Qualitative Comparative Analysis vis-à-vis Regression*

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Discussions of Charles C. Ragin’s Qualitative Comparative Analysis (QCA) have not adequately considered the assumptions about causation on which this method depends. Yet in evaluating any method, it is important to ask the question: How many untestable, or hard-to-test, assumptions must be met for us to believe the findings it produces? Advocates of QCA claim that one of its major strengths is that it requires fewer restrictive assumptions than techniques such as regression analysis. Hence, close assessment of the assumptions that are entailed is particularly salient to evaluating QCA. This article addresses these issues by considering three of the most important kinds of assumptions discussed in the context of regression analysis: assumptions about the correct form of the relationship, missing variables, and inferring causation from association. For each assumption, the role of corresponding assumptions in QCA will be explored and illustrated through an analysis of left-party electoral fortunes in Latin America. Regarding the correct form of causal relationships, QCA in effect builds highly demanding assumptions into measurement procedures. Concerning missing variables, whereas earlier versions of QCA require a strong assumption of no causally relevant missing variables, more recent procedures allow some kinds of missing variables, but build in mutually contradictory statistical assumptions about those variables. Resolving these contradictions essentially converts QCA into all application of regression analysis. Regarding the process of inferring causation from association, QCA makes causal inference on the basis of patterns of association purely by assumption. That is, association is assumed to have a one-to-one relationship with causation. For all three groups of assumptions, QCA is found to require assumptions that are at least as restrictive as those employed in regression analysis.

Introduction

This article proceeds from the belief that discussions of Qualitative Comparative Analysis (QCA) have made a major contribution to methodology in the social

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sciences by raising important issues of research design and analysis. In particular, Charles C. Ragin’s (1987, 2000) work on this technique has made a fundamental contribution to the comparative social sciences. For these reasons, as well as because it has influenced a growing number of researchers, QCA deserves close scrutiny.

QCA commands wide attention in part because some of its features fit quite closely with standard qualitative intuitions about causal inference. In particular, this approach more directly captures the idea of placing central analytic emphasis on comparing different types of cases, while de-emphasizing analysis of abstract variables in isolation from the cases that they describe. Writings on QCA have likewise pushed many scholars to pay more attention to the potential importance of interaction terms in causation. Research in the QCA tradition has therefore had a markedly positive effect on social science methodology.

In addition to raising these important themes, Ragin has presented QCA as a powerful tool for causal inference. One of the most frequently discussed and potentially most important bases for this claim is that this approach is said to rely on fewer restrictive assumptions about the causal processes under study. For example, Ragin argues that QCA avoids the “homogenizing assumptions” or “simplifying assumptions” behind regression analysis and other statistical techniques (e.g., Ragin, 1987: x, xii, 32, 61–64, 103, 105, 166; 2000: 23, 120, 332). Likewise, the approach is said to make “no assumptions about the empirical scope or power of the causes examined in social research” (Ragin, 2000: 103). Such assertions are compelling because they promise an alternative, in nonexperimental contexts, to mainstream quantitative analysis that avoids the major weakness of that approach: i.e., untested analytic assumptions (Collier, Brady, and Seawright, 2004). Indeed, if Ragin’s claim is correct, it may be a strong argument in favor of replacing regression analysis and related techniques with QCA.

However, as I will argue in this article, the claim that QCA depends on fewer and less-restrictive assumptions than quantitative analysis proves to be, in many respects, false. In attempting to substantiate this counterclaim, I will compare this approach with its major practical competitor as a tool for cross-case analysis in the social sciences: regression analysis. The two traditions will be evaluated through considering the most important restrictive assumptions actually employed in regression analysis—and then exploring the relevance of similar assumptions in QCA. Along the way, I will highlight several points of convergence between QCA and regression analysis. In particular, I will show that resolving contradictions among the assumptions involved in fitting some QCA models can in fact convert QCA into regression analysis.

As is well known, the quality of the inferences that can be drawn from regression analysis depends on the plausibility of several assumptions. Furthermore, the fact that these assumptions are routinely made with no supporting evidence makes them perhaps the major obstacle to credible causal inference in the social sciences (Leamer, 1983). Prominent among these are the assumption that the model has the correct functional form (often this involves an assumption of linearity, even though regression analysis can incorporate some forms of nonlinearity; see Kennedy, 1998: 96–99); the assumption that relevant omitted variables are uncorrelated with included independent variables (also called the assumption of exogeneity; see Kennedy, 1998: