus requires cross-sectional and/or longitudinal variation. It also focuses on overall patterns of fit and is geared towards generalization (Mahoney and Goertz 2006).

The whole point of mixing methods is to transcend “paradigm wars” (Bryman 2008) and put together the respective advantages of qualitative and quantitative analytical procedures – in a nutshell, corresponding to context-sensitive knowledge and in-depth understanding on the one hand, and generalizability and analytical rigor on the other (Creswell 2013). More specifically, as this chapter will show, different methods can be combined in a (more or less) coherent framework to strengthen the analysis with respect to its reliability and validity (i.e., by ensuring the convergence of results when applying different perspectives), breadth (i.e., by extending the number of cases and the scope of the inquiry), or depth (i.e., by collecting richer information from a small number of cases) (Johnson et al. 2007; Teddlie and Yu 2007; Greene et al. 1989). What is more, a number of scholars concerned with the relevance of political science have argued that mixed methods are particularly well-suited for problem-driven, contextualized research that addresses pressing issues in the real world of politics (Schram et al. 2013). This argument rests on the assumption that mixed methods allow for alternative, flexible and heterodox methodologies that could help in overcoming meta-theoretical and methodological debates and better connecting research with practice². The added value of mixed-methods research seems to be increasingly recognized by the scholars in several disciplines as this methodological perspective is thriving. As Seawright (2016: 3) has shown by using a rough measure based on the overall number of scholarly texts that contain the expressions “multi-method” or “mixed-method” among those referred in Google Scholar (in all disciplines), the number of academic contributions that contain these expressions increased in absolute terms from a few hundred overall to around 6’000 for the former expression and around 11’000 for the latter on a yearly basis from 2000 to 2013.

The success of mixed-method research could be understood as a component of a general trend towards methodological pluralism (Giraud and Maggetti 2015). In this sense, qualitative and quantitative analytical paradigms have become less and less perceived as “ideological” enemies (Sartori 1993). Quite on the contrary, scholars increasingly recognize the benefits of both research traditions, by acknowledging not only how quantitative and qualitative tools can complement each another, but that they provide distinctive benefits when they are used in combination. This chapter moves forward from this assumption, that mixing methods is ontologically possible and even potentially beneficial (Olsen 2004), and it focuses on methodological issues and challenges related to the design of mixed-method studies. The question of the alignment between different ontologies and different methods to be mixed will be also mentioned towards the end of the chapter.

²As this chapter has a methodological focus, this question will not be treated.

As a matter of fact, mixed-method designs are not only mushrooming but also evolve and come in huge variety. Consequently, countless sophisticated typologies of mixed methods exist. For instance, Bryman (2006a) organizes different analytical procedures by distinguishing between: the simultaneous or sequential processes of data collection; whether priority is given to qualitative or quantitative data; the different functions of methodological integration, e.g., explanation versus validation; and the different stages of the research process where integration could take place. Teddlie and Tashakkori (2006) provide a typology that features four overarching “families” of designs: sequential; concurrent; conversion – occurring when data in one form are transformed into another form; and fully integrated. Hesse-Biber (2010) specifically mentions exploratory, confirmatory, and interactive mixed-methods research, that is, the practice of promoting a constant dialogue and systematic interaction between researchers working with different methods. Creswell and Plano Clark (2011) distinguish, among others, a parallel, a sequential and an embedded design. While acknowledging the importance of considering this variety, this chapter follows a simpler taxonomy of mixed methods. Mixed-method studies can be “well balanced”; however, in the empirical practice mixed-method research tends to be built around a foundation that is either statistics-oriented, case study-oriented, or QCA-oriented³. In other words, the combination of methods typically has a starting point or a core perspective that can be used to distinguish between varieties of mixed-method designs – at least in terms of ideal-types. Therefore, after presenting the general principles of mixed methods designs, the chapter proceeds by discussing statistics-oriented, case-oriented and QCA-based mixed methods designs. Their use depends on both scientific and pragmatic considerations. On the one hand, the choice of a design should depend on its adequacy with the research goal of a given study. On the other hand, it is necessarily co-determined by data availability and the researcher’s methodological training and competence.

2 General Principles of Mixed Designs

Mixed-method studies are usually designed to combine methods in two distinctive ways: through the triangulation or through the integration of different methods.

2.1 Triangulation

This type of research design involves the concomitant application of different methods to the study of the very same phenomenon. It mainly corresponds to the (convergent) parallel design mentioned in the previous section, but it can also be conducted sequentially. The “triangulation” in itself consists of the rigorous side-by-

³Qualitative Comparative Analysis (QCA) deserves a separate treatment as it provides a distinctive approach to mixing methods. Please see the chapter by Wagemann and Siewert.

side comparison of different classes of data (i.e., qualitative vs. quantitative) (Webb et al. 1966: 181). This procedure, broadly speaking, is grounded in the idea that different methods shed light on different facets of empirical reality, which cannot be captured by single-method studies (Denzin 1973: 15). The main assumption behind triangulation is that the strengths of one method offset the weaknesses of another one. Triangulation also allows to enrich the explanation of the research problem under investigation and to synthesize or integrate theories that are aligned with particular methodologies (Jick 2008). Thereby, the independent application of different methods, when they deliver the same results, reinforces the confidence in the explanatory model and in the validity of results (Jick 1979). This argument was historically the first and continues to be a common rationale for the use of mixed methods (Clark and Lipset 2001). More specifically, triangulating different data collection methods – such as surveys, experiments and participant observation – allows researchers to cross-validate their evidence and reveal the presence and extent of measurement error, if any. The use of different methods for data analysis enables researchers to develop “well-validated” conclusions, e.g., by comparing statistical results with thematic results from in-depth interviews, or, alternatively, to take the required steps to understand why different methods led to different results (Creswell and Plano Clark 2011).

The contribution by Ayoub et al. (2014) offers an illustration of how triangulation could be applied to the analysis of social movements. In a study of the diffusion of Lesbian, Gay, Bisexual, and Transgender (LGBT) rights, Ayoub et al. focused on the role of transnational channels for the diffusion of norms. In a first step, the quantitative analysis established the relevance of cross-border connections between social movements. The effect of several types of diffusion channels was tested with a statistical analysis, showing that these connections are essential to provide organizational capacity, and, at the same time, enabling socialization processes to groups of LGBT activists that would otherwise lack of resources and cohesiveness. The second step – based on semistructured interviews with different categories of respondents and on participant observation in Poland and Slovenia – was mainly applied to confirm or to question the validity of the large-N analysis, to crosscheck data using different sources, and to ultimately increase the robustness of findings with case-based evidence. This fine-grained analysis clarified the relevance of transnational ties for local actors, e.g., by pointing to the role of international activist meetings and conferences in promoting transnational LGBT activism in Europe; it also delivered additional information to contextualize the findings of the statistical analysis, e.g., with respect to the determinants of variations in local support and opposition to LGBT rights. The downsides of this approach mentioned by the authors consisted in the length of the research process and in the financial burdens associated with it.

2.2 Integration

Integration refers to the explicit use of both qualitative and quantitative methods as non-redundant parts of a single research study. The typical approach to integration is

to connect quantitative and qualitative methods at the outset, when the results of the first phase are used to inform the design and data collection of the second phase, and ultimately produce an integrated data analysis (Clark and Lipset 2001: 40–41). The key difference to triangulation, which aims at comparing methods, data, and inferences, is that integration proceeds through an “inter-meshed relationship” between methods and/or data (Moran-Ellis et al. 2006) so as to produce a unified causal inference (Seawright 2016). The underlying idea is that qualitative and quantitative analysis can be meaningfully and productively “adjoined,” as they are ontologically compatible and epistemologically complementary: for instance, qualitative research can help scholars to build better statistical models, which in turn will strengthen qualitative analysis (Collier et al. 2010). This procedure typically corresponds to a sequential design starting with quantitative analysis and ending with a qualitative study or vice versa (Creswell and Plano Clark 2011). According to Seawright (2016), an integrative multi-method design involves the use of different methods to answer a single research question or to test a single hypothesis. These methods are sequentially combined to produce a unified causal inference, whereby one method is used to establish the final inference, and the other one is applied to prepare, test, qualify or improve the analysis generating this inference. However, integration can also occur through an embedded design, whereby quantitative and qualitative procedures or results are combined through their joint interpretation when the stages of data collection and analysis have been completed (Creswell and Plano Clark 2011).

An example of this approach is the sequential combination of experimental evidence with face-to-face interviews reported by Dunning and Harrison (2010). In a study of cleavages and ethnic voting in Mali, the authors built up an experimental setting to isolate the effects of different dimensions of candidate identity on voter preferences. A number of individuals chosen randomly was exposed to videotaped political speeches and then asked to evaluate various attributes of the candidate giving the speech. The experimental manipulation consisted in the variation of the fictional politician’s last name, allowing Dunning and Harrison to control for ethnicity and for “cousinage” – historical alliances based on shared surnames. To produce the final inference, face-to-face interviews were important in many regards. Ex-ante interviews were used to define the population to be tested and to refine the details of the experimental setting, while ex-post interviews were mainly used to interpret and extend experimental results. In short, the experiment revealed that ethnicity plays a relatively minor role with respect to cousinage, and interviews clarified the motivations for the propensity to support “cousins,” namely the mutual confidence emerging from the ability of “cousins” to warn and sanction one another. The main challenges of this study were related to the logistics of the fieldwork and the application of the experimental protocol, e.g., concerning the possible discrepancy between the treatment assignment and the subjective perception of the assigned condition (cf. the appendix of Dunning and Harrison 2010 for an extensive discussion of these issues).

After having presented these general principles, the next three sections go into the details of statistics-oriented, case-oriented and QCA-based mixed-methods designs.

3 Statistics-Oriented Mixed Designs

In this type of design, statistical analysis plays a prominent role, while other methods are used to complement or to refine the analysis, either by purposively selecting cases to be studied in-depth or through random case selection. The former procedure is much more common in the practice of empirical research, but the latter deserves to be mentioned, as it implies a quite different logic of mixing methods.

3.1 Statistics and Purposive Case Selection

The most prominent research design of this type is the so-called “nested design” (Lieberman 2005), which is sequential and integrative. The standard nested design is as follows: First, statistical analysis is applied to a large sample in order to identify correlations and to test some preliminary explanatory models. Then, this first step is used to inform the case selection for in-depth research, whose aim is to test and validate the statistical analysis, or, alternatively, to understand why the results of the quantitative analysis are unsatisfactory and to produce new theoretical insights that could be used to improve the models. This is done through the close examination of typical cases and outliers. Typical cases – those well predicted by the statistical model – can be studied qualitatively to reinforce confidence in the explanatory model, namely through the identification of process-tracing evidence leading from the cause to the effect of interest. Lieberman (2005) also recommends enhancing analytical leverage by maximising variation on the key explanatory variables. Instead, the study of outliers is particularly helpful to improve the theoretical framework and model-building when the preliminary statistical analysis did not yield conclusive results. In this case, the goal is to account for patterns of variations in the outcome. Therefore, unlike the previous strategy, case selection must refer to the dependent variable. Another variety of nested design to be mentioned is case-study based. The basic principle is to start with an exploratory within-case analysis and then seek to develop a general model to be tested with a large-N analysis (Rohlfing 2008).

An example of nested strategy can be found in Coppedge (2005). His study provides an explanation of the democratic deterioration of Venezuela using a combination of case study and quantitative analysis. First, the author situated Venezuela in a comparative historical perspective, estimated the impact of several explanatory factors, and identified the points that were not well explained by these general factors. Secondly, he applied case study methods to provide additional explanations for these residuals. Thereby, the explanatory model built around macro-level arguments about the economic decline and the growth of corruption in an oil-based economy was complemented with fine-grained evidence about the responsibility of political parties and civil-military relations. The application of a mixed-method perspective allowed the author to concentrate his in-depth research on the cases that were the most theoretically fruitful, and at the same time to make sense

of unexplained variance in the statistical analysis, which would have been otherwise treated as “noise.”

3.2 Statistics and Random Case Selection

Statistics and case selection can also be combined in a sequence where the former is used to identify empirical regularities and the latter to assess the competing explanations of these regularities. The strategy to achieve this type of research design is close to the general principle of triangulation. The key principle is the random selection of cases for post-estimation narrative development (Fearon and Laitin 2008). This means that cases – considered as narrative accounts of the process leading to the outcome with a special focus on the proposed causal factors – are selected from a list of pertinent instances through a random number generator. In this way, the researcher is expected to be protected against systematic bias in case selection. At the same time, stratification can be used to improve the representativeness of the selected cases. Through this procedure, it is possible to assess the plausibility of statistical regularities and in particular to discriminate between observationally equivalent statements. Afterwards, the researcher can come back to the large-N analysis with new insights and refine the analysis. However, given the requirements of random selection, this method is only suitable when the cases to be studied in-depth correspond themselves to a medium-N sample.

4 Case Studies-Oriented Mixed Designs

A case study is “an intensive study of a single case or a small number of cases which draws on observational data and promises to shed light on a larger population of cases” (Gerring 2017a: 28). As case study research is usually based on rich empirical data, it displays a huge propensity for the use of mixed methods (Kitchenham 2010), so as to extend and generalize the findings from in-depth research, or, conversely, to guide the selection of specific cases to be investigated in detail. The main varieties of case study research to be considered are those based on the analysis of variations and those based on the analysis of mechanisms.

4.1 Within-Case and Cross-Case Analysis

A first variety of case-oriented mixed-method studies is built around a case study whose purpose is to analyze within-case variation, that is, variation at the level of subunits and/or over time (Gerring 2017a, b), combined with cross-case analysis aiming at extending and generalizing the argument to a larger population. A possible research strategy is to start with an inductive “seminal” case study that explores the relevant variables and hypotheses, and then move forward with a large-N analysis. An extreme variant of this strategy can be found in the “grounded theory” approach,

which aims at generating theory from the inductive accumulation of data, without prior knowledge (Glaser 1998, Strauss and Corbin 1997). Another research strategy – which is probably more common in political research – is to systematically select cases from a preliminary large-N analysis or from a pre-existing sample, and then undertake an in-depth within-case study. Specifically, it is possible to maximize analytical leverage through the selection of “special” cases with respect to a broader population (Maggetti et al. 2013). Seawright and Gerring (2008) mention a number of cases providing distinctive analytical leverage: typical cases, extreme cases, deviant cases, and crucial cases (cf. Kühn in this volume for an extensive presentation). The first can be considered a representative instance of a theoretically sound, empirically robust cross-case relationship. Extreme cases are those that display extreme values on the independent and/or dependent variables, while deviant ones are those presenting anomalies with respect to a model or an expected relationship. Crucial cases correspond to most-likely cases, which could be used to disconfirm or challenge theory-based hypotheses, and to least-likely cases, which provide support to confirm or corroborate them. The former are cases that, on all dimensions except the variable of interest, should predict a given outcome, and yet the outcome does not occur, while the latter refers to cases where, on all the dimensions except the variable of interest, the outcome is predicted not to occur and yet it does so.

Levy (2008a) refers to Allison’s (1971) famous study of decision-making during the Cuban missile crisis as a good example of a crucial case design. In his application, Allison framed the crisis as a most-likely case for a rational unity actor model, and respectively, as a least-likely case for alternative explanations based on organizational and governmental politics factors. Then, he showed that evidence contradicted predictions based on the former model while fitting with those based on the latter, providing thus a strong argument in favor of the generalizability of organizational and governmental politics models for explaining foreign policy decision-making. This example clearly shows that the study of “special cases” is a productive mixed methodology – even though some methodological contributions would not treat it explicitly as such. Indeed, the inferential logic of special cases analysis requires a careful and systematic procedure of case selection based on large-N cross-case knowledge, which is usually derived from previous studies, but can also originate from a previous first-hand research.

4.2 Mechanisms

A second version of case-oriented mixed methods is explicitly focused on the study of mechanisms. Following Goertz (2017), the core idea of this design is to provide an explanation of individual outcomes along with more general causal effects identified through cross-case research. This could be done specifically through process tracing (cf. Beach in this volume) or through the application of counterfactual reasoning. Both methods are typically used ex-post, that is, after cross-case studies, and should thereby be considered as mixed methods. In other words: the final inference derives from the conjunction between the insights of macro-comparative cross-case studies –

that usually rely on statistical analysis, but also on Qualitative Comparative Analysis (QCA) – and the insights derived from the analysis of the underlying mechanisms.

The goal of process tracing is to identify the causal mechanisms at work by examining in detail each step of the causal sequence that connects so-called distal causes (i.e., remote, structural explanatory factors) with the explanandum. The researcher should act like a detective, by collecting small pieces of evidence and looking for traces of the hypothesized causal connections within the case under examination (George and Bennett 2005). A causal mechanism is found when each micro-linkage of the causal chain is established and the whole sequence leads coherently and systematically from the cause to the final effect. Process tracing could also allow researchers to deal with micro-macro transitions, which represent one of the most intractable problems in social causal theory, due to the very high number of intervening variables and the intricate epistemological foundations of this kind of inference (Sawyer 2003; Coleman 1990). As an example of its mixed-method character, process tracing can be applied to examine complex causal mechanisms as those hypothesized following a large-N analysis of civil wars focusing on patterns of transnational diffusion (Bennett and Checkel 2014). The fine-grained analysis of sequences of explanatory factors can unveil the causal mechanisms triggering diffusion in the larger population of cases, such as framing, resource mobilization and social learning (Levy 2015).

Counterfactual reasoning is a procedure to examine causes as necessary conditions for their effects, assuming that, if a given cause had not occurred, then also its effect would not have occurred (Woodward and Hitchcock 2003). To sustain this type of proposition, counterfactual reasoning in its purest form corresponds to thought experiments that should satisfy the scientific standards of logical consistency, theoretical validity, and empirical consistency, plus two more specific criteria: the minimal-rewrite rule and the projectability of implications (Tetlock and Belkin 1996). According to the former, the counterfactual scenario in which the cause does not occur and therefore the effect is also absent must be the closest possible to the real world where both do occur, and, importantly, it must be closer to it than any alternative scenario where the cause does not occur but the effect does (Woodward and Hitchcock 2003). The latter refers to the possibility of deriving observable implications from the counterfactual scenario and then assess their plausibility according to contextual historical knowledge. As an example, speculations about the occurrence of World War I if Gavrilo Princip had not shot dead the Austrian Archduke Franz Ferdinand in Sarajevo on 28 June 1914 are consistent with this procedure (Lebow 2000). Counterfactual reasoning – based on non-trivial and plausible counterfactual statements (Mahoney and Barrenechea 2016) – can be used as a mixed methodology when counterfactuals are employed for examining causality in “historical” case studies, especially in those that postulate the occurrence of necessary conditions (Levy 2015, 2008b).

5 QCA-Based Mixed Design

QCA, in a nutshell, is a family of configurational set-theoretic methods for the systematic analysis of causal complexity in terms of necessity and sufficiency (cf. Wagemann and Siewert in this volume). Although they are rarely acknowledged as such in mixed-method textbooks, they provide a distinctive contribution to mixed methodology.

5.1 QCA as Mixed Methodology

QCA has been developed by Charles Ragin and, later, by other colleagues (Rihoux and Ragin 2008; Ragin 1987; Schneider and Wagemann 2012; Thiem and Dusa 2013) with the explicit aim of transcending the quantitative–qualitative divide by bridging case orientation with the capacity of pinpointing cross-case patterns. In this sense, it can be considered as a mixed method per se. This is also the reason why it is discussed here as a separate approach to mixed methods. More specifically, QCA aims at combining the advantages of case-oriented qualitative studies in terms of in-depth knowledge of cases and attention to multiple, singular, or deviant patterns of causation, with the precision, transparency and systematic accuracy of a variable-oriented quantitative approach (Rihoux 2006). QCA can be conceived as both a technique and an approach (Schneider and Wagemann 2010). The QCA technique relates to the analytical procedure based on the construction of truth tables and on logical minimization through dedicated algorithms, whereas QCA as an approach “refers to the processes before and after the analysis of the data, such as the (re-) collection of data, (re-)definition of the case selection criteria, or (re-)specification of concepts” (Schneider and Wagemann 2012: 11). The mixed method orientation of QCA per se resides in QCA regarded as an approach, that is, in the inescapable “dialogue between ideas and evidence” that precedes and follows the “analytic moment” (Ragin 2008).

5.2 QCA and Case Studies

In addition of being an approach that incorporates both qualitative and quantitative insights, a QCA study can be combined with case studies to be executed before, or, more frequently, after the analysis. The first main variant of this mixed method strategy is a case study after a QCA analysis of necessity (Rohlfing and Schneider 2013). In this context, typical cases to be selected are those that conform the most to the set-theoretic relation of interest, that is, that have full membership both in the necessary condition and in the outcome. In an example reported by Schneider and Rohlfing (2013) focusing on the determinants of incremental trade policy change in Central and Latin American countries between 1970 and the early 2000s, the condition “positive growth” is close to the threshold for being considered necessary. In that regard, Peru (1985–1990) is a typical case, as it has a very high degree of

membership both in the condition and in the outcome. The “most deviant” cases, instead, are those with full membership in the outcome but not in the necessary condition. This is indeed a peculiar situation, as necessary conditions are by definition those that need to be always present for an outcome to occur. The second main variant pertains to the analysis of sufficiency (Schneider and Rohlfing 2016). Similar to the previous one, typical cases are those that have full membership in the sufficient term and in the outcome, representing the best possible empirical instance for explaining how the term leads to the outcome. Conversely, the ideal deviant case is one that has full membership in the sufficient term, but no membership in the outcome. This is at odds with the definition of sufficiency, which implies that the outcome is always present when the sufficient term is present. This research strategy is truly mixed as it combines in a unified analytical framework cross-case inferences – from QCA – with within-case inferences – from case studies.

6 Advantages and Limitations of Mixed Designs

Some distinctive advantages of mixed method designs have been mentioned in the introduction, namely the possibility of combining the respective strength of qualitative and quantitative analytical procedures, that is, in-depth case knowledge with generalizable insights derived from cross-case evidence. In addition, mixed methods are supposed to provide (more) valid and reliable results as evidence originates from different sources and findings are based on separate analytical procedures (Creswell 2013). However, they also come with a number of limitations (Teddlie and Tashakkori 2003; Malina et al. 2011), which can be subsumed under the following three broad categories: incompatible ontological and epistemological assumptions, conceptual heterogeneity, and practical and logistical concerns.

First, some scholars have pointed to the fact that qualitative and quantitative methods are based on incompatible assumptions, and therefore cannot be meaningfully mixed in a single inferential framework. For instance, Beck (2006) argued that qualitative data cannot be properly “adjoined” to data set observations, that is, that the former do not provide additional leverage for improving inference derived from the analysis of the latter. This criticism has been successfully rebutted by observing that qualitative and quantitative methods are not used to answer to exactly the same question, and therefore should not be directly compared; instead, they should be combined by using their respective strengths in a complementary way (Seawright 2016, Collier et al. 2010). However, it is important to recognize that, in order to be able to reconcile different methods in a unified framework, researchers should be ready to relax some ontological and/or epistemological postulates underlying each research tradition, by adopting a certain degree of analytical eclecticism (Sil 2004). For instance, mixing methods may require accounting for both probabilistic and deterministic causal relations, albeit at different levels of analysis.

Second, as a matter of fact, there is still little agreement about terminology and key concepts. Typologies of mixed-methods designs are indeed numerous, extensive, and very diverse (Johnson and Onwuegbuzie 2004; Tashakkori and Creswell

2007; Leech and Onwuegbuzie 2009). The expression “mixed methods” itself is used to convey different meanings, such as: the use of two or more methods, no matter if qualitative or quantitative, in a single research study; the use of both qualitative and quantitative methods in a research project; the combination of qualitative and quantitative methods in a given study to produce a unified inference; and even the use of different methods in multiple studies within a common overarching framework. Variety is certainly fruitful to promote pluralism and innovation. However, an excessive heterogeneity may limit the potential for communication and coherent methodological development.

Third, mixing methods implies practical and logistics concerns. These concerns include the time and effort required by learning, mastering and applying different methods, and the difficulty of condensing a composite research design within the word limits required by most journals. At the end of the day, designing research necessarily implies a number of trade-offs (Maggetti et al. 2013). These trade-offs correspond to choices between mixed and non-mixed designs, and between different types of mixed methods. The right balance cannot be decided ex-ante, but should be struck by each researcher making coherent, transparent choices in accordance with her research questions and research goals, as well as by considering practical concerns.

7 Conclusion

Mixed methods are a powerful means to design research that combines the respective strengths of qualitative and quantitative analytical procedures, for which the whole is expected to be more than the sum of its parts. The advantages of qualitative research are in-depth case knowledge and a focus on complex causation, while quantitative research excels in identifying cross-case causal relations that can be generalized to some extent. A successful mixed design should enable researchers either to cross-validate their evidence and strengthen the validity of their findings (by triangulating different methods), or to produce richer causal inferences under a unified analytical framework (through the integration of methods).

Different strategies are possible, depending on the research goal of a given study, but also following data availability and the researcher’s background in data analysis. Three variants of mixed method studies have been discussed: statistics-oriented, case-oriented, and QCA-based mixed-methods designs. The first mainly aims at building, validating or refining a statistical model through purposive or random case selection for in-depth case study. The goal of the second is to analyse special cases derived from previous large-N analysis to understand within-case dynamics and to uncover the causal mechanisms at work. Thirdly, while being considered a mixed methodology per se, QCA as an approach could also be combined with case studies to examine cases that display a typical or, respectively, a deviant pattern, and therefore make the most of the “dialogue between ideas and evidence” (Ragin 2008), that lies at the heart of QCA.

Mixing methods comes at a cost, as their application requires to relax a number of ontological and epistemological assumptions, as their conceptual foundations are consolidated only to a certain extent, and as they imply practical and logistics concerns. On the other hand, besides providing additional analytical leverage – a crucial benefit that alone could justify the use of this type of design – mixed methods also have the merits of bringing paradigmatic wars to an end, or at least of giving peace a chance. Moreover, they are in line with current developments in the conduct of research in the social sciences, where projects are more and more accomplished in collaborative teams wherein methodological competencies can be pooled and exchanged in a virtuous way.

8 Selected Literature

The following references provide general introductions to mixed-methods: The four-volume set by Bryman (2006b) provides a wide coverage of the epistemological and ontological debates surrounding quantitative and qualitative research, the combination of different methods within quantitative research and within qualitative research, the main methodological issues involved in combining quantitative and qualitative research, and the different ways in which mixed-methods research is practically achieved, including several examples. A very good introductory handbook is Tashakkori and Teddlie (2010) who surveys different perspectives and approaches to mixed methods. It also discusses the strengths and weaknesses of mixed-methods designs, provides guidance for collaborative research, and offers many examples in a vast array of disciplines, e.g., health sciences, education, nursing and psychology. The book by Creswell (2013) presents and compares qualitative, quantitative, and mixed-methods research designs. It starts with their underlying philosophical assumptions and then it discusses the key elements of their respective research processes, including practical and ethical questions. A similarly volume is provided by Plano Clark and Ivankova (2015) which introduces an applied approach to mixed-methods research and elaborates on the different perspectives, definitions and variants of mixed-method designs.

New mixed-methods introductions with a focus on political sciences are the volumes by Seawright and Goertz. The book by Seawright (2016) provides a systematic approach for the design of multi-method research. The main argument is that methods – including regression, matching, and natural experiments, and, respectively, process tracing, the use of causal process observations, and comparative case study research – can be fruitfully combined through an integrative framework in order to produce a unified causal inference. Goertz (2017) offers a comprehensive approach to multimethod and case-study research, with a special attention to qualitative methods. The author proposes a systematic, integrated approach based on the interplay between the study of causal mechanisms, cross-case causal inference, and within-case causal inference.

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