

## Editorial

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# Building Better Methods in Economic Geography

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**Abstract:** This paper suggests that it is a timely task to aim at building better methods in economic geography. While economic geography is a vibrant field, it is characterized by methodological divides and fragmentations. In presenting a collection of five papers, we address these problems by suggesting to move forward in at least five directions: bridging the qualitative/quantitative divide, clarifying causality, selecting appropriate data, improving rigor, and ensuring high ethical standards.

**Keywords:** Building better methods, causality, data selection, ethics, qualitative/quantitative divide, rigor

**JEL Codes:** B41, C00, R10

## 1 Reflections on Research Practices

Economic geography is a field vibrant in developing novel research questions and ideas. In dealing with new topical areas, the discipline has adopted a toolkit of diverse research methods over time. This diversity has, however, brought about methodological challenges since the types of data and the ways of analyzing them vary considerably in different research practices. While it is important to choose appropriate methods to answer different research questions, methodological diversification comes at a cost. Particularly, the field has become more fragmented into camps that focus on different methodological approaches (Bathelt et al. 2017), and efforts to create common ground have long been demanded (Overman 2004; Wrigley and Overman 2010). In our view, an important task is to narrow down methodological barriers to be able to communicate

across different research streams (Barnes and Sheppard 2010). This does not mean prioritizing one methodological approach over another or simply emphasizing the limitations associated with each. Instead of ‘othering’, we suggest to strengthen rigor in whatever method is applied and to explore complementarities across different approaches.

This special issue of *Zeitschrift für Wirtschaftsgeographie* aims to contribute to building better methods in economic geography that connect data with conceptual arguments in both qualitative and quantitative analyses so as to increase mutual respect and understanding across different approaches. Compared to other disciplines, it is surprising how little attention has been devoted to developing rigorous research methods in economic geography, albeit that the need for this has repeatedly been raised in the past (e. g. Schoenberger 1991; Clark 1998; Tickell et al. 2007; Glückler 2007; Tokatli 2015; Bathelt and Glückler 2018). Based on reflections of research practices and discussions with colleagues in economic geography and other social sciences in recent years, we believe it is important to move forward in at least five directions to address these methodological challenges:

1. *Bridging the qualitative-quantitative research gap.* Since the ‘quantitative revolution’, two methodological camps, one searching for processes and logics through deep understanding of specific cases and the other detecting effects and regularities from a large number of observations, have co-existed in the field and have competed with each other in empirical studies.<sup>1</sup> This methodological divide seems to have blocked off important discussions that could yield new insights. In quantitative analyses, for instance, it is often difficult to interpret and explain the meaning behind numbers and regularities. Without contextual information, it is hard to fully understand and explain the results of an analysis, basically leaving the researcher only with the choice to support or reject pre-specified hypotheses about relationships. In this research tradition,

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<sup>1</sup> Often, quantitative research is being associated with variable-based methods that search for broader regularities in a population and qualitative research with case-based methods that aim to explain or understand typical cases. While this distinction may be plausible, we should keep in mind that in reality there is no clear-cut divide and that larger methodological issues may revolve around large-N versus small-n studies.

the addition of typical cases and stories could help develop more convincing arguments, reduce measurement concerns and contextualize the findings in a better way. Qualitative studies are faced with other difficulties, especially in addressing the question of how to generalize findings in a broader context. In a qualitative research design, quantitative measurements such as frequencies, regularities and statistical tests beyond the specific case may reveal overall patterns in the population and enable the researcher to discuss the representativity of findings. To benefit from such methodological complementarities, scholars in different camps need to embrace each other's research traditions, rather than focusing on the limitations of them. It can be a powerful exercise trying to mix methods in a single research project (Hall 2003). This is often mentioned in passing, but rarely put into practice. To change this, it may be necessary to also rethink the methodological training in economic geography graduate programs.

To narrow the methodological gap, it may be beneficial to experiment with novel methods that connect qualitative and quantitative research: for example, Qualitative Comparative Analysis (QCA). QCA is a quantitative approach to analyze qualitative data that goes beyond identifying the net effects of individual variables (as for instance in regression analysis) and instead looks for configurations of conditions (i. e. patterns in the data) that explain a certain outcome (Ragin 2014). While increasingly applied in political science, management and organization studies, QCA has only recently been picked up in economic geography (Rutten 2019; Li and Bathelt 2020). The question is whether and how related methods can be usefully applied in the field to empirically support better theories. It is this and similar questions that require serious exploration in the future.

2. *Selecting appropriate data.* While past research practices were often characterized by a lack of data, we are now in a situation where processes of collecting and analyzing 'big data' are revolutionizing research practices in many fields (Feldman et al. 2015). New and huge volumes of data on micro-actions of individuals and organizations provide tremendous opportunities to find more convincing evidence to existing theories and develop new ones. The challenge is how we can use 'big data' to answer research questions in economic geography, for instance with respect to regional economic specialization, development and inequality. Such data is not useful *per se* but needs to be selected and applied in conceptually meaningful ways without giving up links to prior research practices and without producing results that lack explanation. Many research areas in economic geography require the generation of new data and the key question is which data to use

for a specific purpose to be able to conduct a meaningful analysis.<sup>2</sup> The advent of 'big data' does not necessarily justify increased emphasis on quantitative approaches either, as there may be an increased need to understand underlying rationales and mechanisms behind the data.

3. *Improving rigor.* We believe there is also a need to update existing toolkits and increase rigor in whatever methods are used, involving a systematic justification and precise description of the empirical strategy applied. In both quantitative and qualitative approaches, it is possible to manipulate data in such a way that desired findings are produced. In quantitative analyses, for instance, p-hacking is a common problem when researchers only care about the statistical significance of their coefficients, counting 'little stars' while neglecting the theoretical significance of findings, or disregarding statistically insignificant results (for problems in very large-N studies, see Lin et al. 2013). Of course, a part of this may be unintentional if decisions are made without having a theory that could lead towards different pathways (Gelman and Loken 2013). Reflections on such practices have led important journals in the social sciences to establish explicit policies not to publish papers that only report cut-off p-values (Schwab et al. 2011; Meyer et al. 2017). In case studies, researchers can similarly claim findings with little evidence provided and it may be difficult to check whether their interpretations are biased by *a priori* assumptions or expectations. Instead of convincing readers with detailed empirical material, many papers overemphasize broad theoretical implications and overinterpret thin evidence. In both of these research contexts, there is a mismatch between the empirical reality and theoretical projection of it. To improve rigor, studies need to develop stronger linkages between empirical data and conceptual arguments, interpret the results of case study research appropriately and address questions of measurement errors or endogeneity in quantitative work.

Another point of concern is the risk of ecological fallacy as the dataset used is often aggregated at a different level than that addressed in the respective conceptual arguments. This can happen, for instance, if we use data at the industrial or regional level to make inferences regarding micro processes (Plantadosi et al. 1988). The unit of analysis in economic geography is often a city, region, cluster or industry. However, these are not real

<sup>2</sup> Data selection is, of course, related to much broader issues of asking relevant research questions and linking them with appropriate data. As such, this aspect is also relevant in qualitative studies. In interview-based research this involves asking well-designed questions in an appropriate interview context, and not necessarily are studies with a large number of respondents better than in-depth case studies.

actors that make decisions and behave in a certain way. The underlying individual and collective actors are the workers, entrepreneurs, firms and government and civic society organizations that act and interact within certain geographical, industrial or other social settings (Bathelt/Glückler 2018). This brings about the risk of ecological bias when using easily available data at a high-level of aggregation to draw conclusions about the underlying individual rationales. How confident can we be in our explanations when drawing conclusions about individual behavior from regional or industry-level regularities?

4. *Clarifying causality.* Although differing in their approach, quantitative and qualitative researchers have the same goal of convincing their readers that a certain event or incidence causes another (Abbott 1998; Mahoney 2008). However, there is a fundamentally different understanding of causality in variable-based as opposed to case-based methods (Fiss 2011) that often leads to confusion, misunderstandings and even hostility between researchers that operate in different traditions. It needs to be clear what the strengths and weaknesses of the respective ontologies of causality are. When aiming to bridge the methodological divide, we may need to think about how the principle of causality differs and what can be done to relate different findings to one another. If the same data generate different conclusions when using two different methodological approaches, should we stick with one method, doubt methodological divergence or accept controversial findings? Answers to such questions will influence whether researchers appreciate the often-juxtaposed implications for policy in different types of approaches.

5. *Ensuring high ethical standards.* In an era of growing populism (Storper 2018; Parnreiter 2018) and ‘fake news’, research ethics becomes immensely important to ensure the highest possible academic standards. Ethical standards can be put in danger when a research project is conducted too close to its financiers or when research practices are influenced by clients, potentially leading to biased results. As such, independence of academic research is an important criterion.

Another important ethical concern is associated with data protection in society and relates to both quantitative and qualitative studies. With respect to the former, it is important to think about the boundary between ‘big data’ availability and individual privacy and to have procedures in place to prevent data leakage. While we applaud the current trend to open-access publishing where researchers are expected to disclose their data and methods, issues of data security and anonymity can become a serious problem when complying to such standards. The other side of the coin is that public census data may be diffi-

cult to use in spatially disaggregated analyses because of missing data that is not released for privacy reasons. And in qualitative research, when asking interviewees to sign a formal consent form, will these individuals be willing to share their own intimate stories with a stranger who shows up like a business partner with a contract or even pays for the information given? If the relationship between the interviewer and the interviewee is a one-time transaction, how deep can dialogues go and how much is the outcome of the conversation influenced if details about the underlying rationale are provided *a priori* (Clark 1998)? In this respect, ethical concerns determine not only whether research projects are acceptable and research subjects protected, they can also impact the results generated.

## 2 Methodological Reflections in Practice

The above methodological challenges point at different ways of how we believe better methods can be built in economic geography. The papers collected in this special issue cover a diverse range of topics, ranging from reflections on research practices to solving empirical research puzzles, yet they have the common focus of ameliorating methodology. They have a shared concern regarding the appropriate choice and use of analytical toolkits in different research settings. Each contribution addresses several of the concerns discussed above, ranging from broader conceptual-methodological to more specific empirical approaches. While readers of this special issue may not agree with all different suggestions made, the papers have been triggered by the joint belief that we need to move forward in strengthening our research methods and practices.

Weller’s (2020) paper sets the tone for this special issue, criticizing the way in which economic geographers sometimes choose the methods they use in their research. She lays out convincingly that the theoretical foundations, methodology applied and policy implications made are not independent from one another but are interlinked. In other words, the choice of a specific theoretical approach and corresponding quantitative or qualitative, variable-based or case-based methodology to solve a research problem may lead to predictable policy implications. It is illustrated that when conducting research about plant closures the policy implications can be quite different because of the different approaches chosen by different researchers (Beer et al. 2019) – although this may not be generalizable across all types of different approaches or theories and research

questions (Lagendijk/Cornford 2020). As Weller (2020) suggests the outcome is particularly problematic if such research is conducted in academic silos and researchers do not discuss their findings with an open mind across different schools of thought and causality. The analysis implies that, in the long-term, academic studies will suffer from aligning their research too closely to specific political constituencies, as their conclusions become predictable. This hurts the research field and opens doors for manipulation. Weller's (2020) analysis illustrates such tendencies by identifying a co-evolutionary pattern according to which research practices follow and adapt to changing policy contexts and demands. The analysis suggests that the key problem in many studies is not a general lack of rigor but that the choice of methodology and alignment with political goals may pre-structure the findings. This raises serious ethical concerns and the question of how to deal with such concerns in our research is clearly an important issue that we need to engage in.

The paper by Glückler/Panitz (2020) picks up on the divide between quantitative and qualitative methods in economic geography and develops a stepwise and integrated empirical strategy to conduct research about the functioning and make-up of social-economic networks in spatial context (Glückler/Doreian 2016). In their Situative Organizational Network Analysis (SONA) approach, value-added is achieved by combining qualitative and quantitative network methods in order to simultaneously explain both the structure and underlying rationale of organizational networks. The challenge of how to conduct meaningful network analysis is situated in the context of relational thinking (Glückler 2007; Bathelt/Glückler 2018). A prerequisite of this approach is that it requires longer-term engagement with the research subject. In the case of organizational networks, the direct contact with the clients of contract research necessitates an ethically responsible approach. This includes holding back information that could be detrimental to the research subjects and not compromising on the empirical strategy. Serious ethical concerns could arise otherwise. Glückler/Panitz's (2020) work directly tackles the qualitative-quantitative divide in the field and illustrates convincingly how different approaches can complement each other to achieve a deeper level of understanding organizational networks. The SONA approach also emphasizes the need to generate data that speaks to different levels of causality. To accomplish this, results from analyzing social network structures are explained and checked through interview techniques, using mixed quantitative and qualitative data at organizational and individual levels to produce more solid conclusions.

Rutten's (2020) paper about QCA focuses on the covariation of structural elements in a configuration-based methodology, pleading for rigor in qualitative empirical research and a strict approach to identify causality. The paper addresses two potential research gaps. First, it tries to overcome qualitative research practices of presenting classifications without an explicit and transparent process of how the corresponding groups are distinguished. Second, it aims to solve problems of variable-based methods such as regression analysis that interpret covariation of data automatically in terms of causality. QCA allows to identify associations between an output variable and different configurations of contextual conditions (Ragin 2014; Thomann/Maggetti 2020; Rutten 2019). In particular, QCA investigates whether both the absence and presence of certain conditions coincides with a certain outcome. While the approach cannot quantify the associated effects and may not convince in a very small-n study, it can produce deep insights into how certain outcomes coincide with different combinations of context conditions (Fiss 2011; Li/Bathelt 2020). While we believe that this can be used as an initial procedure to carefully identify relationships between variables, its fundamental advantage compared to regression analysis is that it is capable of identifying multiple parallel explanations instead of a single one. We expect that much conventional quantitative and qualitative research could benefit from using this approach. However, we have to keep in mind that the quality of results is quite sensitive to careful case selection.

Lagendijk et al.'s (2020) study of intermunicipal cooperation practices in the Netherlands is a perfect example to demonstrate the application of QCA. They put this method in an interesting geographical/planning context addressing the question as to why some intermunicipal collaborations are effective and others not. Rather than doing this in a regression-based study or in a discursive or interpretative account, the authors chose to use QCA. Their study clearly illustrates that there is no one-size-fits-all approach to successful collaboration but that different political, institutional and socio-cultural conditions can have similar outcomes. This enables the authors to develop a comprehensive understanding of intermunicipal collaboration processes. The study is also an example of how careful conceptualization and consequent data generation in terms of contextual variables enables a consistent analysis with thoughtful explanations (Li/Bathelt 2020). Overall, this research illustrates how rigor can explicitly be employed in qualitative work making this an attractive approach for quantitative researchers. It also demonstrates the advantages of this qualitative methodology over deterministic quantitative approaches.

The study by Zhu et al. (2020) on learning in context describes a Structural Equation Modeling (SEM) approach that, despite being quite different in nature, shows some parallels to QCA by exploring different configurations to generate insight into an empirical subject. In a study that investigates how knowledge acquisition processes at trade fairs may depend on the context within which economic actors are embedded (Bathelt/Gibson 2015), the paper investigates the role of different geographic context conditions. This method, which was originally developed in the 1970s in the social and behavioral sciences, enables researchers to study complex multistage economic processes, such as learning, that involve latent variables that cannot be directly measured. Zhu et al. (2020) first use a SEM approach to generate a model that breaks down complex learning processes into smaller subprocesses across interconnected stages. Second, the overall dataset is split into different groups and systematic analysis is conducted to see how knowledge acquisition varies across different sets of context conditions. While an interesting approach that tries to move away from case study rationales toward large-N investigations, Zhu et al. (2020) also indicate that causality claims have to be made with care and may require additional data. Overall, SEM appears to make most sense in combination with qualitative research to illustrate how the findings from a case study can be generalized beyond the case. The approach may also be applied as an initial step to test causality models, and results may be used to design qualitative follow-up studies that aim to explain underlying processes in a mixed-methods approach.

### 3 Moving Forward

Methodological diversity, in economic geography like in other social sciences, brings about challenges in developing accepted standards of evaluating research output and associated implications. In the past it has been easy for one methodological camp to criticize the limitations of and thereby reject other approaches, instead of choosing the difficult route of trying to find common grounds by exploiting complementarities and exploring the potential for collaboration (Bathelt et al. 2017). To overcome such divides, we believe it is necessary to seriously and constructively think about potentials of methodological and theoretical pluralism in our thinking and research (Martin 2020). Fundamentally, whatever methodological approach is being adopted, we emphasize in this special issue that we are facing similar challenges of conducting innovative

and rigorous research in our attempts to convince readers of the relevance and significance of our endeavors. In the introduction to this special issue, we would like to highlight these common challenges for building better methods in economic geography and insist that in moving forward it will be important to engage with bridging the qualitative/quantitative divide, clarifying causality in empirical research, selecting appropriate data, improving rigor in whatever methodological approach we choose, and ensuring high ethical standards in this work. With this, we believe the cost of methodological diversification can turn into an advantage for the field of economic geography.

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