Qualitative Comparative Analysis and Participation Research: Applying QCA to existing small-N comparisons

Abstract:

This paper provides a discussion of the comparative advantages of using QCA alongside more traditional small-N methods for typology construction and uncovering causal relationships. Drawing on substantive research in the emerging field of participatory democratic innovations, the paper presents a QCA analysis of the conditions for empowered participatory governance in Brazil, using the same cases and conditions as Brian Wampler in his comparison of Brazilian participatory budgets (2008). The paper shows that QCA can provide significant added value to interpretations and explanations of case-researchers using traditional tools in comparative methods. The analysis shows that causal explanations of empowered participatory governance and its negation are multiple and cannot be explained by isolating causal conditions. It discusses the consequences of combining tools and approaches and makes recommendations for future use of QCA as a tool for unpacking relations between participatory and deliberative innovations.

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Introduction: QCA as a case-based comparative method for small-N research

Qualitative Comparative Analysis (QCA) as an approach has been at the forefront of a wave of methodological reasoning which moves beyond unhelpful distinctions between, on the one hand qualitative and quantitative and the other theory and its practical application, which have hindered the advancement of social research. The attractiveness of QCA as both a critical methodological approach and a novel set of techniques has led to its application across an ever-expanding group of diverse disciplines and subdisciplines in the social sciences (Thiem and Dusa, 2013: 2). It has not yet been employed extensively in the field of participatory and deliberative democratic innovation. While welcoming recent advances in the application of QCA as a methodological approach to large-N studies, this paper seeks to return to a discussion of its application at the level of small-N. By applying QCA to existing small-N comparative research I seek to provide an enlightening exemplar of the potential of its added value for small-N researchers, particularly in emerging subdisciplines such as the analysis of democratic innovation.

Most introductions to using QCA in the social sciences are careful to point out the case-oriented nature of the method and emphasise its advantages for small-to-medium N comparison (Ragin 1987, Berg-Schlosser et al 2009, Rihoux and Lobe 2009). Case-based methods vary in the tools they employ and the number of cases they compare, but they hold in common an understanding of social research that is sensitive to the complexity of the case and the scope of generalisations (c.f. Ragin and Byrne 2009). To allow for generalisations within a designated scope QCA requires sound theoretical specification of the population of cases and selection of key conditions for comparison. A qualitative comparative analysis can be particularly useful in subfields of political research which have benefited from early and constant conceptual work in organising their scope. Therefore QCA has made a key contribution, for instance, to comparative welfare-state research (c.f. Skaaning et al, 2012).

Scoping the population of cases and conditions of interest is not an easy task in emerging subfields of research. Yet by its nature, a newly-emerging phenomenon will be limited in its scope for comparison to small to medium-N. This is certainly true of participatory democratic innovations such as participatory budgeting which I have studied in greater breadth elsewhere (Ryan and Smith, 2012). The field is overloaded with good case-studies and small-N comparison which rely on in-depth ethnography-based methodologies. This has led to a call for more systematic cross-case comparisons (Smith, 2009). Despite this the rapid diffusion of participatory budgeting has led to increased problematisation and contestation of its core conditions. How then can a researcher adequately scope their population of cases?

One obvious strategy employed in small-N case-comparative research is to limit cases by keeping key variables constant to control extraneous variance. This logic is often applied in area studies or by

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1 I am very grateful to Graham Smith, Gerry Stoker and Brian Wampler for their helpful comments on earlier drafts of this paper.

2 This article presents a pilot-QCA of participatory budgeting in anticipation of a larger-N QCA to come. It discusses some of the issues involved in performing QCA with emerging phenomena. Other innovative attempts to handle comparison of participatory budgets have involved the use of Weberian ideal types (c.f. Herzberg).
limiting comparative designs within one country or system of government (Lijphart 1971: 688). Brian Wampler applies this approach in his distinguished comparison of eight cases of participatory budgeting in Urban Brazil (2007). Yet such small-N research based on researchers’ in depth case-studies is often criticised still because of its subjective bias. Moreover cumulation of small-N research for comparison can be difficult because of researchers’ particular and differing intentions. In Peters’ words sometimes it is argued that ‘the researcher is the major independent variable’ (1998: 156).

Notwithstanding Flyvbjerg’s assertion that this is an essential misunderstanding of case-study research (2006), in this paper I wish to repeat Wampler’s comparative design (controlling even for the researcher). I try to show that fs/QCA can at the very least provide a guide to the selecting the best trade-off between parsimony and explanatory power in small to medium-N case comparisons. The paper therefore directly addresses some of the possibilities of QCA as a deductive tool that aids interpretation where the case-researcher may have his/her face too close to the field or data. In the next section I introduce Wampler’s analysis and provide a fuzzy-set QCA (fsQCA) analysis of the most parsimonious typology he presents in his work.

Comparing Participatory Budgeting in Urban Brazil: Wampler’s 8-case comparison

Brian Wampler’s analysis of eight participatory budgets (PB) in urban Brazil has been a particularly useful contribution for scholars who wish to explain the emergence of emancipatory participatory governance through democratic innovation. It has been commended not only for its attentive and detailed narrative of processes within cases but also its comparative design which moved beyond best-case examples to include variations in outcome and explanatory conditions to explain causation more systematically. Yet, in common with other examples in the emerging field of research on participatory democratic innovations, comparative work up to now has relied on first-hand ethnographic methods of data collection combined with more traditional small-N comparative designs. Researchers often construct typologies, and make claims about necessary and sufficient conditions based on their observations. To test these claims in Wampler’s work, I apply QCA’s systematic approach, calibrating conditions based on the same qualitative descriptions used in the existing comparative study and the same population of cases.

3 I take best care possible to try to make the following sections accessible for small-N researchers new to QCA as well as of interest to those well-versed in the method new to research on participatory politics. I hope that in doing so I avoid falling between two stools.
Analysis

<table>
<thead>
<tr>
<th>Mayoral support for delegation of authority to citizens</th>
<th>CSO’s willingness to use contentious politics</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Porto Alegre 1997-2004, Ipatinga</td>
</tr>
<tr>
<td>High</td>
<td>No case</td>
</tr>
<tr>
<td>Low</td>
<td>No case</td>
</tr>
</tbody>
</table>

Table 1 adapted from Wampler p. 258.4

The table above is adapted from Wampler (2007: 258). It is typical of the kinds of parsimonious typological tables often presented in the findings of small-N comparative work. These tables are often used (incorrectly) as methodological heuristics to make set-theoretic claims of necessity and sufficiency.

Wampler here, in his concluding chapter, places particular emphasis on two explanatory conditions and suggests that Mayoral support interacts with civil society organisation (CSO) willingness to use contentious politics to give four very different types of outcomes: institutionalised participatory democracy (green), informal and contested participatory democracy (yellow), co-opted participatory democracy (blue) and emasculated participatory democracy (red). This type of diagram will be familiar to small-N case researchers. The major advantage of small-N research is underlying familiarity with cases. This allows Wampler to verbally define (what we might call labelling a set) each box in the diagram where we have an empirical example of a case, adding plausibility to the argument: It makes sense that co-optation in participatory programmes can be traced back to low use of contentious politics by CSOs. Prima facie, it would seem fair to conclude that the institutionalisation of deep democracy can only occur where both these conditions are high and that both are necessary conditions for this outcome. A simple correlation between each variable and the outcome deep democracy would be positive.

So what can fsQCA add?

In the following ‘truth table’ we ascribe a fuzzy set membership score of 1 where the condition is observed to be high, 0 where the presence of the condition was observed to be low, and 0.51 where the presence was observed to be medium. The outcome ‘deepened democracy’ is coded as 1 for

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4 There are in fact ten cases in this table as Wampler suggests a qualitative distinction between cases in Porto Alegre over time.
institutionalised participatory democracy (green), 0.51 for informal and contested participatory democracy (yellow) and co-opted participatory democracy (blue), and 0 for emasculated participatory democracy.

Table 2: showing screenshot from fsQCA2.5 of fuzzy set membership scores ascribed.

Ragin shows that relationships of necessity and sufficiency between causal conditions and outcomes are set-theoretic. For necessity to be established the set of cases containing the outcome must be a subset of the set of cases displaying the cause. Similarly, for sufficiency to be established the set of cases containing the causal condition must be a subset of the cases displaying the outcome (c.f. Ragin, 2000: 214-217). When we run an analysis for necessary conditions we get the following output:

<table>
<thead>
<tr>
<th>Case</th>
<th>casd</th>
<th>ms</th>
<th>cwcp</th>
<th>deepd</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Belo Horizonte</td>
<td>0.51</td>
<td>1</td>
<td>0.51</td>
</tr>
<tr>
<td>2</td>
<td>Blumenau</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Ipatinga</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Porto Alegre i</td>
<td>0.51</td>
<td>1</td>
<td>0.51</td>
</tr>
<tr>
<td>5</td>
<td>Porto Alegre ii</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Porto Alegre iii</td>
<td>0.51</td>
<td>1</td>
<td>0.51</td>
</tr>
<tr>
<td>7</td>
<td>Recife</td>
<td>0.51</td>
<td>1</td>
<td>0.51</td>
</tr>
<tr>
<td>8</td>
<td>Rio Claro</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>Sao Andre</td>
<td>0.51</td>
<td>0</td>
<td>0.51</td>
</tr>
<tr>
<td>10</td>
<td>Sao Paulo</td>
<td>0.51</td>
<td>0</td>
<td>0.51</td>
</tr>
</tbody>
</table>

Table 3 shows analysis of necessary conditions.

Users familiar with fsQCA will be aware of the logical mathematical property of fuzzy sets whereby 0.5 memberships creates analytical difficulties. This is because it places the case in a logical limbo where verbal and formal logic are difficult to reconcile. One might in any case observe that the use of the word ‘medium’ by Wampler does not necessarily indicate halfway. Equally the word ‘low’ is hardly commensurate with the idea of complete nonmembership of a set. However for the purposes of this example we can say that the researcher has made a qualitative distinction of an ordinal kind which can be represented by a fuzzy set. Therefore small changes in the membership value will not fundamentally affect the subset/superset relations in QCA analysis.

In the language of QCA ~ signals absence (negation) of a condition.

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6 In the language of QCA ~ signals absence (negation) of a condition.
We see that in a necessity analysis of 10 cases mayoral support (ms) is fully consistent, indicating that it is a necessary condition for deepening democracy. Moreover the negation of mayoral support would seem equally necessary to negate the deepening of democracy (This result is logical because their values are equal in every case). Nevertheless CSO willingness to use contentious politics does not seem to be necessary for deepened democracy. When we examine the cases we see that this is because in both Santo Andre and Sao Paulo there is some degree of deepening democracy (Wampler acknowledges this when he makes the qualitative distinction between co-opted and emasculated democracy) yet low or no evidence of CSO willingness to use contentious politics.

When we analyse for sufficiency we get the following result:

<table>
<thead>
<tr>
<th>Outcome tested</th>
<th>Causal conditions</th>
<th>Raw Coverage</th>
<th>Unique Coverage</th>
<th>Consistency</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>deepd</td>
<td>ms</td>
<td>1.000000</td>
<td>1.000000</td>
<td>1.000000</td>
<td>1.000 (Cove)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.000 (Cons)</td>
</tr>
<tr>
<td>~deepd</td>
<td>~cwcp</td>
<td>0.603239</td>
<td>0.603239</td>
<td>0.745000</td>
<td>0.603 (Cove)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.745 (Cons)</td>
</tr>
</tbody>
</table>

Table 4 shows analysis of sufficient conditions. In other words the QCA analysis highlights that given the measures Wampler employs and the evidence he presents, the argument he could or perhaps should be making is that mayoral support is both necessary and sufficient for deepening democracy through participatory democracy. The absence of mayoral support is necessary for the absence of deep democracy but no conditions tested seem sufficient to negate deep democracy (the absence of contentious politics is not highly consistent with a sufficiency subset relationship for ten cases at 0.745). We may conclude that QCA has added some value to the analysis and forces us to think about what substantive conclusions on causation of the phenomena are suitable.

Note that the result is a function of the measurement Wampler chooses. If he had observed that some of the cases were in a half-way house rather than merely low or high in terms of the observance of contentious politics the result would be much different. However, he must have been confident that the degree of difference could be captured parsimoniously in terms of a simple high or low distinction; otherwise he would have offered a greater range in describing the variance in the condition.

One might contend that the measures taken here for the outcome set are simplistic. The point I want to make though is that it may only be the undertaking of this analysis which highlights this

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7 Consistency is a measure of how constant the subset-superset relationship which indicates logical necessity (or in the case of sufficiency analysis logical sufficiency) is across the cases observed. See Ryan and Smith 2012 for further explanation (paper available on request from author).
8 There is no difference in this analysis between parsimonious and complex solutions. Consistency threshold is 1 for the outcome and 0.96 for the negation.
state of affairs. Rihoux and Lobe have shown that a stepwise QCA approach properly applied allows an iteration between maximal parsimony and complexity which arrives at a greater explanatory power (2008: 238). What this analysis of Wampler’s typology shows is that applying QCA tools to existing research and its conclusions can highlight an overly parsimonious conclusion.

**Extending the analysis: Bringing complexity back in.**

The above discussion is based on analysing Wampler’s most parsimonious conclusions only and not explicitly delving fully into his richer descriptions of the cases. An advantage of small-N research is that while it may often conclude by extracting what the researcher feels are the two or three most important explanatory conditions it can, in its rich case description, elucidate the trail of relations and processes involving other or secondary conditions. In some large-N statistical analysis these details of interactions may be overlooked as the compound variable is often unrecognisable from its elemental beginnings. Wampler details any number of potential influencing conditions from which other hypothesis may be formed and tested, including population size, social backgrounds of PB delegates, higher human development index (HDI) scores, etc. (at one point he actually suggests cities with greater HDI are more likely to be left-leaning, have broad-based CSO activity and a firmer financial base on which to administer PB, advising that it may play a role as a result of mediating variables). In his chapters describing each case however he highlights and details, in particular, mayor-legislative relations, the financial basis for implementation of the programme, and the rules of the game as influential in determining the depth of democracy coming out of PB processes. He, in fact, affords rules of the game the same primacy as CSO activity and Mayoral support, although as we shall see operationalising it as a variable in comparative analysis is a little trickier than the others, which is possibly why he does not highlight it as much as the latter two.

The strength of traditional qualitative small-N research vis-a-vis cross-sections or QCA is that it is not static and it is fluid - surely this is also its weakness. A case-researcher submerged in subjective determination of causal processes is in some ways less well-placed to make hands-off, ‘deductive’ judgements about how variables combine. While Wampler in his fine study of PBs may suggest that based on his case-knowledge the other three conditions are important but secondary in the story to the two first discussed, in a QCA we can transparently analyse all possible combinations of the five conditions (including logical remainders\(^9\)) on an equal footing and examine the causal paths sufficient for the outcome based on logical combinations of set relations across cases.

**Defining conditions and calibrating sets.**

In this section I briefly explain Wampler’s conditions and provide details of how sets of conditions are calibrated for the ensuing analysis. The section draws heavily on his theoretical justifications for highlighting these conditions. For set-theoretic analysis of necessary and sufficient causation, sets require proper names. Therefore we can speak firstly of the outcome, the set of empowered participatory governance or ‘Deepened democracy’. Deep democracy is seen where PB programmes result in open, equal and meaningful participation of large numbers of ‘ordinary citizens’, and where

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\(^9\) These are combinations of variables for which we do not have an empirical case, (we could call them counterfactuals).
the PB overtakes previous clientalistic practices as the main method for citizens and civil society to negotiate and realise budget priorities.

In explaining how PB programmes can achieve deep democracy Wampler puts forward five key causal conditions. The first is ‘High Mayoral support for PB’. Mayoral support is vital because decision-makers “must be willing to spend scarce resources” (Wampler, 2007: 36). There may be instrumental reasons for high mayoral support of PB programmes (as a signalling device to gauge citizen preferences, or as a political party support-building measure) as well as ideological. In the Brazilian context mayoral support is taken to be key to outcomes because strong mayoral support can lead to implementation of projects allowing demonstration effects (c.f. Abers 1998) which increase institutionalisation of PB and reorganisation of the bureaucracy to administer PB constructively.

The second explanatory condition set is that of ‘Strong civil society’. Strong civil society can cooperate in deliberative forums but contest information and vigorously defend their rights using contentious forms of political action (Wampler, 2007: 38). The types of activities CSOs are willing to engage in can often be explained by the historical density of CSO organisations in a municipality (ibid). Note: this is in reality a logical AND combination of contentious and cooperative politics in CSOs – it would be more transparent to calibrate and calculate the intersection of both sets but here I do this implicitly (i.e. in calibrating I do not compromise high contentious politics for low cooperation and vice-versa).

For various situational and political reasons rules vary from one programme to another. We can talk of the set of ‘Rules that delegate authority’ where rules allow citizens accountable and direct decision-making which can incentivise greater and more meaningful participation. According to Wampler “the unintended consequence of unclear rules is a limited delegation of authority” (ibid: 39). Combining rules in an explanatory model with the role of actors (using QCA which explicitly investigates conjunctural causation) is important if we believe that institutions influence actors and actors influence institutions.

Wampler emphasises throughout the combinatorial effects of conditions and how one condition may limit the degree to which any combination can be effective in deepening democracy through participation. This is why the analysis may suit itself to QCA and fuzzy sets. One example is the extent to which a Mayor’s strategy is conditioned by the existence of a ‘Positive legislative environment’. The legislative environment is less favourable to an outcome of deeply democratic PB when the mayor implementing the programme does not have a broad base of support and must spend political capital shoring this up (ibid: 40). Wampler suggests that this positive environment is a necessary but not sufficient condition for deep PB (as the mayor may still not wish to delegate authority even with legislative support but will find it difficult to delegate without). Wampler’s descriptions also suggest that this condition could highlight asymmetric causation and multifinality.

\[\text{Asymmetric causation (the negation of the outcome must be explained independently and cannot be explained by a decrease in the independent variable that explains the outcome) and multifinality (that the same condition can lead to alternative and sometimes contradictory outcomes) are causal assumptions allowed in QCA that can often be restricted or removed by the tools employed in traditional large-N studies (c.f. Wagemann and Schneider).}\]
when he outlines that in the case of Santo Andre, a highly supportive legislature can incentivise the
Mayor to engage in many other projects, undermining the importance of PB (ibid: 209).

Finally, the ‘financial basis for spending’ i.e. the availability of significant funds for new capital
investment is also, he holds, necessary but not sufficient for PB to work effectively. This is because
limited spending ability limits the power of programmes where authority is delegated to citizens.

After enumerating these conditions Wampler contends that his explanations of cases will show that
“it is necessary for a PB program to have positive results in each area to produce a successful PB
program” (ibid: 41, my emphasis). Note that these claims differ quite markedly from the
parsimonious claims that make up the typology discussed earlier. We aim to test Wampler’s more
complex claim, basing our calibration of conditions on the narrative he provides and using fsQCA.

First we need to calibrate sets and ascribe case membership in each case. A good starting point is to
outline the verbal meanings we ascribe to set membership. In this case the following 7-value fuzzy
set is used.

1.0 - ‘Fully in’ (the set)
0.83 - ‘mostly but not fully in’
0.67 - ‘more or less in’
0.52 - ‘marginally more in’
0.48 - ‘marginally more out’
0.33 - ‘more or less out’
0.17 - ‘mostly but not fully out’
0 - ‘fully out’

This seems a feasible level of nuance to justifiably extract from the qualitative information in
Wampler’s book. He provides at least a few hundred words (and often a lot more) of descriptive
information on each condition for each case. This rich description is necessary for an ontologically
sound QCA. Wampler’s evidence is particularly useful because he often triangulates evidence from
interviews (i.e. subjective determinations of say, mayoral support) with symptomatic indicators of
degrees to which a condition is observed (e.g. in the case of mayoral support, implementation rates
of PB projects and their prioritisation vis-à-vis projects decided on through other channels).

The following truth table provides a picture of my efforts to calibrate these conditions as rigorously
and objectively as possible given my reading of the evidence presented in Wampler’s book. The
abbreviated conditions in table 3 below are mayoral support (ms), civil society using contentious and
cooperative politics (ccp), a positive legislative environment (ple), the financial basis for spending
(fbs) and rules that encourage participation (rep).

11 At this point I should make clear that while I claim to ‘control for the researcher’ in my application of QCA to
Wampler’s cases and not others, I cannot make any exceptional claims to being able to control the ever-
present problems for researchers interpreting one another’s findings.
I make some changes (which could be debated) from the earlier calibration based on my reading of the ‘thicker’ case descriptions. For instance, Sao Paulo and Ipatinga’s ccp scores are on opposite sides of the crossover point to the truth table in the first analysis described above. In calibrating the outcome, deep participatory democracy (deepd) I make some small changes. It is conceptually sound that Wampler’s ‘co-opted PB’ is marginally more out of the set of deep democracy while ‘contested PB’, which at least has democratic inputs if the outcomes are not always implemented, is marginally more in the set. This leads these cases to fall either side of the crossover point in the outcome set based on their correspondence with the verbal logical statements outlined above.

<table>
<thead>
<tr>
<th>CaseID</th>
<th>ms</th>
<th>ccp</th>
<th>ple</th>
<th>fbs</th>
<th>rep</th>
<th>deepd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belo Horizonte</td>
<td>0.33</td>
<td>1</td>
<td>0.52</td>
<td>0.83</td>
<td>0.48</td>
<td>0.52</td>
</tr>
<tr>
<td>Blumenau</td>
<td>0.17</td>
<td>0.33</td>
<td>0.17</td>
<td>0.67</td>
<td>0.67</td>
<td>0</td>
</tr>
<tr>
<td>Ipatinga</td>
<td>0.83</td>
<td>0.33</td>
<td>0.67</td>
<td>1</td>
<td>0.52</td>
<td>1</td>
</tr>
<tr>
<td>Porto Alegre i</td>
<td>1</td>
<td>1</td>
<td>0.52</td>
<td>0.33</td>
<td>1</td>
<td>0.52</td>
</tr>
<tr>
<td>Porto Alegre ii</td>
<td>1</td>
<td>1</td>
<td>0.83</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Porto Alegre iii</td>
<td>0.48</td>
<td>1</td>
<td>0.67</td>
<td>1</td>
<td>1</td>
<td>0.52</td>
</tr>
<tr>
<td>Recife</td>
<td>0.67</td>
<td>1</td>
<td>0.52</td>
<td>0.17</td>
<td>0.33</td>
<td>0.52</td>
</tr>
<tr>
<td>Rio Claro</td>
<td>0.17</td>
<td>0.17</td>
<td>0.17</td>
<td>0.67</td>
<td>0.17</td>
<td>0</td>
</tr>
<tr>
<td>Santo Andre</td>
<td>0.67</td>
<td>0.52</td>
<td>0.83</td>
<td>0.33</td>
<td>0.33</td>
<td>0.48</td>
</tr>
<tr>
<td>Sao Paulo</td>
<td>0.33</td>
<td>0.67</td>
<td>0.33</td>
<td>0.33</td>
<td>0.48</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Table 5 showing fuzzy membership as calibrated for more complex analysis.

The first thing we notice is that cases do not group together in the same logical combinations of presence and absence of conditions as they do in Wampler’s more parsimonious table above, so we will expect a more nuanced explanation involving alternative causal paths.

As these measures are based on my interpretation of text and not on a ranking systematised by Wampler as in the earlier analysis, it is also pertinent to make some comments on the difficulties involved in calibrating conditions to allow for transparency for those wishing to repeat the analysis. The rules-based condition was particularly difficult to calibrate because it requires some subjective interpretation of how even small changes in basic rules may affect participant strategies. This is often tricky to separate from outcomes in the process of PB. As rules are, in the Brazilian case, often set by the mayor, they may be better conceived of as a symptom of that support. The financial basis condition also requires decisions on how to weigh absolute and relative financial strength which could be open to challenge.

**Analysis**

The penultimate section of the paper now presents the analysis of necessity and sufficiency and discusses some of the implications of using QCA where case selection is limited by other researchers’ comparative design. An interesting consequence of the high controls involved in a case-researcher’s
comparative design can be high levels of necessity consistency which can lead to a variety of difficult questions surrounding the interpretation of necessary conditions and their consequent impact on sufficiency analysis. With notable exceptions (c.f., Goertz: 2003, Mendel and Ragin: 2011, Bol and Luppi: 2011), QCA scholars have been less keen to provide guidance for others on how to interpret some of these issues.

We are particularly interested in Wampler’s claim that all five conditions identified are necessary for the outcome and at a positive legislative environment and financial basis for support of PB are necessary but not sufficient. This implies that he believes the other three causal conditions are both sufficient and necessary. On my reading this kind of conclusion would set alarm bells ringing for researchers trained in QCA, because if all five conditions are necessary the idea that two or three could be of themselves sufficient seems illogical. Without any tool to analyse the consistency of this claim case-researchers are disincentivised from problematising the combinatorial relationships between variables. Moreover, the analysis shows QCA approaches can at the very least force researchers to think of the consequences of such conclusions and the combinatorial logic of necessary and sufficient claims. Following this discussion, I conclude by drawing attention to issues surrounding the use of traditional case-selection logic to limit populations in QCA.

Necessity

I begin with the analysis of necessity as is best practice. The output of the analysis of necessary conditions based on the fuzzy truth table presents as follows:

<table>
<thead>
<tr>
<th>Conditions tested</th>
<th>Consistency</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ms</td>
<td>0.890873</td>
<td>0.794690</td>
</tr>
<tr>
<td>~ms</td>
<td>0.867063</td>
<td>0.622507</td>
</tr>
<tr>
<td>ccp</td>
<td>0.293651</td>
<td>0.496644</td>
</tr>
<tr>
<td>~ccp</td>
<td>0.293651</td>
<td>0.496644</td>
</tr>
<tr>
<td>ple</td>
<td>0.871032</td>
<td>0.839388</td>
</tr>
<tr>
<td>~ple</td>
<td>0.579365</td>
<td>0.612159</td>
</tr>
<tr>
<td>fbs</td>
<td>0.833333</td>
<td>0.663507</td>
</tr>
<tr>
<td>~fbs</td>
<td>0.430556</td>
<td>0.591281</td>
</tr>
<tr>
<td>rep</td>
<td>0.829365</td>
<td>0.698997</td>
</tr>
<tr>
<td>~rep</td>
<td>0.492063</td>
<td>0.616915</td>
</tr>
</tbody>
</table>

Analysis of Necessary Conditions
Outcome variable: ~deep

<table>
<thead>
<tr>
<th>Conditions tested</th>
<th>Consistency</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ms</td>
<td>0.596774</td>
<td>0.523894</td>
</tr>
<tr>
<td>~ms</td>
<td>0.766129</td>
<td>0.873563</td>
</tr>
<tr>
<td>ccp</td>
<td>0.697581</td>
<td>0.492877</td>
</tr>
<tr>
<td>~ccp</td>
<td>0.465726</td>
<td>0.775168</td>
</tr>
<tr>
<td>ple</td>
<td>0.627016</td>
<td>0.594646</td>
</tr>
<tr>
<td>~ple</td>
<td>0.830645</td>
<td>0.863732</td>
</tr>
</tbody>
</table>
shows which to which they call 'maximisation'. With fuzzy membership data of the kind we have above, this is likely

A analysis including p A area controls. Secondly, t

of the initial case selection strategy which sough

This is challenging for two reasons. Firstly it incentivises the researcher to move away from the logic

the scope of the argument.

Necessary consistency for each individual condition ranges in value for each of the five causal conditions from 0.83 to 0.89. With only ten cases a high threshold of consistency to make claims about necessity is advisable (at least 0.9). However, as Ragin among others repeatedly stresses, the most important test is whether it ‘makes sense’ as a necessary condition (Mendel and Ragin 2011, Ragin 2000). There are a number of strategies the researcher now has open, the consequences of which s/he chooses will affect interpretations going forward.

As any of these conditions could be seen as almost necessary it is best practice to revisit each condition and investigate how the subset relationship is contravened. One contravening fuzzy membership value in a case may require revisiting. For example, the condition relating to civil society only contravenes the relationship in Ipatinga. The case might be argued to be unique in this population of cases as it is a mid-sized city which is not a provincial capital and this is likely to affect the nature of civil society. Therefore, one could make the argument that by dropping the case and adding the conditions ‘large provincial capitals’ to the population definition can limit the scope of the research and then make a claim of necessity within those parameters. The trade off to this is that it would essentially require removing the case from the analysis. In other words one narrows the scope of the argument.

This is challenging for two reasons. Firstly it incentivises the researcher to move away from the logic of the initial case selection strategy which sought to select most different cases within established area controls. Secondly, there is a question as to what to do with this case in the sufficiency analysis? Any necessary condition must be a part of any combination of conditions that are sufficient to produce and outcome. Can we make this claim and then continue with a ‘lopsided’ sufficiency analysis including once again the case?\textsuperscript{12} I return to discuss this question in the conclusion.

A second option would be to use a procedure similar to that put forward by Bol and Luppi (2011) which they call ‘maximisation’. With fuzzy membership data of the kind we have above, this is likely to at least reveal something about substitutability of necessary conditions. This requires asking which unions of two sets are consistent with a necessity subset/superset relation. The table below shows that for all the unions of two conditions necessity consistency ranges from 0.905 to 1.

\begin{table}[h]
\centering
\begin{tabular}{lll}
\hline
    fbs & 0.697581 & 0.546603 \\
\hline
    \textasciitilde fbs & 0.570565 & 0.771117 \\
    rep & 0.689516 & 0.571906 \\
\hline
    \textasciitilde rep & 0.637097 & 0.786070 \\
\hline
\end{tabular}
\caption{Table 6 shows analysis of necessary conditions in more complex analysis.}
\end{table}

\textsuperscript{12} In essence this would involve two separate models one with and without the case, but the question remains as to which one should be emphasised.
Table 7 showing necessity consistency for Boolean sum expressions. ‘+’ denotes logical ‘OR’\(^\text{13}\)

Although 0.9 is of course an arbitrary cut-off for consistency it is fair to say that a few of these expressions are necessary or almost always necessary. One could and possibly should also go on to calculate consistency of the products of these Boolean sums. For reasons of space I will not discuss this here. The crucial point for now is that there are a plethora of potential interpretations of necessity and the trade-offs in choices are not precise or clear.

A third, and essential procedure, is to analyse the data to check if the results are a consequence of its peculiarities and to assess triviality and relevance. For instance particularly in a small-N study of ten cases or less, results may be dependent on a low mean fuzzy membership in the outcome (Mendel and Ragin, 2011: 24) or collinearity of influencing condition and outcome, for example. Moreover it is essential to calculate coverage scores of any potential necessary condition to evaluate its relevance or triviality (Ragin 2008, see also Goertz 2003). In the data used for this study only the possibility of relatively low mean fuzzy membership in the outcome may be a problem. Even then it is not clear-cut and coverage scores for the expressions with high consistency suggest that they are not trivial\(^\text{14}\).

Now, it might be suggested that embarking on such exhaustive analysis may introduce unnecessary complexity, and is a terrific example of the dangers of over-conscious thinking and methodological fetishism. But where there are many necessary conditions this will have strong implications for the interpretation of the sufficiency analysis.

Holding these issues aside, in terms of added-value, we can at the very least say that the necessity analysis has cast some doubt over Wampler’s general contention (within the scope of his population) that all five conditions are necessary for deep democracy. However it is clear that many can in combination be considered substitutable necessary conditions. This adds nuance to the general claim. A researcher can say with a greater degree of certainty based on the QCA necessity analysis that deep democracy cannot be achieved in PB programmes without at the very least a financial basis to spend OR civil society willingness to both struggle and cooperate with government.

\(^{13}\) In QCA notation ‘+’ signifies logical OR (the substitutability of two conditions) while ‘*’ signifies logical AND (the combination of two conditions).
Sufficiency

Results for the analysis of sufficiency are summarised below. For the intermediate solution\textsuperscript{15} we assume that the presence of all conditions in counterfactual cases with the exception of the positive legislative environment (for which we make no directional assumptions), are causally linked with the outcome (deepd).

<table>
<thead>
<tr>
<th>Causal Paths</th>
<th>Raw Coverage</th>
<th>Unique Coverage</th>
<th>Consistency</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complex</td>
<td>~ms<em>ccp</em>ple*fbs</td>
<td>0.404762</td>
<td>0.045635</td>
<td>0.857143</td>
</tr>
<tr>
<td></td>
<td>ms<em>ccp</em>ple*rep</td>
<td>0.690476</td>
<td>0.331349</td>
<td>0.910995</td>
</tr>
<tr>
<td>Parsimonious</td>
<td>ccp*fbs</td>
<td>0.700397</td>
<td>0.007936</td>
<td>0.732365</td>
</tr>
<tr>
<td></td>
<td>ccp*rep</td>
<td>0.791667</td>
<td>0.099206</td>
<td>0.732110</td>
</tr>
<tr>
<td>Intermediate</td>
<td>fbs<em>ple</em>ccp</td>
<td>0.666667</td>
<td>0.045635</td>
<td>0.872727</td>
</tr>
<tr>
<td></td>
<td>rep<em>ple</em>ccp*ms</td>
<td>0.690476</td>
<td>0.069444</td>
<td>0.910995</td>
</tr>
</tbody>
</table>

Table 8 showing results of sufficiency analysis for outcome (deepd). Consistency threshold: 0.81

Imagine the case researcher re-examining their conclusions in light of this QCA analysis. The first interesting result, reading from the most complex solution, is that in a couple of cases the absence of mayoral support can be an INUS condition for deep democracy. This is counterintuitive. If we look at the cases covered by this solution (Belo Horizonte and Porto Alegre iii) we see that these were key cases in the type of ‘informal and contested participatory democracy’ that Wampler imagined, represented in table 1 earlier. Perhaps this type he assumed does indeed exist; however, it required the use of a more complex QCA to identify or describe its key combinatorial components. This may be too much of a jump to make, but it points at the way in which QCA at least can aid a more systematic articulation of the key conditions where a case researcher has already identified important similarities. This suggests that QCA can make a valuable contribution to small-N research and that equally, case researchers could better specify their models by engaging with QCA.

The intermediate solution also can provide comfort and food for thought for Wampler. One of the causal paths, rep*ple*ccp*ms → deepd, which displays strong values of consistency and unique coverage (0.91, 0.69), contains all three of the conditions he desired to say were sufficient for the outcome. Importantly though these are only sufficient in combination when combined with one another, and the positive legislative environment.

Finally, we see that the willingness of CSOs to use cooperative and contentious politics is present in all solutions. This is commensurate with the idea that it is at the very least a substitutable necessary condition.

\textsuperscript{15} In QCA the complex solution makes no assumptions about logical combinations of conditions for which we have no empirical assumptions (counterfactual cases). The parsimonious solution makes whatever assumptions lead to the most parsimonious solution. In the Intermediate solution the researcher holds some theoretical expectations constant in counterfactual analysis.

\textsuperscript{16} For an explanation of INUS conditions see Mackie (1988)
Negation of the outcome

One straightforward piece of added-value that QCA can provide to most previous analyses is its ability to test for causal relationships with the negation of the outcome. This is rarely considered in small-N comparative research.

For the intermediate sufficiency analysis solution of the negation we assume that the absence of all conditions will be linked causally with the outcome (~deepd). The parsimonious and intermediate solutions are then the same.

<table>
<thead>
<tr>
<th>Causal Paths</th>
<th>Raw Coverage</th>
<th>Unique Coverage</th>
<th>Consistency</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>~ms<em>~ccp</em>~ple*fbs</td>
<td>0.370968</td>
<td>0.169355</td>
<td>0.915423</td>
<td>0.867 (Cov)</td>
</tr>
<tr>
<td>ms<em>ccp</em>ple*~fbs</td>
<td>0.467742</td>
<td>0.165323</td>
<td>0.966667</td>
<td>0.929 (Con)</td>
</tr>
<tr>
<td>~ms<em>ccp</em>ple*fbs</td>
<td>0.429435</td>
<td>0.159274</td>
<td>0.894958</td>
<td></td>
</tr>
<tr>
<td>~ms<em>ccp</em>~ple<em>~fbs</em>~rep</td>
<td>0.340726</td>
<td>0.038306</td>
<td>1.000000</td>
<td></td>
</tr>
</tbody>
</table>

Table 9 showing results of sufficiency analysis for negation of outcome (~deepd). Consistency threshold: 0.88

The finding here, based on the intermediate solution, that the absence of mayoral support for participatory budgeting OR the absence of a firm financial base to spend on projects are sufficient to negate deep democracy could be of great importance for policymakers or political strategists interested in participatory democracy. If the absence of mayoral support at municipal level is sufficient for the absence of deep democracy in participatory programmes, sponsoring organisations such as NGOs and the World Bank may want to combine their focus on civil society capacity with greater attention to local politicians and/or raising revenue. Perhaps this is why donor organisations have moved in the direction of identifying areas where they have local ‘participatory champions’ to invest. These insights are not possible without the mindset and procedure of QCA.

It would appear then that fsQCA has added some value. We might argue that 10 cases is a medium-N and in such a scenario, the researcher may have their face too close to the data or there maybe just too much complexity for them to hold all information in their head. Researchers like Wampler could have gained an advantage by using QCA – a tool for more complex, larger-than-small-N analysis. We could suggest QCA is an essential complimentary tool to in-depth qualitative case comparison. We should not forget one of the advantages of traditional qualitative research which compliments QCA is the ability to make reference to case-specific causal explanations which can qualify results and point to the need for further cross-case analysis. For example, we could turn to investigate now, the combination of HDI and financial situation conditions in a more sophisticated analysis or investigate the impact of alternative participatory forums such as future city in Santo Andre which Wampler mentions as having influential effects within case descriptions. What comes
out of a QCA then is a clearer indication of where one needs to make more detailed explanatory arguments.

Conclusions

I wish to conclude by making some final observations and posing some questions. To be sure, I do not claim to be the first to revisit previous data using QCA! Nevertheless, the relationships between QCA and small-N case-comparison are often assumed to be simple, and less often teased out. While many textbooks are keen to position QCA in its context as a medium-N strategy and by comparing and contrasting with Large-N strategies, the differences/similarities with small-N research are less often discussed and I have only begun to touch on them here.

Therefore it is a worthwhile endeavour to stop and ask what the added-value of applying QCA to small-N is by providing a good exemplar. The approach outlined above was not to replicate an analysis in a scientifically positivist sense but to apply the QCA approach and tools to a good and well-respected example of small-to-medium-N case-comparison and investigate the added-value. I was able to show that QCA confirmed the interpretations of the case-researcher in some instances and added caveats in others.

The first observation is that an fs/ QCA approach can complement more traditional small-N methods for typology construction and uncovering causal relationships. The paper shows that QCA can often and effectively uncover relationships overlooked by researchers trained in traditional methods of small-N comparison. This makes it a particularly useful tool in an emerging field where ethnographic methods and single-case studies tend to dominate, populations are not easily delineated and theory is often playing catch up to practice.

Yet we should also ask in the process of systematising tests for relationships of necessity and sufficiency, when and where we lose out in terms of the strength in the interpretive narrative effort. Despite retaining a case-based foundation, these variants on ontologically familial methods have trade-offs and the selection of one method over another is not a zero-sum game. Each tells us something interesting about the phenomenon under investigation and their simultaneous employment can lead to a more fruitful and open discussion about populations, condition selection and measurement as well as between theory and methods in explaining social phenomena. We have seen that the employment of QCA tools can improve understanding of what degree of parsimony or complexity is warranted in explanation. In particular we can caution against the unsystematic derivation of the kinds of parsimonious tables used in the first analysis above. I am not trying to suggest that QCA can be used as a tool to precisely pinpoint the place where parsimony and complexity meet. This will always require theoretical justification and the benefits of cumulation within and across fields of research.

The issue of case selection in QCA is sometimes treated vaguely, because authors wish to emphasise the advantages of iteration and adding and subtracting cases throughout the process. It is also often implicitly assumed that a population of cases in QCA is a ‘full’ one, carefully scoped, and not based on sampling (even information-oriented). This poses a particular difficulty in emerging fields of
research where populations are hard to pin down, like for instance democratic innovation. And yet as we have seen QCA can be most beneficial at these moments for various reasons. One strategy to address problems of population definition is to rely more explicitly on the information-oriented sampling of small-N researchers.

However this approach brings its own problems. In particular using another researcher’s population and cases can lead to high levels of necessity consistency. Without being able to make clear decisions about what the necessary analysis of a QCA has revealed it is difficult to interpret the sufficiency analysis. The second necessity analysis above suggests that the relationship between interpreting necessary and sufficiency conditions when there are a number of potentially valid necessary conditions and combinations has not been adequately theorised by QCA scholars. As much as systematic comparisons of participatory and deliberative democracy are in the ‘emerging’ stage so is QCA, leaving it open to criticism as an appropriate method for the task.

Notwithstanding this a QCA mindset can be invaluable for the development of theory and research in a field such as ours. While established but far from matured, it is an exciting and yet precarious time for our subfield of research on participatory and deliberative democracy. It is encouraging that new theories and critique continue to emerge, often questioning our most basic assumptions. These theories require testing by means of systematic comparison of cases. I am not going as far as to suggest that QCA will allow bold assertions of which emperors of theory and hypotheses have no clothes, but application of even the most basic set-theoretic methods and Boolean logic to existing knowledge could more modestly provide the necessary nuance to the scope of our theories.
References


Ragin, C.C. and Byrne, D. (eds.) (2009) The SAGE Handbook of Case-based methods


