

Examining Deliberation – Meta-Analysis of Case Studies

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How to Accumulate Knowledge from Case Studies?”

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Abstract:

Despite the insight that studies systemizing findings of case studies on deliberative procedures are needed for generalization, hypothesis testing and theory development, this approach is still rare. The few systemizing studies, which try to combine the findings of case studies, are up to now – with few exceptions – narrative synopses. These narrative synopses are helpful, but are unable to provide a big picture about effects of deliberative procedures (dependent variable) and their determinants (independent variable). The purpose of this paper is twofold: First, we discuss how findings of case studies can be combined meaningfully in a large-n meta-analysis. Second, we present the steps of our meta-analytical pilot study investigating (the determinants of) effects of dialog-oriented citizen participation at the local level in Germany.

In contrast to traditional meta-analyses that focus on calculating effect-sizes from quantitative data, we introduce a new systematic methodological approach that allows transforming qualitative information into quantitative variables. The coding scheme includes several dependent variables representing the effects of deliberative procedures on individual participants (micro), on deliberating groups (meso) and on policies as well as on the whole citizenry (macro). Numerous independent variables represent context, stakeholders, and design.

Keywords:

Meta-analysis, methodology, quantification, case studies, democracy, deliberation, deliberative democracy, citizen participation

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Introduction

Deliberative – more precisely dialog-oriented² – participatory procedures are proliferating worldwide (e.g. participedia.net) and a variety of hopes are pinned on these procedures. They are for example expected to improve the knowledge of participants, enhance communication and lead to better policy making. Opponents, however, argue that dialog-oriented procedures are at best meaningless and could even have detrimental effects, because mainly well-off social strata participate and will push through their interests. Recent studies, yet, have shown that this polarizing debate is misleading. It is no longer the question whether deliberative procedures do “work or not work” and whether they have “good or bad” effects. We can observe a variety of different procedures producing a variety of different effects. Accordingly recent scholars pointed out the necessity to examine specifically, which procedures have which effects in which context and which determinants are decisive (e.g. Geissel 2009a: 65f; Thompson 2008; Mutz 2008).

In spite of this insight, the case study approach still prevails in research on dialog-oriented procedures taking place in the ‘real world of politics’.³ With few exceptions (see below) scholars examine one or a small number of cases. Although this research was necessary to structure the new research field, we are now entering a new scholarly phase. Systemizing research is needed, which allows for generalization, hypothesis testing and theory development.⁴ The few systemizing studies, which try to combine the findings of case studies, are up to now mainly narrative synopses (e.g. Goodin/Dryzek 2006; Delli Carpini et al. 2004). These narrative synopses are helpful, but are unable to provide a big picture about actual effects of deliberative procedures and, even more important, do not provide information about decisive factors leading to these effects.

This paper introduces a new methodological approach, i.e. a statistical meta-analysis of case study findings. The purpose of this meta-analytical approach is to accumulate “the

² We use the term “deliberation” or “deliberative procedure” only in the context of theoretical debate. When referring to ‘really existing’ procedures we apply the term “dialog-oriented” procedure (see for this debate e.g. Talpin 2013).

³ Experimental studies on deliberative procedures apply per se more systematic approaches, in which groups get different treatments (e.g. Baechtiger 2005; Grönlund et al. 2010). This experimental research is important and goes beyond case studies but since these experiments have by definition no effects on policy-making, only effects on individual participants and developments within the deliberating group can be studied.

⁴ Three strategies to aggregate research findings are possible: 1) large-n-case-studies, 2) case studies using a standardised, commonly accepted analytical scheme or 3) meta-analyses of case studies (Newig et al. 2013, 4). Whereas the first strategy requires abundant financial resources, the second option needs an analytical framework accepted by and referred to the entire relevant research community. Both options are currently less likely feasible.

intellectual gold of case study research” (Jensen/Rodgers 2001). We assume that knowledge contained in case studies can be aggregated, but we are aware of a multitude of challenges accompanied by this approach. The question we want to answer in this paper is whether and how a meta-analysis can accumulate findings of case studies on deliberative procedures. In other words we will examine whether a statistical meta-analysis is able to provide a comprehensive picture about effects of dialog-oriented procedures and their determinants. The paper explains how a statistical meta-analysis of case studies works, describes a pilot study trying out this new method and discusses challenges. We refer to a meta-analytical pilot study currently performed at Goethe University Frankfurt, Research Unit ‘Democratic Innovations’ and funded by the German Research Foundation, DFG. The pilot study examines the effects of deliberative procedures in Germany – namely Participatory Budgeting⁵ and Local Agenda 21⁶.

Accumulating the intellectual gold of case studies is a pressing demand not only for academia but also for the world of real politics. From an academic point of view, it is necessary to ground arguments of theories on deliberative democracy empirically. Based on empirical knowledge, these theories can make progress. For ‘real politics’ it is necessary to systematically evaluate the merits, risks and determinants of participatory dialog-oriented procedures. Accumulated, generalizable findings can be translated into guidance for political authorities considering the implementation of dialog-oriented procedures.

In the next chapter, we describe the need for case study aggregation and the expected benefit of a meta-analytical approach. Then we give a short overview on the state of the art of how to analyse case study findings on deliberative procedures systematically. Finally, we describe the pilot study, its research question and hypotheses as well as the steps of research including challenges and solutions (selection of studies, data coding, methods of

⁵ Participatory budgeting procedures in Germany allow citizens to take part in the debate about how to allocate parts of the municipal budget, i.e. citizens’ advice-giving to the decision-making bodies. A variety of participatory formats can be applied, for instance online moderated discussions, district meetings and workshops. A typical participatory budgeting procedure is characterized by three steps: information (1), consultation (2) and accountability (3). Firstly, information on local budgeting is provided; secondly, citizens are invited to make and discuss proposals for budget planning and finally, decision-making authorities justify their decisions on local budget with regard to citizens’ proposals and discussions.

⁶ At the Rio Earth Summit in 1992, Agenda 21 was promoted as the global action program for sustainable development. The purpose of Local Agenda 21 (LA 21) procedures is to encourage local authorities promoting more environmentally, socially and economically sustainable communities. As participatory budgeting, a variety of formats can be applied, e.g. agenda forum, agenda groups, agenda projects, district meetings, round tables, consensus conferences and future conferences. Local Agenda 21 procedures – similar to participatory budgeting – have no decision-making authority, but can offer advice to representative bodies which have the final say.

analysis, challenge of missing data). In the conclusion, we summarize our methodological findings.

Case studies and the need for aggregation: A meta-analytical approach

Case study research is generally conducted on new phenomena when limited information is available and it focuses on generating hypotheses (Gerring 2007; Peters 1998). Until recently, this approach has made sense in the field of dialog-oriented procedures, because these procedures were relatively new phenomena and it was still necessary to generate new hypotheses.⁷

However, research on dialog-oriented procedures has now reached a phase, in which priorities should shift from generating hypotheses to testing the abundance of existing hypotheses. In this phase we aim at reaching generalizable results about effects and determinants. Since “success or failure of deliberation depends so much on context” (Thompson 2008, 499) it is now widely acknowledged that “the most promising approach ... would ...be ...to discover the conditions in which deliberative democracy does and does not work well” (ibid. 500). In other words: The current task of research is to identify the “requirements” which lead to effects of deliberative procedures (Mutz 2008, 531; Geissel 2009a). A main disadvantage of the case study method is the lack of generalisability and the blindness for context dependence, i.e. the lack of information about independent variables and requirements influencing the effects of deliberative procedures (Newig/Fritsch 2009c). Both characteristics – generalisability and knowledge about determinants, i.e. context dependence and requirements – are necessary to test hypotheses and to advance existing theories. Thus, the question is no longer, whether deliberative participatory procedures “work”, but to examine thoroughly and systematically which kind of participatory deliberative procedure has which effects in which context influenced by which determinants. But how can the up to now scattered findings be accumulated? In this paper we suggest a methodological approach novel in this field, namely a statistical meta-analysis. Defined as a research design that combines data from a set of primary studies mathematically, meta-analysis seems appropriate also for combining findings of a large amount of case studies (so called large-n). To combine these findings scholars have to transform case studies’ findings

⁷ Within deliberative theory an intensive discussion has started about the question whether it is really possible to develop hypotheses out of deliberation theories and to test them empirically (Rosenberg 2007). Mutz (2008) asked for example, whether deliberation theories are “falsifiable theories” at all, because they are too vague and too unspecific to be broken them down into hypotheses.

into 'numbers', i.e. data that are statistically analyzable. By aggregating and analyzing a huge amount of case studies a meta-analysis will identify general or frequently returning results, detect patterns and recurring correlations as well as contrast inconsistent findings.⁸ Based on a meta-analysis wide-ranging generalizations are possible – conclusions that would not be possible by single case-studies or by narrative synopses.

However, meta-analysis⁹ of case studies is not an easy task. Findings of mostly qualitative studies cannot be transformed into a meta-analytical data set that easy – they need special 'transformation' and 'handling', which will be discussed below.

Systematic analysis of case study findings on deliberative procedures

In recent years a few attempts have been made to systematize and analyze case studies on dialog-oriented procedures. Most of these studies are available as narrative synopses¹⁰, presented as text (e.g. Dietz/Stern 2008; Delli Carpini et al. 2004; Chess/Purchell 1999; Coglianesi 1997) and/or they are limited to specific aspects. A few systematized studies focus on effects on the individual participant (micro-level), mainly on micro-sociological and psychological aspects such as change of participants' preferences or gain of knowledge (e.g. Rosenberg 2005; Delli Carpini et al. 2004¹¹; Fishkin 1999). Mostly experimental research has been conducted on interactions and developments within deliberative groups (meso-level).¹²

⁸ Meta-analysis became famous during the 1980 and has been applied exponentially – but only in medical science and natural sciences (Lyons 2003). These scientific disciplines have recognized that the explosion of scientific research goes hand in hand with a lack of overview, often leading to wrong, inefficient decisions (Wagner/Weiß 2006: 480). However, the explosion of knowledge is by far not limited to medicine and natural sciences. Also social sciences are facing the same problem (e.g. Wagner/Weiß 2006; Larsson 1993).

⁹ To assess the quality of a systematic review of data, Garg/Hackam/Tonelli (2008, 255f) developed a set of questions to be answered, for instance "Was the method of identifying all relevant information comprehensive?", "Was the data abstraction from each study appropriate?" and "Was the information synthesized and summarized appropriately?". Russo (2007, 638) established a whole checklist for reviewing meta-analyses including "the development of the study question; methods of literature search; data abstraction; proper use of statistical methods; evaluation of results; evaluation for publication bias; sensitivity analysis; and applicability of results".

¹⁰ Another term for narrative reviewing of case study data is meta-synthesis. Meta-synthesis "is defined as an exploratory, inductive research design to synthesize primary qualitative case studies for the purpose of making contributions beyond those achieved in the original studies" (Hoon 2013, 2).

¹¹ Delli Carpini et al. (2004) summarized a large number of these micro-level studies and gave a comprehensive narrative synopsis. They concluded that deliberation in participatory procedures often has positive effects on the participants; participants develop for example more tolerance or more trust in democratic processes (ibid: 320). However, the effects depend heavily on the design of the procedure and on the context (ibid: 336).

¹² These studies found out, for example, that binding social capital was often built within the groups. However, also the development of social capital depends heavily on the context and the design of the procedure (Holtkamp et al. 2006: 177 ff.; for case studies on the issue: Saturra 2005: 109; Wolf 2005: 206; Gehrlein 2004: 70; Pamme 2004: 185; Drewes 2003; Raymond 2002; Gansen et al. 2001; Feindt et al. 2000: 218, 237; Teubner 2000: 48).

Research about effects on the macro-level is rare. There are few case studies and even less research was done comparing these case studies (e.g. Geissel 2009a, Geißel 2008; Newig/Fritsch 2009a/b; Goodin/Dryzek 2006).¹³

Systematic meta-analyses allowing for statistical analysis are just starting: Renn, for example, investigated attitudes regarding genetic engineering (METAGENA); Newig examined deliberative procedures in the context of environmental politics (ECOPAG, Newig/Fritsch 2009a, Newig et al. 2013); Ryan and Smith systematized participatory budgeting procedures using the method fs-QCA (Ryan/Smith 2011, Ryan 2014). However, these few systematic analyses are limited to certain topics. What is missing up to date is a systematic meta-analysis of a variety of dialog-oriented, participatory procedures. The pilot project aims at bridging this gap in research.

Pilot project: Research questions and hypotheses

In the pilot project we use an explanatory approach¹⁴ by formulating the following main research question: Which dialog-oriented procedure had which effects in which context, constellation of actors and case design?

Elaboration and operationalization of this research question are based on participatory and deliberative democratic theory as well as on available empirical case studies. To measure the effects of dialog-oriented procedures (our dependent variable/s), we distinguish between three levels of analysis: effects on the participating individual (micro), on the deliberating group (meso) and on policies as well as on the whole citizenry (macro).

Micro-level effects cover changes in participants' political skills, attitudes, and behavior. The aim is to measure for example a change in participants' political and issue knowledge, acceptance of political institutions and perceived political legitimacy, external and internal efficacy (Vetter 1997, Grönlund et al. 2010), or tolerance. To show an example for operationalization: improvement of perceived political legitimacy is quantified by an increase or decrease in participants' acceptance of local political decisions, of institutions of

¹³ They show that participatory procedures hardly ever influence policies directly and do in few cases influence public debates.

¹⁴ In contrast to exploratory studies which answer questions of what, where, when, who and how, an explanatory study focusses on questions of why. Thus, explanatory studies aim at explaining things and/or relations of things. In general, these studies test hypotheses, try to verify or falsify insights and are interested in generalizations and making general statements.

representative democracy (such as mayor and city council) and of politicians (such as mayor in person and city council members).

Effects at meso-level cover group-related effects, i.e. effects on the deliberating group. We emphasize like most studies in this field on ‘quality of deliberation’, ‘social capital among participants’ as well as ‘inclusiveness’. The variable ‘quality of deliberation’ measures whether interactions in dialog-oriented procedures change towards more respectful interactions with equal voice¹⁵ (see Bächtiger, Wyss 2013), more argumentative rather than rhetoric interactions, more objective information (factual) rather than subjective information (opinion, judgment, belief) (see Kolleck 2015), a more “public-spirited view” (Mutz 2008, 530), and whether participants’ interactions change from monologue towards discussion (see Klinger 2014, 68). To measure how well dialog-oriented procedures contribute to bridging or bonding social capital, we ask how trust and network was built up within the group.

The criterion ‘inclusiveness’ is a tricky one. On the one hand, it refers to the descriptive representativeness of the group, i.e. fair distribution of gender, age, education, income and so on. Descriptive representativeness depends mainly on the selection mechanism of participants. Self-selection mostly leads to severely biased participation; random selection or targeted recruitment enhances the chance of descriptive representation. On the other hand, ‘inclusiveness’ is in some publications not limited to group composition, but considered as a ‘macro-level effect’. From this perspective ‘inclusiveness’ of the dialog-oriented procedure implies improved political inclusiveness at the macro-level and entire citizenry (integrative function, e.g. Michels 2011, 278).

Effects at macro-level cover the influence on political decision-making (output)¹⁶ and on outcome (e.g. sustainable development) as well as effects on the entire citizenry (not just on participants of the procedure) (Rowe et al 2004; Geissel 2009b, 404; Abelson/Gauvin 2006, 22). The influence of dialog-oriented procedures is measured by the influence of the suggestions of the deliberating group on will formation and decision-making in representative bodies. We also scrutinize whether dialog-oriented procedures reach their

¹⁵ This refers to the equal opportunity of participants to express their views and to be heard (e.g. Smith 2009, 20f.).

¹⁶ Whereas direct democracy and co-governance procedures mostly affect the decision-making bodies directly, dialog-oriented procedures are only consultative and offer advice to representative bodies which have the final say.

goals considering the outcome, e.g. in the case of Local Agenda 21 a sustainable development.

The effects of dialog-oriented procedures on the entire citizenry beyond participating citizens are quantified by examining the ‘change of citizenry’s democratic skills’ and the ‘change in citizenry’s political attitudes’. We measure for example, whether citizens’ identification with municipality, citizens’ perception of transparency, citizens’ interest in local politics, and citizens’ civic engagement improved or declined. Table 1 gives an overview concerning the operationalization of our dependent variables.

Table 1: Dependent variables: Conceptualization and examples for operationalization of effects of dialog-oriented procedures at micro-, meso- and macro-level,

Operationalization of dependent variables
<p>Effects of dialog-oriented procedures regarding individual participants (micro-level)</p> <ul style="list-style-type: none"> • Change of participants’ skills • Change of participants’ political attitudes • Change of participants’ political behavior
<p>Effects of dialog-oriented procedures regarding deliberating groups (meso-level)</p> <ul style="list-style-type: none"> • Quality of deliberation among participants • Social capital among participants • Political Inclusiveness: ‘Equal participation’/Descriptive representation within dialog-oriented procedure
<p>Effects of dialog-oriented procedures regarding policies and citizenry (macro-level)</p> <ul style="list-style-type: none"> • Effect on policy (output) • Effect on outcome (e.g. sustainable development) • Change within entire citizenry • Political Inclusiveness: ‘Equal participation’ within entire citizenry

Source: Provided by the authors

A huge amount of hypotheses can be found in deliberative theory and in empirical research with respect to factors influencing the effects of dialog-oriented procedures, partly vague and partly precise. In the pilot project we chose those hypotheses which can be actually tested by using available case study data. We structured the variety of allegedly decisive factors along three dimensions: context (socio-economic context of the community), stakeholder (actors involved) and design of dialog-oriented procedures (planned recruitment of participants, planned facilitation within the procedure, plans considering transparency as

well as accountability actions of policy makers). These are some examples of selected hypotheses: if a professional moderator is provided in the dialog-oriented procedure, quality of deliberation will be better; if participant recruitment addresses politically less active groups, bridging social capital among participants will improve; if the communication style between politicians, administration and citizenry is cooperative within a community, the dialog-oriented procedure will have more influence on policy. Table 2 gives an exemplary overview on the hypotheses regarding decisive factors (context, stakeholders, design of procedure).

Table 2: Examples of hypotheses at micro-, meso- and macro-level

Independent variables →	context	stakeholders	design
Dependent variables ↓			
INDIVIDUAL PARTICIPANTS (micro-level) Participants' acceptance of local political decisions will improveif community is not polarized and fragmented.	... if local politicians participated in the procedure.	... if tools to guarantee transparency (e.g. planned publication) are provided.
DELIBERATING GROUP (meso-level) Quality of deliberation among participants will be better if community has experience with dialogue-oriented procedures.	... if policy makers are interested in dialogue-oriented, participatory procedures.	... if a professional moderator is provided.
POLICIES AND CITIZENRY (macro-level) The dialog-oriented procedure will have more influence on policy if procedure is supported (financial, infrastructural) by the state.	... if the communication style between politicians, administration and citizenry is cooperative.	... if the participatory procedure is institutionalized.

Source: Provided by the authors

Pilot project: Selection of studies and data coding

The larger the sample of cases and (scientifically reliable) case studies, the higher is the validity and reliability of the findings of a meta-analysis. In our pilot project we try to analyze

the entire universe of case studies on dialog-oriented procedures with reference to Participatory Budgeting and Local Agenda 21 in Germany.¹⁷

Generally a meta-analysis tries to solve the problem of how to accumulate outcomes of case studies within different approaches effectively by “converting case study outcomes to a common metric through standardization” (Jensen/Rodgers 2001, 241). Thus, we developed a comprehensive codebook with an operationalization based on participatory and deliberative democratic theory as well as on available empirical studies. The codebook structure reflects our research question and hypotheses and is therefore divided in the following manner:

- independent variables: context, actors, design
- dependent variables: effects at individual participant (micro), deliberating group (meso), policies and the whole citizenry (macro).

Within our coding scheme we use three approaches for converting case study findings into a common metric: breaking down case study data into discrete phenomena (1), using author’s impressions (2), and using coder’s impressions (3). The first approach means to transform information into concrete, explicit indicators, for example the number of procedures’ participants or the number of proposals implemented by policy makers (see table 3 for more examples). If a case study does not provide sufficient information that allow a breaking down into discrete phenomena, coders are asked to use author’s impressions: For example, if data on the quality of deliberation is not available in a case study, we code the author’s evaluation of group interactions resulting (see table 3 for more examples). Within the third approach, coders’ assessments are coded. Coders are asked to evaluate case study information by their own impressions, if due to missing information the first and the second approach are not applicable.

Within the code book, we predominantly apply five-point rating scales. This scaling allows to gain more accurate results than four-point (lacking a middle position) or three-point (lacking sufficient differentiation) rating scales. Five-point rating scales also permit the application of more complex statistical tools¹⁸ than scales with fewer values. Two-point rating scales are used to indicate the presence or absence of a certain characteristic, e.g. the existence of an

¹⁷ We developed a searching strategy consisting of different keywords such as for example ‘Participatory Budgeting + Germany’ and ‘Local Agenda 21 + Germany’ and using different sources such as for instance Jstor, Social Science Citation Index, specific websites and appropriate publishing houses to gather every study on dialog-oriented procedures at the German local level that is published.

¹⁸ Five-point rating scales provide sufficient differentiation between variable values for which reason metric-related statistical tools such as for instance calculation of average and linear regression can be applied.

information phase within the procedure (PB or LA 21) or the planned involvement of a moderator (see table 3 for more exemplary variable values).

Table 3: Code book structure with exemplary variables

Variable name	Scale	Variable explanation	Variable values
General information (independent variables)			
decision_council	bin.	City council decision to conduct PB/LA-21	0: no 1: yes
Municipality context (independent variables)			
municipal_size	ratio	Municipal population	figure
Procedure context (independent variables)			
procedure_staff	bin.	Does the local administration provide staff especially for the procedure (PB or LA 21)?	0: no 1: yes 98: n/i
Stakeholder/actors (independent variables)			
procedure_support_city_council	ratio	Author's impression of degree of procedure support (engagement for procedure) by city council members	0: no support ... 4: very strong support 98: n/i
Case design (independent variables)			
partici_select	nom.	Method of participant recruitment	1: open to all/self-selection 2: targeted recruitment (e.g. appointed, invited) 3: random selection 4: stakeholder recruitment 5: election If mixed, name all ...
Effects (dependent variables)			
knowledge_issue	ratio	Author's impression whether issue knowledge of participants improved.	0: no improved knowledge ... 4: substantially improved knowledge 98: n/i
delib_quality_implement	bin.	Are there any rules concerning the communication process (online, face-to-face) implemented?	0: no 1: yes 98: n/i
effect_policy_aut	ratio	Author's impression: How strong was the effect on policy-making (output)?	0: no effect ... 4: strong effect 98: n/i

Source: Provided by the authors

In the pilot project, each case study is coded by at least two coders. This proceeding ensures a higher reliability of the coding process and coded data (see for the debate on inter-coder

reliability e.g. Cho 2008).¹⁹ During a pretest both coders discuss and comment on occurred discrepancies in coding to guarantee a similar understanding of the used codes within the coding scheme. In our case inter-coder reliability as important indicator of coding quality is measured by Cohens *kappa* and Krippendorff's *Alpha*.²⁰

Pilot project: Methods of analysis

Within a systematic large-n meta-analysis of case studies the concrete statistical tools need to be chosen carefully. Whereas in traditional meta-analyses statistical techniques refer predominantly to a comparison of so called effect sizes such as mean values, correlation coefficients or standard deviation values, they are not available in case study data. Instead referring to effect sizes, the codes developed from available information are used for e.g. variance or regression techniques.

According to our research questions and hypotheses, we divide the analysis of case study data into three steps: In the first step, we conduct some basis descriptive analyses to gain an overview of all coded cases. Here, we calculate frequencies, topics and participation figures of dialog-oriented procedures. In the second step, we conduct bivariate analyses to investigate several kinds of relationships between variables. For instance, we calculate which context characteristics and which design characteristics as well as which stakeholder characteristics correlate with which effects on individual participant (micro), deliberating group (meso) and policies as well as the whole citizenry (macro). This allows the testing of some of our hypotheses.

In the third step, we run various variance and regression analyses to identify which independent variable or which set of independent variables influences micro-, meso- and macro-level effects. For example, we test,

- whether the implementation of an information phase or the support of administrative staff affects the improvement of participants' political knowledge within the dialog-oriented procedure (micro-level).
- which independent variable – e.g. municipal experience with dialogue-oriented procedures; cooperative communication style between politicians, administration

¹⁹ “High levels of disagreement” among coders “suggest weaknesses in research methods, including the possibility of poor operational definitions, categories, and ... training.” (Kolbe/Burnett 1991, 248).

²⁰ Both indicators are widely used and interpretation criteria are available.

and citizenry; provision of a moderator – affects the quality of deliberation (meso-level).

- whether a clear plan for accountability, the inclusion of local politicians or a local participatory tradition have the strongest influence on transparency in political decision-making (macro-level).

Pilot project: Challenge of missing data

A generalization of findings across all studies included in a meta-analysis of case studies is only possible if all case studies contain information on dependent and independent variables scholars are interested in. For example, if a meta-analysis aims at examining the influence of participatory budgeting on policy making, case studies must give information on influence, e.g. on decision of policy makers. If, for example, the purpose of a meta-analysis is to explain the influence of Local Agenda 21 on participants' skills, information on skills of participants before and after joining the procedure is needed.

However, often case studies do not provide all information needed to test all our hypotheses (regarding dependent variables as well as independent variables). Most case studies just provide a small amount of data, which leads to many missing data in our dataset.

Whereas in traditional meta-analyses an imputation of incomplete data is possible, predominantly by statistical estimation techniques²¹, a meta-analysis of case studies does not provide feasible or merely poor strategies for imputing data²². Thus, in meta-analyses of case studies, the best way of how to cope with missing data is collecting additional information.

In our pilot study we use additional publications such as administrations reports, information on websites or reports from external experts. If the information provided by these additional publications does not suffice, we conduct interviews with studies' author(s) and involved actors (participants, administrative staff, moderators and so on). This is a very time-consuming solution to meet the challenge of missing data, but there is no other option to

²¹ Statistical estimation techniques calculate missing data based on available data, for instance by using mean values or regression models. This, however, requires that information is missing at random. When data is missing non randomly, statistical models for imputation do not exist (see for instance Eisend 2014, 25).

²² For example, a poor strategy would be the use of one common imputed value, predominantly zero, for all missing values. In meta-analyses of case studies there is often not enough information to impute missing data statistically, for example, in various case studies on deliberative procedures outcomes are not reported. This limited information on outcome impedes an estimation of statistical models regarding missing values.

fulfill the goal of providing a comprehensive data set for hypotheses testing and developing enhanced, empirically grounded theoretical approaches.²³

Conclusion

The paper has demonstrated the need for more advanced, aggregating methods in research on dialog-oriented procedures. It discussed whether and how meta-analysis could be a useful method to accumulate the “intellectual gold of case studies” and generate reliable, valid results beyond a single case study. Although findings of case studies can be combined meaningfully in a large-n meta-analysis, we have illustrated the diverse challenges and described possible solutions. We showed that every systematic large-n review of case study data aiming at generalized findings needs to meet at least five challenges:

1. The first challenge alludes to the formulation of the research question as well as the theoretical hypothesis-generating. The research question needs to be transformable into testable hypotheses, which again are examinable and testable.
2. The second challenge is the selection of primary studies. Scholars must decide which selection strategy is useful, for example randomized case selection or analyzing the entire ‘population of studies’ on respective cases.
3. The third challenge is the coding of case study data in order to accumulate the data effectively. We discuss three possible solutions: breaking down case study data into discrete phenomena, coding author’s impressions, and coding coder’s impressions.
4. The fourth challenge refers to the statistical tools applied in the final analysis. The challenge here is to decide which statistical tool is most appropriate, for example variance or regression techniques.
5. Finally, the fifth challenge adverts to coping with missing data. We offer three solutions for gaining missing information: collecting additional publications (not only scientific case studies), interviewing studies’ author(s) as well as people, who were involved in the respective dialog-oriented procedure (e.g. participants, staff).

²³ The simplest way how you can see that meta-analyses lead to theory building is the accumulation of findings about relationships between variables or a set of variables (=hypotheses) (Yang 2002, 301). In this sense, the confirmation or disconfirmation of current hypotheses (and/or the search for alternatives) aims at determining the trustworthiness of theory (Storberg-Walker 2003, 213f; more general Lynham 2002).

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