



MIGNEX Background Paper

Qualitative Comparative Analysis for migration and development research

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MIGNEX

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MIGNEX Background Papers

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Qualitative Comparative Analysis for migration and development research

Qualitative Comparative Analysis (QCA) is a useful approach in identifying the causal configurations characterising the complex two-way relationship between migration and development. MIGNEX will highlight the potential contribution and limitations of QCA through reviewing and evaluating a scarce but rapidly growing literature on migration and development. This paper outlines some methodological features and basic principles for implementation.

QCA as a configurational method and methodology is designed to explore complex, multi-layered two-way relationships such as the linkages between migration and development

QCA-based research on migration and development is still in its infancy and provides rich opportunities for more configurational research

QCA has limitations and should therefore be triangulated with other qualitative and quantitative research methods

Introduction

In recent years, the EU and its member states have reshaped various policies to focus more on migration-related issues. The triple mantra of 'tackling the root causes' of what is perceived as unwanted migration, attracting and selecting 'the best and brightest' on the global labour market, and 'making migration work for development' in countries of the so-called Global South reflects widespread political rhetoric. All three political objectives are conceptual elements of the two-way relationship between migration and

development, which is often called the ‘migration-development nexus’ (Nyberg–Sørensen et al. 2002). Scholars have been intensively exploring this nexus for some time now using a multitude of empirical strategies (Figure 1). The number of research publications in this area has increased exponentially and it has become an established sub-field of migration studies and of social scientific research more generally. Scholars and policy makers alike have embraced the idea that migration and development affect each other through various interdependencies and interaction mechanisms. Most research in this area is characterised by two overarching yet interlinked questions, namely ‘how does development affect migration?’, and ‘how does migration affect development?’. Functional connections between migration and development processes are conceptually multifaceted and politically contested such as the facilitation of “triple win situations” for host and origin countries as well as migrants, or tackling the “root causes” of unwanted migration.

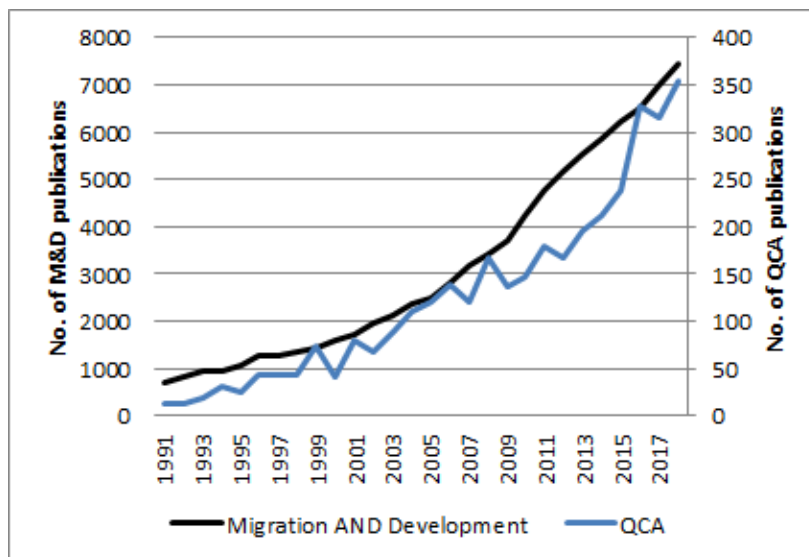


Figure 1. Number of scientific publications examining aspects of the migration–development nexus, and publications using QCA, 1990–2018

Source: Based on Scopus data.

Scientific evidence, however, is mixed and often not very supportive of the mentioned policy objectives and the underlying assumptions. For instance, ‘root cause policies’ are largely questioned by most scholars because of the unrealistic expectations such policies may trigger with regard to curbing the continuous movements of people mostly unwelcomed in European destinations. It is a stylised fact that there is a positive correlation between migration and economic development, at least for low- and middle-income countries (Clemens 2014). However, as we all know, correlation is not causation. Several potential drivers of migration are associated with the levels of broader human development and the way they may collectively ‘cause’ migration is still an unresolved question. For instance, demographic pressure, youth unemployment and lack of economic prospects, conflict prevalence and insecurity, lack of educational opportunities, environmental

degradation, or the existence of well-established migrant networks all play some role in migration, both independently and conjointly. Besides the analysis of migration drivers, a complex interaction between policy interventions including international aid provided to support development and to manage migration is part of the complex migration-development nexus. In fact, some evidence shows that poverty reduction as a primary objective of development aid, may rather promote than impede out-migration by increasing household income (de Haas et al 2019). Obviously, the development policy agendas are much broader than poverty reduction but also focus on areas such as good governance, infrastructure, rural and urban development and resilience. However, rather than development objectives per se, support in these areas are increasingly instrumentalized for migration management purposes. On the other hand, studies have provided some evidence that international migration can at the same time be a driver for economic, social and even political development (Clemens 2011, Spilimbergo 2009).

Correlates of migration such as financial, technological, and social remittances can reduce poverty, spur development and enhance democracy - yet only under certain circumstances and not in general. What these circumstances are, is still unclear, and under what conditions certain aspects of human development may be rather driving or constraining emigration, or under what conditions migration can be a driver or rather be an obstacle for development, are questions that require complex analytical approaches to be adequately addressed. The fact that empirical evidence is still rather mixed with regard to various aspects of the two-way relationship between migration and development is also due to methodological and conceptual shortcomings of some standard qualitative and quantitative methods applied to this subject matter.

This paper addresses the opportunities and challenges of investigating the migration–development nexus using Qualitative Comparative Analysis (QCA) as a methodological approach and method to explore the complex configurational two-way relationship between migration and development processes. We hereby aim to address a methodological gap in the scientific literature investigating the migration-development nexus and propose QCA as a method to enrich the empirical base and expand our knowledge and understanding of this complex relationship. Evidence-based policy requires new and advanced research methods that can handle complex links and interactions of societal phenomena like the one between migration and development.

We present QCA as a methodological approach that can advance our understanding of the complex interlinkages between migration and development and engage with some key features and good practices of implementing QCA as a method and discuss some recent developments and shortcomings of the method. We review a growing but still very limited number of studies applying QCA on questions in the area of migration and development and then discuss and assess in greater detail three studies that are representative for implementing QCA at different analytical levels (i.e. the macro, meso, and micro level). This shall illustrate the usefulness and potential of QCA as a method to explore multi-level and configurational aspects of the migration-development nexus. We conclude by emphasizing

the need for triangulating QCA with other qualitative and quantitative research methods in order to generate ‘deep and wide’ evidence that can give more conclusive answers to some of the most pressing policy questions of our time. We argue that QCA can have a clear added value in providing additional insight into the more complex interlinkages between migration and development, in particular when it is meaningfully supplemented by other methods.

Configurational research and the migration-development nexus

Conceptual and policy-relevant questions on the interdependencies between migration and development address the role and relative importance of multiple factors (or drivers) such as poverty, environmental degradation, or armed conflicts which are often seen as key predisposing drivers of migration. The implication for policy making is that a sustainable way to ‘manage’ (i.e. to prevent) unwanted migration is to address its root causes. However, there is a persisting mismatch between the dominant scientific conclusions and the widespread belief in the capacity to manage migration by implementing specific policies addressing some ‘key drivers’ of migration. Migration and development are multi-layered processes and their interdependence turns the nexus between the two phenomena even more complex. Often ‘migration management’ means to address unwanted migration by implementing unidimensional, single-issue policies. However, multidimensional, multilayered and interlinked processes such as those of migration and development are not sufficiently addressed by singling out particular driving factors for some ‘treatment’. Migration and development outcomes alike are the result of configurational causations, which implies that many social, economic, political, cultural, institutional and other factors have to come together to produce a certain migration or development outcome. For instance, large-scale movements of refugees are driven by a number of factors including violent conflict, but often also economic decline and environmental stress possibly in combination with the migration-facilitating role of social networks and established migration cultures or infrastructures. This exemplary configuration of driving factors may, for instance, explain *some* refugee situations but certainly not all forms of refugee situations and definitely not an ‘average’ refugee situation.

While most quantitative statistical methods are tools to explain (or estimate) ‘average’ outcomes, the underlying assumptions and implications are relatively strict with regard to the independence, linearity, and symmetry of causal effects. In other words, quantitative statistical research (e.g. regression analysis) does not allow for the possibility that a number of factors may not independently affect migration or development, respectively, but only in combination with a number of other factors. For instance, a violent conflict does not necessarily trigger large-scale emigration but only if other factors are simultaneously present such as established migration corridors or economic hardship of wider parts of the population. But also the empirical observation that development can go hand in hand with more, but also with less migration is hard to handle by most quantitative research methods. Asymmetric outcomes (e.g. low vs. high

out-migration rates of regions or countries) require separate and often complex (e.g. non-linear) explanations. For instance, high vs. low emigration propensities cannot simply be explained by the intensity (i.e. a higher or lower ‘dose’) of a certain driving factor, whether it is conflict, demographic pressure, environmental stress, or economic hardship or any other factor. Social scientific phenomena such as migration or development and their functional relationship are outcomes of causal configurations of multiple factors. The migration and development literature has thoroughly addressed these factors, though mostly only separately, i.e. in an additive way, rather than conjointly in a multiplicative way, which requires methods that can handle complex configurations of factors.

A recent review and synthesis of the vast literature on migration drivers has identified a range of explanatory factors that are assumed to affect migration processes in one or the other way (Czaika and Reinprecht 2019). Figure 2 displays the share and distribution of more than 460 empirical and non-empirical studies by driver dimension. Economic and socio-cultural drivers outnumber the other driver dimensions while environmental drivers have received relatively less attention. While this might reflect a biased selection of the literature, we believe that this extensive pool of studies is broadly representative of the literature on migration drivers.

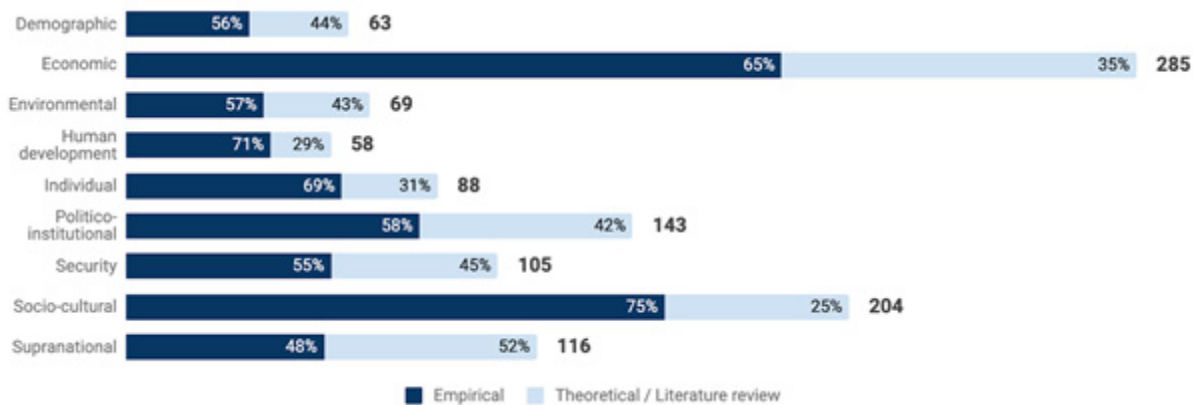


Figure 2. Empirical and non-empirical studies by migration driver dimension (N=463)

Source: Czaika and Reinprecht (2019)

Most of these studies investigated more than one driver. However, hardly any of these studies have explored in greater detail more complex interactions of these migration drivers, hereby implicitly suggesting that these drivers are operating independently, additively, and linearly rather than configurationally, asymmetrically, and in a non-linear way. The reason for this conceptual and methodological shortcoming is the fact that some of the standardly applied methods either cannot handle more complex configurational explanations and causations (quantitative methods) or have only limited capacity to extrapolate beyond thick descriptions (Geertz 1973) of a limited number of cases.

Until recently, configurational research methods and methodologies have hardly been applied to the field of migration and development although they have gained prominence in other fields of social scientific research. Since Rihoux and Ragin's book 'Configurational comparative methods' (2008), which is cited more than 1600 times (as of mid-2019), QCA is now rapidly applied to complex, multi-layered social, political, or economic phenomena. This growing interest in QCA as a promising methodological approach for studying multi-causal phenomena is also reflected by the rapidly increasing number of studies using the configurational method (cf. Figure 1).

Despite the rapid increase in scientific publications focusing either thematically on the interlinkages between migration *and* development or QCA as a new methodological approach for understanding complex causal configurations, both areas are still very much disconnected, meaning that only very few studies in the area of migration and development have been using QCA as methodological approach so far. In fact, the abstract and citation database Scopus lists only one research paper, Qin and Liao (2016), which uses QCA as the method to study the effect of labour migration on agricultural development (we will be discussing this paper in some more detail in section 5). Although we could identify a few more QCA-based research articles in the wider field, our literature review clearly shows that QCA has not yet been incorporated into the methodological toolbox for researching complex interlinkages between migration and development.

And the stakes are clear: QCA as a methodology allows a refined understanding of the migration-development nexus, i.e. the multi-level determination of migration processes and their impact on development. Sweeping assumptions about certain drivers of migration—conflict, environmental change, poverty—often obscure the real dynamics that turn specific developments and events into differentiated migration outcomes. QCA is able to explore how alternative configurations of factors shape migration processes and outcomes. Many, if not most, studies analysing drivers of migration have traditionally focused on one or the other (statistically independent) determinant. QCA is not only able but forces the researcher to explore more than mono-causal relationships and to identify complex combinations of interdependent (migration and non-migration) policy and non-policy factors that may *in combination* shape migration processes. Or, vice versa, QCA allows disentangling the way migration influences development outcomes *in combination* with other socio-economic or institutional factors.

At the heart of a configurational analysis of the migration-development nexus are two overarching questions that specify the even more generic questions *whether* development drives migration, and vice versa, namely:

- *how* do causal conditions and configurations of specific drivers (including policy changes) affect migration dynamics, and
- *how* do migration dynamics and transnational practices shape development outcomes?

QCA is predestined to provide answers to such questions by identifying relevant configurations of necessary and sufficient conditions that are decisive elements of the empirical evidence. For instance, a collapse of

livelihoods might produce significant out-migration in some configurations but not in others. And whether a given set of policy interventions enhances the development benefits of migration is likely to depend on other contextual factors that may be necessary or sufficient for positive development outcomes.

The search for necessary and sufficient conditions is the core of any QCA (see Schneider & Wagemann 2012: 56-90). For instance, we may be interested in factors ‘causing’ high emigration from a country (or region, city, neighborhood etc.), among one possible explanatory factor is assumed to be high unemployment. In order to check whether a high level of unemployment (cause X) is a necessary condition for high emigration (effect Y), X must be given whenever Y exists. High emigration in this case cannot occur without high unemployment. From a set-theoretic perspective, this relationship could be described such that the outcome ‘high emigration’ is a subset of the condition ‘high unemployment’, or the condition X is a superset of the outcome Y. A sufficient condition, on the other hand, ‘mirrors’ somewhat a necessary condition: high unemployment may be considered sufficient for a situation of high emigration. In this case there should not be any country (or region, community, or any other analytical unit) in the sample that is simultaneously characterised by high unemployment but not high emigration. That is, an explanatory factor (causal condition) X is sufficient in explaining an effect (outcome) Y in situations where whenever X occurs, Y is also present; or in set-theoretic terms: the set of all high unemployment countries is a subset of all countries characterised by high emigration.

As such, QCA-based analyses on the drivers of migration may address research questions of the following type:

1. Which causal factors are required for migration to occur? This question asks whether there are any factors which are absolutely or normally necessary for migration (i.e. necessary conditions)
2. What causal factors ‘guarantee’ or dramatically increase (solely or in combination) migration to occur? This question asks whether any of the factors under consideration are sufficient for migration to occur, even if these factors are not necessary for migration (sufficient conditions).
3. What causal factors make the difference for migration to occur, and under what circumstances? This question asks whether any factors ‘guarantee’ or increase the chances of migration to occur, alone or in combination, even if these factors are not required per se (INUS conditions).

The following section describes in greater detail the main features of the QCA methodology and how to implement it in order to adequately address such research questions.

QCA methodology and its main features

In 1987, ‘The Comparative Method’ of the American sociologist Charles C. Ragin has laid the groundwork for Qualitative Comparative Analysis (QCA) as a new methodological perspective for comparative social scientific

research. Since then social scientists of various disciplines are increasingly applying QCA to complex analytical problems. This becomes evident in the rapidly growing number of publications investigating QCA as a methodology or research approach (see Rihoux et al., 2013). Based on journal publications as an indicator of the growing popularity of QCA between 1991 and 2018, Figure 1 indicates the phenomenal rise in the use of this method. Especially since the introduction of so-called fuzzy set QCA (Ragin 2000), the number of QCA applications has increased significantly.

Over the past three decades, QCA as a configurational research approach and a method of analysis has been rapidly developed by Ragin (2000, 2008) and others (for instance, Rihoux & Ragin 2008; Schneider & Wagemann 2012). Hereby, QCA seeks to identify causal explanations through a systematic comparison of the presence or absence of specific conditions in a set of cases (Ragin 1987, 2006) exploring causal connections between a theoretically informed set of causal conditions and an outcome.

A typical research question about whether “factor X is causally related to the (hypothesised) effect on Y” can be specified in different ways (cf. Befani 2016):

- Can we measure the marginal (net, i.e. isolated) effect of a factor X on effect Y?
- How often is factor X observed together with the effect Y?
- Does the effect Y decrease or increase as the factor X increases or decreases, respectively?
- What role does factor X play in producing the effect Y?
- What explains effect Y? How and why does factor X produce it?

Obviously, all of these questions address a (hypothetical) causal link between a potential cause X and an outcome Y and can be addressed by a number of qualitative and quantitative research methods. The unique feature and main contribution of QCA compared to other methods is to answer the question whether factor X (‘the cause’) is satisfying various notions of *necessity* and *sufficiency* for causality. The ‘cause’ can hereby be a policy intervention or another contextual or historical factor, which can be required (‘necessary’) to achieve an outcome or if the outcome can also be achieved without this condition; and whether a certain condition is good enough (‘sufficient’) to produce the outcome or requires other factors to be effective.

Necessary and sufficient conditions

As a set-theoretic approach, QCA applies a very specific perspective on relationships between social phenomena sharing three fundamental features (cf. Schneider/Wagemann 2012): first, observations of analytical units (‘cases’) are defined by their membership score in a particular set, i.e. each case in a sample of individuals, households, communities, firms, regions or countries is characterised by a certain degree of set membership. For instance, if cases are defined as regions, the sample may contain cases (regions) with a high membership in the set of high emigration regions and cases with a low membership score. Second, associations between indicators of migration and development are defined as set relations, and thirdly, these set relations are interpreted in terms of sufficiency and necessity. For

instance, development factor X is only a sufficient condition for the migration outcome Y to occur if condition X is a subset of a (larger) set Y (Figure 3, left-side). That is, for instance, if ‘civil war’ (X), then (always) ‘high out-migration’ (Y), which implies that in order to observe high out-migration, it is sufficient that peace turns into war. Obviously, war may not be the only sufficient condition for high out-migration as there may be other (configurations of) conditions that cause high out-migration. On the other hand, X can also be a necessary condition, i.e. a superset of an outcome set Y. This implies that Y, still defined as ‘high out-migration’, can only be observed when the necessary condition X (e.g. ‘economic decline’) is present (Figure 3, right-side).



Figure 3. Venn-diagram of sufficient (left) and necessary (right) conditions

INUS conditions

Conditions can be neither necessary nor sufficient but are part of more complex configurations of so called INUS conditions. INUS conditions are defined as “*insufficient but non-redundant part of an unnecessary but sufficient condition*” (Mackie 1974). INUS conditions in itself are neither sufficient nor necessary conditions for outcome Y to occur but only as the insufficient (I) and non-redundant parts (N) of an unnecessary (U) but sufficient (S) condition for Y. For instance, any of the three elements of the following QCA solution

Civil conflict AND (i.e. in combination with) weak migration networks AND restrictive migration policies sufficiently cause low levels of out-migration

is neither sufficient nor necessary for low levels of out-migration to occur, but only in combination with the other conditions makes them ‘INUS’.

QCA provides a case-oriented perspective that is fundamentally different from variable-oriented approaches as in statistical methods. Cases are understood as configurations of different sets in which cases may have a certain degree of membership. For example, an individual case can be a full member, full non-member or partial member – i.e. more within or more outside of an amount, possibly with different levels – in the set of countries with high out-migration. Sets are thus characterized by the ability to capture both quantitative degrees of partial membership and qualitative differences (differences in kind) between non-member and member in a set (Schneider & Wagemann 2012; Ragin 2008).

As a case-oriented approach, QCA requires a conceptualisation of cases (such as countries, regions, communities, firms, households, or even individuals)

as combinations or configurations of characteristics that are suspected to causally influence an outcome. For example, in one of the very few QCA studies on migration and development, Qin and Liao (2016) examined the effects of out-migration on agricultural change in 20 areas in rural China. By means of QCA the authors were able to identify the configurations of conditions that produce negative effects that out-migration has on agriculture. The relevant conditions included policy factors (e.g. abandonment of agricultural tax) as well as non-policy factors (e.g. geographical location). Qin and Liao's study demonstrates the necessity of sub-national analyses of migration–development interactions. Moreover the study illustrates the potential of QCA as a foundation for policy that is both evidence-based and context sensitive.

QCA requires familiarity with the characteristics of the cases, and together with their outcomes, a systematic cross-case comparison identifies the factors that are consistently 'overlapping' to a certain degree with an outcome (i.e. aspects of migration or development) and can potentially be considered causally responsible for the outcome to occur.

Calibration

Conditions and outcomes are calibrated by defining the degree of set membership for all conditions and outcomes based on raw data that describe condition and outcome characteristics of all cases. The two basic ways for calibrating raw data is dichotomous or continuous. In crisp-set QCA (csQCA), conditions and outcomes of cases are dichotomous and defined by the 'presence' or 'absence' (i.e. membership) of given characteristic in a set of cases (see Figure 3). Crisp-set QCA hereby identifies the conditions that are needed or most effective for the outcome to occur (Befani 2016). In fuzzy set QCA (fsQCA), cases can also have partial membership in the sets of conditions X and outcome Y allows therefore for more information. Cases can be more out than in a set, and vice versa. Fuzzy scores are calibrated between 0 (full non-membership) and 1 (full membership) representing the degree of presence of a concept (Schneider/Wagemann 2012). This implies that cases are characterised by their degree of membership in the respective condition set X and outcome set Y (see X-Y plot in Figure 4).

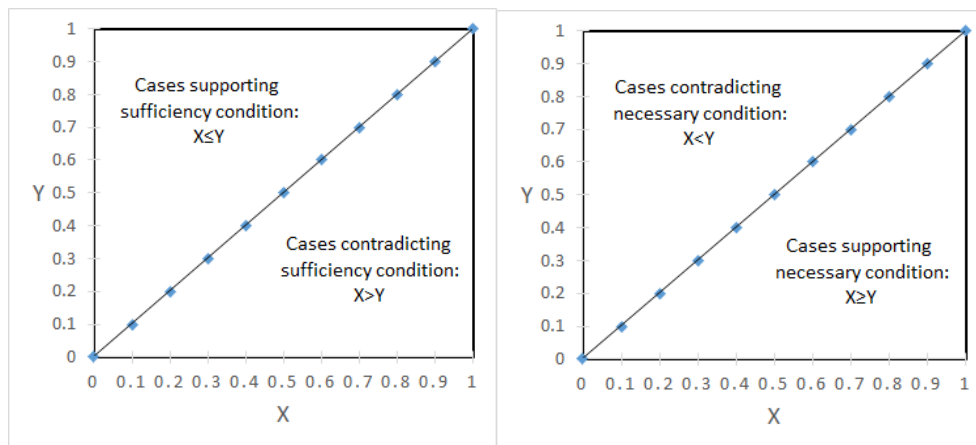


Figure 4. X-Y plot of sufficient (left) and necessary (right) conditions X for outcome Y

Equifinality

Another core feature of QCA is its ability to handle and identify plural causation ('equifinality'), i.e. a situation when there is more than one condition or configuration of conditions that generate the same outcome. For instance, high out-migration can be sufficiently caused by the following alternative (equifinal) solutions:

1. Civil unrest AND established migration network AND environmental degradation
2. Economic decline AND absence of political stability AND post-colonial ties to an attractive mother country
3. Low level of educational outcomes AND high unemployment among youth AND established culture of migration

All three combinations are equifinal, i.e. generate the same outcome (high out-migration), and all consist of three INUS conditions that are conjointly sufficient for high out-migration to occur. Thus, there can be three different configurations that can tell very different stories for out-migration to occur in some countries but not in other countries. Consequently, QCA results can be translated into more complex policy recommendations in the sense that the QCA 'solutions' identify not only one but possibly a number of 'equifinal' combinations of conditions that are necessary or sufficient for a (migratory or developmental, respectively) outcome to occur.

Consistency and coverage

In QCA, consistency and coverage are measures commonly used to assess 'goodness of fit', i.e. to evaluate non-perfect subset relationships for both necessary and sufficient conditions (see Schneider & Wagemann 2012: 119-150; Ragin 2008). The consistency measure reflects the degree of merit to which empirical evidence supports the claim of a sufficient (set-theoretic) relationship and indicates how much it deviates from a perfect sufficient relationship. For instance, the consistency measure in the analysis of sufficient conditions for high out-migration to occur may indicate that 'civil conflict' is not perfectly consistent, i.e. for some cases the outcome (high out-migration) is present but not for others even though 'civil conflict' is present

also in these cases. The coverage parameter, on the other hand, must be interpreted differently, depending on whether it is a necessary or sufficient condition. With sufficient conditions, coverage is a measure of how 'broad' an explanation is, i.e. to what extent an outcome can be explained by an identified sufficient (configuration of) condition(s). For instance, 'civil conflict' may explain high out-migration only in some countries; other countries with high out-migration but without civil conflict require other explanations. In the case of necessary conditions, high coverage implies triviality because the condition is almost always present no matter whether the outcome is present or not (see Schneider & Wagemann 2012). Consistency and coverage are therefore two parameters that provide valuable support for the evaluation of the set relations at different stages of a QCA analysis.

Basic principles for implementing QCA

QCA has been and still is developing rapidly as a research approach and an analytical technique. Although far from being a fully standardised methodology, some principles of good practice should be followed when implementing QCA (cf. Schneider and Wagemann 2010).

Selection of cases and sample size

Ragin (1987, 2000) originally presented QCA as the comparative methodology for low- to medium-sized research designs. Although numerous studies still justify the application of a QCA with the availability of a mid-sized sample (i.e. approx. 5-30 cases), this criterion is not considered central. QCA can also handle large-N samples 'representative' for larger populations as for instance provided by individual-level survey data. Indeed, QCA is increasingly being applied to large-N samples, which improves the external validity of the results, although it largely precludes familiarity with the individual cases but allows triangulation with complementary statistical techniques and parameters. The actual sample size is rather secondary; it is more important to make best use of a set-theoretical research perspective (Schneider & Wagemann 2012).

Further principles are:

- Case knowledge is a key requirement in the QCA research process
- Selection and (non-)selection of cases should be explicitly defined and justified. Samples should contain equivalent (comparable) but not identical cases since understanding the similarities and differences of the selected cases is the key objective of QCA.

Selection and calibration of conditions and outcomes

Like in any statistical analysis where the optimal number of variables depends on the sample size and the variation within the dependent variable, the maximum number of conditions to be tested in a QCA model depends on the number of available cases and their diversity, i.e. how much variation the cases provide for the analysis of the relations between conditions and the outcome.

Selection and definition of conditions require theoretical understanding of the condition-outcome relationship and substantial background research. Data collection and calibration of conditions should make use of the full toolbox of social scientific methods including surveys, interviews, focus groups, document analysis, etc. For instance, conditions that are testing the role of certain migration policies for explaining migration outcomes may not be as simple as recording the presence or absence of a specific type of policy, but could require, for instance, a comprehensive review and assessment of policy documents and/or expert interviews. Conditions that draw upon survey data might also require substantive preparatory work. Or, for instance, the prevalence of migration intentions might need to be standardized by age and gender before it can be used to meaningfully compare more aggregated research units (e.g. communities, regions, countries).

Another analytical challenge is the determination of the appropriate level of abstraction for defining conditions. For instance, if armed violence is prevalent in a number of cases (e.g. countries, regions, communities), but in some other cases it is linked to politically motivated insurgency while in other cases rather linked to violent crime, it needs to be discussed and conceptually justified if the two types of violence are to be treated as a single condition rather than two separate conditions for crime and insurgency. Other principles are:

- Theory and empirical case knowledge should inform the selection of conditions. The number of conditions should be parsimonious (e.g. 5-8 conditions for sample sizes smaller than 100)
- Case calibration in terms of anchors and set membership scores should be theoretically informed and the calibration criteria should be external to the raw data. Data-driven calibration based on means or clusters of the raw data should be justified.
- Theory and empirical case knowledge should inform the selection and calibration of outcome. The outcome and the negation of the outcome should be dealt with in separate analyses.
- Selection and calibration of conditions and outcomes should be discussed transparently. Alternative calibrations of condition and outcomes should be part of a sensitivity analysis.

Transparency in the analytical process

Transparency in all analytical steps is a necessary condition for a high-quality QCA analysis. For instance, it is good practice to be transparent about the treatment of contradictory rows (in csQCA) and of inconsistent truth table rows (in fsQCA). It is also required to transparently discuss limited diversity and treatment of logical remainders. This requires that the raw data matrix is made available. Or, the decision to consider a (slightly) inconsistent (combination of) condition(s) as sufficient for the outcome should be carefully and transparently justified. Further guiding analytical principles are:

- Contradictory truth table rows should always be resolved prior to the minimization of the truth table

- Necessary and sufficient conditions should always be analysed and discussed separately. Necessary condition analysis (Dul 2016) should be presented first.
- Consistency and coverage thresholds should be discussed and respective measures always be reported. These parameters should not be applied mechanically. Although there are certain thresholds or benchmarks for ‘acceptable’ consistency and coverage values (Ragin 2009: 121 oder Schneider & Wagemann 2012: 278–79), these should always be evaluated on the basis of theoretical knowledge and a reconsideration of the cases. In the presentation of necessary and sufficient conditions and equifinal solution terms, interpretation of consistency and coverage is always mandatory. Test of alternative thresholds for consistency and coverage should be part of a robustness check.

Presentation of solutions

Standard QCA analysis requires the presentation of the results of the minimisation process of the truth table. It has become standard practice to present and discuss several solution formulas of different complexity. Solution paths that are deemed more important (e.g. due to higher coverage) than others require explicit justification. It is important to note that QCA solutions do not prove an underlying causal relationship *per se* but always need to be justified by theory. Therefore, solutions should always be linked back to the cases and to theory.

For many social scientists including most migration scholars, QCA is a new methodology which most are not familiar with. In contrast to most statistical analyses, QCA is based on a different terminology and theoretical foundation which establishes a barrier for ‘consumers’ of QCA research. Therefore, QCA-based findings should be thoroughly explained and pedagogically presented in order to reach highest impact.

Triangulation

QCA should ideally be applied in combination with other qualitative and quantitative research methods in a research project. For instance, QCA could be part of a triangulation of methods through its combination with some more qualitative methods including process tracing (Beach and Rohlfing 2018, Schneider & Rohlfing 2013), or in-depth case studies (Mikkelsen 2017), as well as with large-N statistical techniques (Eliason and Stryker 2009; Greckhammer et al. 2013).

QCA in migration and development studies

Since the early 2000s, QCA applications expanded across various social scientific disciplines including sociology, political science or geography. The COMPASSS¹ journal database, a major reference among scholars and practitioners engaged in the development and application of systematic

¹ COMPASSS (COMPARative Methods for Systematic cross-caSe analySis) is a global network bringing together researchers involved in theoretical, methodological and practical developments of the QCA approach. See www.compass.org

cross-case analysis, and QCA in particular, tags only five journal articles as related to migration studies, and 57 in the field of development studies, out of 1008 references. This COMPASSS journal database is however far from exhaustive indicating that more academics outside the ‘QCA community’ have started to develop an interest in the method. While there are a number of QCA-based studies in the fields of migration studies and development studies, there are still very few empirical applications of QCA aiming to explore the migration–development nexus. Generally, QCA applications have been used more extensively in the field of development studies than in migration studies.

QCA in migration studies

The use of QCA is often justified for its comparative purpose, a main element of the method. For instance, Hooijer and Picot (2015) looked at migrant poverty in the European context, justifying the use of the QCA method as ‘there has been little comparative research so far on how immigrants fare in developed welfare states’ pointing in particular to the ‘lack of systematically compared institutional determinants of migrant poverty across a larger set of countries’ (p. 1881). QCA studies in the field of migration studies addressing the migration–welfare nexus are more common in comparison with other topics (see Da Roit & Weicht 2013; Hooijer & Picot 2015). In the past few years, several migration scholars have used the QCA approach to compare and understand better the development of migration and asylum policies as well as integration/citizenship policies at cross-national level countries.

In most migration-related studies, the main unit of analysis is countries, hereby applying a macro-level analysis. Guérin’s (2018) research, for instance, seeks to identify the relevant drivers of alignment in European Neighbourhood Policy (ENP) states with European asylum policies. Walbott’s (2014) study focuses on citizenship and immigration in Western Europe and looked at why some countries facilitate access to national membership for immigrants while others permanently rely on restrictive policies. Ebeturk and Cowart’s (2017) contribution examines the causes of criminalization of forced marriage in 29 European countries of which 20 have criminalized forced marriage. In some studies, a meso-level approach is adopted, as recently achieved by Dekker and Scholten (2017) in their study on media effects on Dutch immigration policies. That study examines both configurations of quantitative and qualitative aspects of media coverage associated with changes in the policy agenda. To do so, it compares the media coverage of 16 events associated with Dutch immigration policies (unit of analysis) that took place between 2011 and 2015 and that gained different amounts of media attention in the Dutch media over the past years.

While QCA analysis is often used in comparative macro- and meso-level studies as depicted above, a few migration-related studies apply QCA also at the micro-level. One example is Seate et al.’s (2015) research testing the intergroup contact theory. The authors aim to analyse how several communicative and psychological variables might be necessary and/or sufficient to produce positive intergroup attitudes towards ‘illegal’ immigrants within an imagined intergroup contact experience. The discussion emphasizes the implications for intergroup contact and the utility of fsQCA.

Based on existing literature, the QCA approach in the field of migration studies mainly focuses on the European context and the topics are predominantly on citizenship, migrants’ rights, welfare states and the conditions of policy diffusion

of migration/asylum/integration/citizenship policies. It is clearly a growing field of study but still far from being prominent area².

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QCA in development studies

In the COMPASSS database, 27 references are categorised under the tag 'development'. To include more references in our database, we include geographical tags (i.e. Africa, Latin America, Asia and the Middle East) as well as 'conflict' and 'peace' as additional markers. In total, we found 57 development-related articles in the COMPASSS journal database³. Based on this data collection, we notice that many studies adopt an international perspective comparing countries across continents (Global: 12), in Asia (10), in Africa (9), Latin America (9), Europe (4), North America (3) and the Middle East (2). Some authors focus on what they identified as 'developed countries' (8) (mainly part of the Organisation for Economic Co-operation and Development). Therefore, the majority of studies in the field of development are still taking place in the so-called 'Global North' with fewer studies looking only in the so-called 'Global South'. QCA studies adopting a global perspective nevertheless represent an important focus among all development-related articles.

Although not being fully exhaustive, the COMPASSS database reflects the main areas of investigation of QCA-based development research. Figure 5 indicates that the majority of studies focuses mainly on the links between democracy/governance and development as well as on economic development. In the last decade, QCA as a method has also started to be applied in a range of new disciplines such as in the field of conflict/peace studies, international relations and international development studies.

² For instance, at the 16th IMISCOE Annual Conference Understanding International Migration in the 21st Century: Conceptual and Methodological Approaches (Malmö, 26–28 June 2019), only one paper (out of several hundred) was based on QCA methodology. The IMISCOE Network connects 50 member institutes and around 1000 individual members from within as well as beyond Europe and is central in the development of migration research (see 2019 conference programme: <https://www.imiscoe.org/images/conference-2019/konferensprogram-imiscoe-2019.pdf>)

³ Accessed in July 2019.

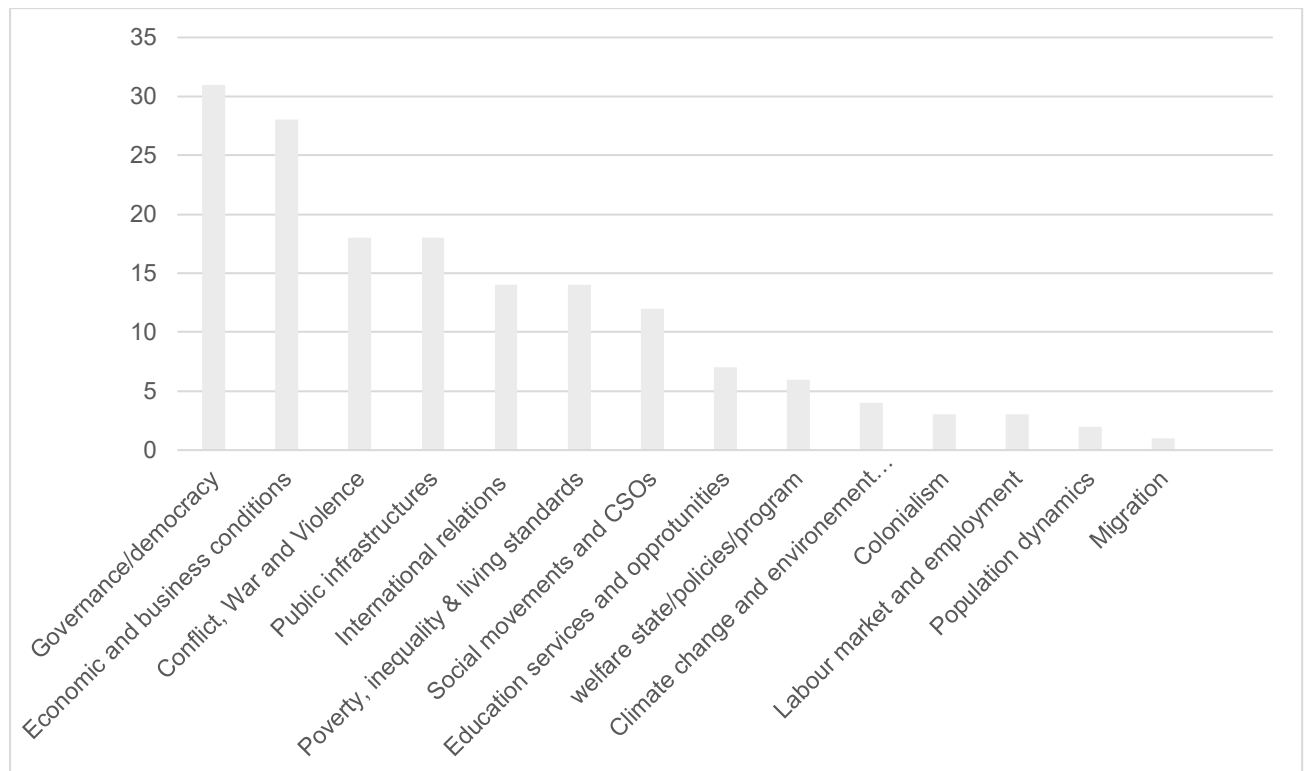


Figure 5. Number of development-related QCA publications per theme in COMPASSS database (N=57)

Only a few studies touch upon the complex interaction between migration and development. Ansorg's study (2014), for instance, examines the conditions for the development of regional conflict systems in sub-Saharan Africa. Based on 12 cases studies (located in West Africa, in the Great Lakes and in the Horn of Africa), the author identifies four specific conditions that can lead to a regional spread of violence: economic networks sustained through the support of neighbouring countries; an intervention on the part of the government; militarized refugees; and, non-salient regional identity groups. Among the set of hypotheses tested, one directly looks at the existence of militarized refugees—meaning if there are combatants among the refugees arriving in another, neighbouring country—as a central condition for the regional spread of violence. Militarised refugees are identified as a potential driver for conflict that can lead to the diffusion of regional conflict and to some extent to more refugee movements. Similarly, looking at the impact of climate change on rural communities, Haeffner, Baggio and Galvin (2018) investigate environment degradation and its relation to environmental migration and other rural drought adaptation strategies among which are household migration, changing farm practices and acquiring off-farm work in Baja California Sur, Mexico. The main focus of this study is on forms of migration as adaptation strategies to tackle environmental degradation as well as ways to maintain traditional livelihoods or conduct sustainable ranching practise.

More explicit in its attempt to disentangle the migration–development nexus is the field of diaspora studies and international relations. For instance, Hasic's (2018) article investigates post-conflict co-operation in multi-ethnic local communities of Bosnia and Herzegovina addressing the question of how diaspora involvement in peacebuilding and elite co-operation in multi-ethnic municipalities may be complementary. Or, in another context, Rubenzer (2008) specifically looked at ethnic minority interest group attributes and their influence on U.S. Foreign Policy. Similarly, Qin and Liao's (2016) research is also part of this new corpus and examines the migration-induced agricultural change in 20 areas in rural China. Their research aims to provide a more accurate understanding of the relationship

between migration and agricultural development. Similarly, Taylor's study (2015) investigates international mobility and migration as drivers of technological developments, specifically internet penetration in Ghana, West Africa.

An area where the method has been gaining ground is policy impact evaluation, in particular in the field of development co-operation (Pattyn et al. 2017) where it is used as an alternative method for evaluation of policy change or advocacy interventions (Meuer et al. 2018). In a proposal called 'Development on the Move'⁴ which was a collaborative research project between the Institute for Public Policy Research and the Global Development Network, the use of QCA analysis was discussed to conduct a cross-country analysis. Based on the assessment that there were few comparative works on migration and development with most analysis taking place at the country, region or village level, this consortium aimed to explore the interaction between migration and development across countries in assessing the multiple economic and social impacts of migration. The focus was therefore mainly on how migration dynamics and transnational practices shape development outcomes.

Overall, very few QCA articles address directly the migration and development nexus as such, but the majority of migration- and development-related studies either focusing on migration or on development as the outcome phenomenon to be explained. While it is clear that migration and development affect each other through various interdependencies and interaction mechanisms, very few studies have attempted to disentangle these complex causal relationships. However, a growing interest is noticeable in the research community that has been taking place over the last few years indicating to a growing and emerging field of study.

QCA in practice: A review of three case studies

This section examines three qualitative comparative analysis (QCA) case studies conducted at the macro, meso, and micro level within the field of migration and development studies. Specifically, we evaluate how QCA as both a research approach and an analytical technique has been applied, considering the aforementioned standards of good practice (Schneider & Wagemann 2010). In doing so, our aim is to highlight some of the strengths and shortcomings of the QCA methodology. We will also provide for each case study a summary of how the authors have expressed their main findings in order to assess whether the authors were able to convey their results in a clear way.

QCA at the macro level: EU democracy promotion in sub-Saharan Africa (Del Biondo 2015)

Del Biondo's study aims to explain the unequal application of sanctions in EU democracy promotion in sub-Saharan Africa. To do so, a fuzzy-set QCA (fsQCA) examining 17 cases of violations of democratic principles and human rights in nine sub-Saharan African countries (Ethiopia, Kenya, Nigeria, Niger, Zimbabwe, Guinea, Chad, Ivory Coast, and Rwanda) between 2000 and 2011 were selected in relation to the EU's reactions in either adopting or threatening to adopt punishing sanctions. Based on a review of the literature on political conditionality, Del Biondo has identified two narratives with regard to EU policy responses. First, there can be a conflict between democracy promotion and the EU's investment interests; and second, democracy promotion is not always consistent with development policy. In the case of the EU and its promotion of democracy in African countries, it was expected that the EU would trade democracy for both donor interests and development policy. To understand this complex causal relationship, fsQCA was

⁴ See

http://www.ippr.org/files/uploadedFiles/research/projects/Migration,_Equalities_and_Citizenship/Development_on_the_move.pdf

used to explore how donor interests and developmental performance work together, and whether the conditions called for strong sanctions.

The selection and presentation of the 17 cases demonstrates in-depth contextual and case knowledge. To have 'sufficient intimacy' with each of the cases selected, different sources of information and data collection were triangulated, based on official reports, quantitative data, available academic literature, qualitative interviews with officials and diplomats from the European institutions, and independent country experts. The sample of cases includes a variety of responses by the EU, being both theoretically and empirically driven, it considers 'both the important or typical cases and the more paradoxical or contrary ones' (Berg-Schlusser et al. 2009: 7). The category 'non-cases' refers hereby to situations where the EU either did not adopt or only adopted weak sanctions; conversely, 'cases' refers to situations where the EU applied heavy sanctions or made a credible threat. 'Outliers' and 'exceptions' or non-conforming cases are included in Del Biondo's study to provide a more compound analysis.

The outcome variable—the degree to which the EU adopted sanctions (SAN)—is discussed for all cases with values presented in a table and based on four possibilities: no sanctions, with a '0.0' score; weak sanctions, with a '0.33' score; cases higher than the cut-off point with heavy sanctions, with a score of '0.64'; and finally, cases with the highest score '1', with aggressive targeted sanctions. The QCA model is then presented with fsQCA justified to analyse the combination of donor interests (INT) and developmental performance (DEV) as necessary or sufficient conditions for strong sanctions (SAN), the outcome variable. These two conditions were selected to test two hypotheses on whether the EU would impose heavy sanctions (SAN) on governments that did not facilitate its interests (INT) and were unsuccessful in promoting economic development (DEV) (H1), as well as whether the EU would not impose strong sanctions (SAN) on governments that facilitated its interests (INT) or were successful in promoting economic development (DEV) (H2). The operationalisation of the two conditions are then presented in a detailed manner in the paper.

The condition on whether a government facilitates the EU's interests (INT) allocated scores and accounted for a certain level of complexity, looking simultaneously at the historical, commercial, and security interests when analysing relations between states (with a '0' score in cases with no facilitation, a score of '0.67' in cases with at least one type of interest involved, and a score of '1' when more than one type of interest is involved). Not only theoretical knowledge was used to determine the calibration of the condition, but insights gained throughout the research process were also key and based on qualitative analysis (Schneider & Wagemann 2010: 7). The calibration of the condition 'DEV', measuring good developmental performance, combined a series of quantitative indicators (average GDP growth, inflation rate, Human Development Index, and World Bank Worldwide Governance Indicators on control, corruption, and government effectiveness) for each case over the period 2000–10. The aggregation of all these indicators led the author to determine the fuzzy scores, with '0.00' in cases of low developmental performance, '0.33' for when developmental performance has been mixed, and '1.00' in cases of successful developmental outcomes.

In the analytical section of the paper, the author first looked for necessary conditions before turning to the analysis of sufficient conditions in line with Schneider & Wagemann's recommendations (2012: 8). Both the absence of donor interests and the absence of good development performance were found as necessary conditions for sanctions. However, the value consistency for DEV was 0.950525, only slightly above the 0.9 threshold set by the author—though not explicitly justified. In contrast, INT had a consistency of 0.848576 (slightly below the 0.9 threshold) but was still considered high enough to be relevant. The truth tables for the analysis of sufficiency were then presented and discussed based on both consistency and coverage values.

Two so-called contradictory cases were found which led the author to emphasise nuance in the absence of interests and underline the importance of the absence of developmental performance, for which no logical contradictory cases were found. QCA analysis has therefore been used to test existing theories and

hypotheses, but also to generate new theoretical arguments. This illustrates the relevance of alternating between cases and solution formulas. It also stresses the importance of not applying QCA in a mechanical way, but as a research approach that should always relate back to the cases. In fact, an in-depth analysis of the two contradictory cases (Kenya and Niger) revealed the importance of other conditions that could have triggered EU sanctions. This raises the question of why potential additional conditions (e.g. media, public opinion, or regional influence) were not introduced in another QCA model. As Schneider & Wagemann (2010) have suggested, both the selection and definition of conditions and the outcome can change during the research process, based on preliminary findings. This iterative dialogue between the data and development of the truth table is a strength of the QCA method. This enables researchers to refine their model and integrate new conditions to embrace complex causality (Schneider & Eggert 2014). In fact, the number of conditions tested in Del Biondo's model is rather limited. While the number of conditions should generally be kept at a moderate level, in this particular case including one or two more conditions could have led to a more complex and robust QCA model. A balance between too many and too few conditions needs to be found to avoid producing results that are either overly complex or simplistic, making theoretically meaningful interpretations a challenge in both cases. In terms of data presentation, the article is quite detailed—and in that respect very useful—in its transparent and pedagogical application of the key steps of a fsQCA analysis. The author discussed all the cases in relation to the set of conditions and outcome and how these were calibrated. However, the two truth tables (based on the two hypotheses tested) are less straightforward as cases were being aggregated. This was even more important when the two contradictory cases were discussed. Lastly, a graphical representation tool to discuss solution formulas and their link back to the cases could have been a useful addition to the paper.

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QCA at the meso-level: Migration and agricultural change (Qin and Liao 2016)

The relationship between migration and agriculture is a key aspect of rural restructuring in China. To date, previous research on the topic has generated mixed and incomplete findings on the effects of rural out-migration on agricultural change, with a proliferation of individual case studies, but no systematic comparative analysis. Qin and Liao (2016) have presented a meta-analysis of case studies using QCA. It is acknowledged in the broader literature that 'the social and economic outcomes of migration in origin areas are highly contingent on local development contexts' (de Haas 2006; Durand and Massey 1992, cited in Qin and Liao 2016: 534). This is why a case-oriented meta-analysis is suitable for identifying *why* the impact of labour out-migration on agriculture is positive in some rural communities but negative in others. The primary purpose of the study was to identify general patterns of migration effects on agricultural production in rural China. The literature review on the Chinese context—as for the developing world—stressed the multiplicity of potential migration effects on agricultural change, indicating that the way labour out-migration influences agriculture is conditioned by the socio-economic and environmental contexts of the areas from which migrants come.

Qin and Liao (2016) adopted QCA mainly to compare and synthesise the data available and to develop empirical generalisations. The dataset consisted of cases referring to a specific study area or community where labour out-migration resulted in subsequent changes in the agricultural sector. Overall, 20 case studies were selected for a systematic review and meta-analysis. The study sites were located in nine provinces and municipalities across different regions of China. The coding of case studies followed a structured and iterative process with the design of a preliminary manual for coding key contextual variables. These guidelines were not fixed but were refined during the review process (in line with Schneider & Wagemann 2010: 7). A full table with the case studies and associated publications was included in the meta-analysis.

Qin and Liao presented a detailed operationalisation of all the constructed variables, providing the reader with a good understanding of all the conditions in

the model. Dichotomous observations were mainly used to determine the attributes of migration effects on agriculture (eight out of ten). The outcome variable 'Impacts of labour out-migration on agriculture in a locality under study' (called 'MigrationImpact') was calibrated as negative ('0') with, for instance, disinvestment in agriculture and/or farmland abandonment; or positive ('1') with, for instance, remittances from labour migrants that subsidised agriculture, increased the scale of agricultural production, and/or offset the negative effects of the absence of labour migrants. Two variables, one on the magnitude of local labour out-migration ('LaborMigration'), and the other on the geographical location of the study site ('Region'), allowed for the inclusion of categorical variables with more than two possible values rather than just dichotomous data. The determination of values for each case was based on the qualitative and quantitative descriptions of the study sites of the selected cases. National average levels (such as for the assessment of local natural conditions 'NaturalEndowments' and the quantity of farmland 'LandResources') were also used in the coding to ensure consistent data extraction. In addition, an effective peer-code review process was implemented with both authors involved in the reviewing and coding of the variables to ensure the consistency of data extraction. This is clearly a beneficial practise, especially when a team of researchers are involved in the building of the database, to guarantee the quality, comparability, and reliability of the data collected.

The full truth table is presented in the article, making the analytical minimisation process highly transparent for the research community. Overall, for the ease of interpretation, six parsimonious combinations of factors were discussed, three related to the positive effects of migration on agricultural change and three related to negative effects. Only minimized solutions were presented for the identification of general patterns of conjoint configurations and for the ease of interpretation. As a result, only a brief note on the logical remainders, consistency as well coverage is included in the table on the results of the QCA analysis. There is also no mention of contradictory truth table rows prior to the minimisation as well little discussion as to the necessary and sufficient conditions that should typically be analysed and discussed separately. Therefore, one could argue that there is a lack of transparency in the way the results were presented, which should be avoided as it is one of the assets of the QCA method with which researchers are expected 'to act, with transparency in his or her choices—selecting variables, processing them, choosing tools for the analysis, intervening during the analysis, and so on'. (Berg-Schlosser et al. 2009: 14).

However, one of the main strengths of Qin and Liao's study is that it goes beyond most other research on rural migration and agriculture (in China and other developing countries), which either adopt a micro-level or macro-level perspective. By implementing QCA at a meso-level, factors that are often overlooked (such as the contextual effects of local or community socioeconomics and environmental characteristics on migration-related agricultural transformation) are part of the analysis. Identifying patterns of multiple conjunctural configurations therefore contributes to a better understanding of the diverse pathways of migration effects on agricultural outcomes in rural China with several different combinations of conditions discussed. This QCA analysis highlighted the role of community contexts in shaping rural restructuring, an insight that can inform evidence-based rural development planning and policymaking. In fact, what the authors have done by implementing a QCA analysis in such a way is to go beyond plain description and provide a 'modest generalisation' (Ragin 1987: 31). As a way forward, the two authors have suggested that their research design could be applied to other settings in developing countries. In addition, the importance of local contextual effects on agricultural change could be tested with the use of alternative methods such as large-scale household surveys to increase the empirical base on the subject. A methodological triangulation would be beneficial to confirm the validity of the findings (Qin and Liao 2016: 540). This would also align with recommendations regarding the triangulation of methods, suggesting that QCA should be applied with other data analysis techniques to draw causal inferences (Schneider & Wagemann 2010). The triangulation of methods would

also open the path for a more integrated approach combining macro, meso, and micro-levels of analysis in order to create a holistic picture of the complex interactions between labour migration and transforming agricultural landscape in China and other developing countries.

QCA at the micro level: Migration and networking in internet penetration in West Africa (Taylor 2015)

Taylor's research (2015) examined factors explaining internet access provision and adoption in Ghana, a country where public sector provision is minimal or even failing. The author paid particular attention to the importance of international mobility as a way for small-scale entrepreneurs—until now a neglected resource in internet penetration policies—to access technological resources and knowledge. The dataset was comprised of survey data gathered from 95 internet cafes in Ghana in 2009. All of the internet cafes in the northern three regions were surveyed (N = 68) together with an additional group of cafes in two districts of Accra (N = 27). Data collected on respondents' past international movements and existing contacts indicated a large diversity of mobility in terms of duration, destination, and aims (Taylor 2015: 433). Respondents' contacts and modes of forming ties were also highly varied. Based on survey results, complemented by qualitative interviews, the author selected the fsQCA method (Ragin 2000; Taylor 2011) to follow different threads of international mobility and networking derived from the initial analysis, with the aim to use QCA not only to test existing theories but also to generate new theoretical arguments (Schneider & Wagemann 2010: 4). For this the author applied a mixed methods approach by combining survey data, qualitative interviews, fsQCA, and social network analysis, each complementary in drawing out causal pathways, which could demonstrate how different groups of respondents manage to provide internet connectivity in marginal areas.

In general, the aim of the QCA method is to highlight configurations of factors that contribute to a single outcome. In this study, the outcome was the operation of a financially viable and functioning internet cafe (but not to the exclusion of outliers—an important consideration where very different strategies appear to proliferate among cases). Two fsQCA models were used in the analysis, based on definition of the outcome variable whether a cafe broke even, or not. The first model was designed to test the classic factors from the literature on small business efficacy and survival in Africa (Frese 2000), whereas a second model specifically examined factors related to mobility. In both models, the same outcome variable was tested ('Breakeven': dichotomous outcome variable). In the first model, four factors (dichotomous and fuzzy) were integrated into the truth table including formal accounts, technical ability, formal education, and broad networks. The calibration of set membership scores was discussed in great detail and based on a specific rationale rooted in theoretical reasoning. A summary of the model was presented in a table with a rationale provided for each of the included variables.

Overall, the solution factors of Model 1 addressed 41 of the 95 cases, showing an interesting and initially counter-intuitive clash between formal education and business skills. The most surprising result in Model 1 was that finishing high school was considered a disadvantage for the cases shown in two solution factors, with broad networks and accounting abilities functioning as substitutes for formal education. In fact, for a number of cases the QCA solutions revealed the importance of having broad networks, with no need for accounting or technical abilities, or educational qualifications, to run successful businesses. This QCA analysis therefore provided grounds from which to reject the often-used argument on the relationship between education and small business development, as it did not provide a satisfactory explanation for the development of internet cafes in Ghana.

Taylor then applied a second QCA model exploring the notion of international connections as a path to breaking even. Four conditions were integrated into the second model (age, having migrated for work, foreign inputs, and contact with non-Ghanaians) with calibrations and specific rationales also discussed in detail.

The solution factors from the second QCA model indicated three distinct groupings more evenly spread between locations, with 23 cases from the northern group and 16 from Accra (39 cases in total). These results highlighted the importance of international networking and indicated that those who migrated for work overseas began to build lasting networks upon their return. It also suggested, through the substitutability of maturity and foreign inputs that younger entrepreneurs who lack start-up capital were using contacts first made online for resources, instead of direct connections forged through travel.

One of the main strengths in Taylor's study is the use of multiple methods, whereby survey, interviews, fsQCA, and social network analysis used in a specific sequence enhanced the validity of the findings. Taylor's approach in using QCA methodology can therefore be categorised as a grounded approach (Jopke and Gerrits 2019). The two QCA analyses highlighted that broad networks (with international ties) were providing local entrepreneurs with the technical and business knowledge they needed to mitigate a lack of education, business, and technical skills. Shortcomings of this QCA application are more technical, such as the lack of a discussion regarding contradictory truth table rows, or the absence of separate analyses of necessary and sufficient conditions. The choice of appropriate levels of consistency and coverage should also be reported (see Schneider & Wagemann 2010: 10).

As Berg-Schlosser et al. (2009) have noted, researchers using QCA make choices during the course of their research for which they should be accountable, opening the 'black box' of formalized analysis (see p. 14). There is therefore a lack of transparency of the choices being made and the causal pathways selected and discussed. While the other two QCA applications (at the macro and meso level) were both deductive, aiming to test some theoretically informed hypotheses using QCA as the main or only method of analysis, Taylor's choice to adopt a multiple methods approach was constrained by spatial limitations that did not allow for its full application nor the presentation of the different steps in the QCA methodology. Therefore, triangulation and the combination of QCA with other methods may come at the cost of analytical depth and lack of room for appropriately discuss the method and findings of a particular study.

Conclusion

QCA is a methodological approach that attempts to "both bridge and transcend the qualitative-quantitative divide in social research" (Ragin, 2014, p. xix). On the one side, QCA requires in-depth knowledge of a sample of cases which can be of different nature, including individuals, communities, firms or entire countries. At the same time QCA is a systematic method for identifying complex cross-case patterns in often mid-sized samples, although QCA may also handle larger sample sizes. In fact there is not an upper limit for the number of cases. However, QCA then competes with statistical analyses, and it becomes increasingly difficult to preserve the case orientation as distinctive mark of QCA. Also, larger samples increase problems of contradictory rows. For larger samples it is therefore even more important to triangulate QCA with other statistical analyses (Vis 2012).

QCA aims to identify cross-case variation and patterns with regard to cases' different causally relevant conditions and contexts and by identifying configurations of necessary and sufficient conditions. QCA allows the assessment of highly complex causal configurations, involving different combinations of causal conditions for explaining an outcome variable.

As a research approach QCA provides some interesting features which can enrich migration and development research in many ways. First and foremost, QCA allows the identification of deterministic causal configurations by sorting out necessary, sufficient and more complex INUS conditions for an outcome of interest. QCA helps to find and describe patterns in the data that can be interpreted as causality, although, like in statistical analysis, where correlation between variables does not imply causation, the causal character of the relation between the configuration of

conditions and an outcome is the theory-informed assumption, not the conclusion. This assumption is warranted by the conceptual knowledge guiding the selection of variables included in the analysis. Case knowledge and a circular back-and-forth between the cases and the analytical solutions is common practice in good QCA research.

A major limitation of the QCA methods is longitudinal dimension. There is not yet a convincing approach to handle case variation *over time*. Obviously, studies often ignore the time dimension and construct samples with cases from different time periods. This approach is problematic for various reasons, but in particular when several cases refer to the same analytical units but to different time periods. Since identification of causality is generally stronger when causes precede effects, QCA methodology should urgently be advanced in this direction.

Obviously, QCA is still a relatively young method. Ragin (2014) confirms that “set-analytic social science is still in its infancy. The Comparative Method was but a first step on an important journey in social scientific inquiry”. QCA has been criticized on various aspects (cf. Collier, 2014; Paine, 2016), but some of this critique has intensified attempts to advance the methodology (Thiem, Baumgartner, & Bol, 2016; Schneider 2016).

In consideration of the strengths and weaknesses of QCA as a method and methodology, future research is well-advised to triangulate QCA with various other methods and to embed it into a more comprehensive mixed methods framework. The unique features of QCA can shed new light on long-standing research questions by challenging assumptions, testing theory, exploring patterns in data, and highlighting complex, non-linear, asymmetric, and interrelated relationships between social phenomena such as migration and development.

As a research approach and analytical method, QCA can enrich the field of migration and development studies. It may refine our understanding of the multiple impacts development processes can have on migration outcomes as well as explain the way complex configurations of migration and non-migration factors may shape development outcomes. Applied at multiple levels, QCA can explain how migration processes shape opportunities, attitudes, and behaviour at the level of individuals and families, but also how these effects in turn influence the development trajectories of local areas and entire nations.

The effects of migration on development, and vice versa, are highly complex and often context-specific so that overall conclusions often reflect fads in academic and policy communities. QCA as an innovative case-oriented approach allows a differentiated disentangling of allegedly puzzling and contradictory effects between migration and development. Insights gained through configurational analysis can enrich the evidence-base and provide some more nuanced policy recommendations which may ultimately contribute to the design of more effective migration and development policies.

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