Enhancing Methodological Reporting in Public Administration:

The Functional Equivalents Framework

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Abstract: Public administration scholarship reflects a multidisciplinary field in which many theoretical perspectives coexist. However, one of the dark sides of such theoretical pluralism is methodological fragmentation. It may be hard to assess the research quality and to engage with the findings from studies employing different methodologies, thus limiting meaningful conversations. Moreover, the constant race across social sciences to make methodologies more sophisticated may exacerbate the separation between academic and practitioner audiences. In order to counterbalance these two trends, the paper aims at increasing *methodological intelligibility* in our field. It does so starting from the idea that each methodology entails choices in the conventional phases of research design, data collection and data analysis, and that these choices must be reported. The paper nails down and exemplifies such reporting needs for five selected methodologies: survey studies, quantitative experimental studies, quantitative observational studies, qualitative case studies and ethnographies. Based on their discussion and comparison, the paper offers a framework composed by *functional equivalents*, that is to say, the common denominator among methodological reporting needs. Methodological choices that need reporting include the rationale for the selection of a methodology, delimitation of the study, the research instrument, data processing and ethical clearance. Increasing methodological reporting would facilitate dialogues among different methodological communities, and with practitioner readers. All of which would also promote field building in the scholarship of public administration.

Keywords: reporting, methodologies, research methods, research traditions.

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Public Administration (PA) scholarship has evolved as a broad and multidisciplinary field (Riccucci, 2010; Raadschelders, 2011a; van Thiel, 2014; Andrews & Esteve, 2015; Pollitt, 2016). In contrast with literatures characterized by stronger disciplinary homogeneity, scholars here draw from a variety of research traditions and methodologies to answer an array of questions that, ultimately, advance our knowledge of public issues (Riccucci, 2010; van Thiel, 2014). Bringing such diversity to bear has enriched and will likely continue to enrich (Ferlie et al. 2005) our understanding of complex phenomena by composing a "mosaic […] of conceptualizations about government" (Raadschelders 2011b, 147). Together with these advantages, however, it generates two main 'costs of methodological diversity' (Nesbit et al., 2011, p. 17). On the one hand, it reinforces the tendency of different methodological paths to unfold in parallel (Abbott, 2001). The resulting methodological silos across academics foster fragmentation and reduce opportunities for cross dialogue. As vividly captured by Pollitt, the key difference "between pluralism (the upside) and fragmentation (the downside) [is that] in pluralism the different groupings talk to each other while in fragmentation they do not" (2016, p.4).

Furthermore, fragmentation could also widen the gap between theory and practice (Bowman, 1978; Ospina & Dodge, 2005; Bartunek, 2007). Making research methodologically more robust, of course, should not entail greater distance between policymakers and academics. But the frequent lack of methodological reporting[1] associated with strengthened methodological sophistication is likely to make academic findings harder

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[1] By methodological reporting we refer to the explicit account of methodological choices. These include the selection of research method(s) based on the research question as well as the decisions and details connected to data collection and data analysis.

to evaluate and assess, "resulting in compartmentalization of knowledge and, possibly, an alienation of practice from the study" (Raadschelders and Lee, 2011, 26). Illustrative of this risk, some of our academic articles tend to relegate the interaction with practitioners' readership to a set of more or less sketchy policy implications, asking them to trust our conclusions rather than offer guidance on how to navigate the research project. Hence, this study addresses what seems to be an important paradox: how to embrace methodological sophistication in PA research, while also making it more accessible both for academics and practitioners.

We argue that the aspiration to cultivate a meaningful exchange between researchers and practitioners (Ospina and Dodge, 2005) is not only rooted in the origins of our field but also crucial for its future developments, which "rest with providing an understanding of the wicked, complex societal problems confronting civil servants and political officeholders" (Raadschelders, 2011b, 921). A way forward is contributing to practitioners' publications, such as blogs, think tanks reports, policy briefs and professional journals (Pollitt 2016). In addition to these important dissemination strategies, our paper proposes a strategy to minimize such difficulties by increasing what we term *methodological intelligibility*[2]. By *methodology* we mean a logic of inquiry that guides the conduct of research and informs the specific procedures and methods used (Haverland and Yanow 2012; Perry & Kraemer, 1986).[3] By *intelligibility*, we mean ensuring the accessibility of methodological procedures. In other words, intelligibility enables readers–both academics and practitioners– to understand choices in the procedures, by making them public and open to review (Brady & Collier, 2004).

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[2] The etymology of intelligibility comes from Latin *inter-lègere* (select across meanings).
[3] It is important to note that methodologies and methods are two distinct concepts. Methodologies, logics of inquiry or ways of knowing, reflect a researcher's ontological and epistemological presuppositions. Methodologies in turn inform methods that are tools and techniques used to carry out a certain research tradition (e.g., survey questionnaires, interviews, observation). For further explanation, see Haverland & Yanow (2012).

Yet there is no agreement in our field about what needs to be made public. A fairly established view considers methodology a process whose success, in the end, depends on the "talents, imagination and creativity of the research designer and [these elements] cannot be taught or planned" (Hakim, 2000, p. 16). The conception of methodology as an art, hence as a tacit process that lies in the individual talents, does not necessarily require disclosure of discretionary, methodological choices. Another view, common in teaching manuals, presents methodology as a sort of set menu from which a researcher draws (see for example Frankfort-Nachmias & Nachmias, 2007; Walliman, 2017). Such an approach, focused on the nuts and bolts of research methodologies, is understandably useful for teaching purposes. At the same time, it casts methodological decisions as quite mechanical choices that do not necessarily need to be reported.

In sum, despite remarkable differences between these two perspectives, it can be concluded that they both downplay the importance of methodological reporting. We posit, instead, that methodological choices should be clarified. Each research project is a journey punctuated by options and crossroads. The pivotal moments in this process deserve being shared and, specifically, explicitly reported in the context of their full trajectory. As a detailed itinerary and actual travel routes help newcomers follow the path and join the journey, reporting of relevant methodological decisions allows readers to fully understand and assess a study's rigor and quality.

We do not suggest that reporting is ignored *tout court* by established methodological systematizations. Several manuals on research design, for example, recommend reporting the rationale for selecting and even combining specific methodologies (e.g. de Vaus, 2001; Davies & Hughes, 2014). At the same time, there seems to be less awareness or at least less explicit articulation that methodological choices continue after selecting the methodology. This is our assumption, based on a conception of research as an act of 'craftmanship' (Booth

et al., 2008). Moreover, attention to methodological reporting is discouraged when scholars face length constraints and trade-offs in the selection of content, as is the case with journal articles. This may explain why methodological reporting has been found inconsistent across methodologies (e.g., see Lee et al., 2012 for survey research; see Ospina et al., 2018 for qualitative research).

Against this backdrop, we introduce a framework (and offer some practical advice) that emphasizes the reporting requirements which make a research journey 'public,' and thus the methodological choices intelligible. These decisions pose intrinsic challenges to standard notions of methodological rigor, for it is difficult to specify them in advance. At the same time, they offer valuable opportunities for scholars to craft their research journey, and for readers to understand it, keeping the journey within established quality criteria specific to each method. We thus suggest that they should be explicitly identified and selectively reported rather than being considered altogether as idiosyncratic choices or unintended effects.

Moreover, our framework led us to perform a cross-methodology comparison of methodological needs and to distil *functional equivalents* for methodological reporting. In other words, studies based on different approaches to theory development entail choices that are different and yet perform a comparable function. Previous studies on research methods identified common criteria that ensure quality across methodologies. Illustrative of this strand of literature, Gaskell and Bauer (2000) proposed functional equivalents when comparing the quality criteria associated with qualitative and quantitative methodologies, arguing that it is possible to identify common functions that qualitative and quantitative quality standards perform. Similarly, Riccucci analyzed quality criteria in qualitative versus quantitative PA studies, suggesting that 'universal terms' (2010, p. 61) such as authenticity or auditability can

be found in any methodology, *mutatis mutandis*. In this article we apply the notion of functional equivalents to reporting needs and we organize our findings accordingly.

Our framework serves two purposes. First, it performs a pedagogical function aimed at empowering individual readers to appreciate the richness of the research journey (Perry 2017). This is the case for both researchers and practitioners who strengthen their ability to assess and thus benefit from the main contributions of a study. This need is intensified by a general increase of methodological sophistication, especially in niches of studies based on complex and distinctive research techniques. Second, it serves a purpose that we may define as field building: that of bringing more maturity and methodological understanding to the scholarship of PA (Riccucci, 2010; Nesbit et al., 2011; Van Thiel, 2014; Groeneveld et al., 2015; Ospina et al., 2018). We argue that this may enable a more effective accrual of knowledge on common themes across traditions of inquiry and their associated research techniques.

The paper proceeds as follows. We first account for the selection of the featured methodologies, based on their usage in PA scholarship and categorized by their main approach to theory building, i.e. process *vs* variance (Mohr, 1982; Van de Ven, 2007; Burton-Jones et al., 2015). We have selected three methodologies reflecting the variance logic, namely survey studies, quantitative experimental studies, and quantitative observational studies; and two methodologies reflecting the process logic, that is, qualitative case studies and ethnographies. Next, we apply our framework to each methodology and ask: *i) which methodological choices are made that must be reported for a specific methodology? (ii) Is there a common denominator among the reporting standards of different methodologies?* Comparing reporting needs across methodologies allowed us to distil functional equivalents and to draw implications for research in our concluding section.

Selecting Methodologies Based on Different Approaches to Theory Development

To map the featured methodologies, we apply a perspective widely recognized in the literature. This perspective links methodology to theory development—a task that ought to be guaranteed by articles published in our field journals. Specifically, it identifies two main approaches to developing theory: *variance* and *process* approaches (Mohr, 1982; Van de Ven, 2007; Burton-Jones et al., 2014).

Scholars in the social, administrative, and policy sciences agree that these broad approaches to developing theory are concerned with 'causality' as an important explanatory approach to science (Maxwell, 2004; Yanow and Schartz-Shea, 2014). However, they offer different logics underlying how scholars connect the relationships among concepts associated with a particular phenomenon to develop theory (Burton-Jones et al., 2014). In stylized terms, a scholar using a variance approach focuses on variable attributes of entities and the relationships among them. In contrast, a scholar using a process approach explores events, rather than variables, to explain how entities participate in and influence the events (Van de Ven, 2007). Variance studies are based on the neo-positivist[4] assumption that leads the researcher to try to study the object of research in a value-free, detached way, using deductive inference. Process studies, however, can be rooted in either neo-positive or interpretive assumptions, even though they favor those of the interpretive perspective.[5] Interpretive researchers take the view that realities are socially constructed and thus immerse themselves in the phenomenon studied. They do not test theoretical predictions but draw on the data through inductive and abductive inference to find the mechanisms that explain a phenomenon under study (Reichertz 2014).

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[4] We have chosen to use this term to refer to scholarship grounded in contemporary versions of a positivist logic of inquiry, sometimes referred to as post-positivism.

[5] For comparing clusters of assumptions that reflect different epistemologies in social science, that is, assumptions about how reality can be known, see Riccucci (2010).

The choice of modes of inquiry and approaches to theory development should depend on the research purpose and question. Consequently, these choices produce different types of studies with underlying assumptions that guide how scholars link consistently theory to methodologies, and methodologies to methods. Both variance-based and process-based approaches (as well as neo-positivist and interpretivist logics) are equally legitimate scientific approaches to theory development (Maxwell 2004; Van de Ven, 2007). We believe this pluralistic view promotes complementarity and contributes to knowledge development in the PA field.[6]

A variance approach to theory development explores how an outcome changes according to variations in other factors and aims to establish antecedents and consequences of the studied phenomenon (Mohr, 1982). Examples of methodologies grounded in variance theories include experimental and quasi-experimental designs, although non-experimental approaches including surveys and correlation research have also been used very frequently.

A process approach explores how the events take place that result in an outcome. Studies grounded in process theories conceptualize outcomes as either discrete or discontinuous emergent phenomena that have some degree of path or context dependency. While the focus is on some events that contribute to an outcome, the logic of process theories allows for the possibility of multiple and reciprocal causality. It thus aims to illuminate the mechanisms (linear or emergent) that help explain the outcome of the process. Scholars using this approach will tend to choose qualitative and interpretive methodologies, including case studies, ethnography, grounded theory (Creswell & Creswell, 2018), Q-Methods (McKeown & Thomas, 2013) and sometimes more interpretive methods such as narrative inquiry,

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[6] Some scholars have the misconception that only quantitative or variance-based research is "scientific" and produces knowledge based on "facts." Our position is that different approaches to the acquisition of knowledge can be scientific depending on the existence of systematic inquiry and that multiple traditions of inquiry are indispensable for the development of knowledge (*Wissenschaft,* knowledge in a broad sense); see Raadschelders 2011a).

phenomenology, and hermeneutics (Blatter et al., 2016).

We limited our selection of featured methodologies to five, given article length constraints and our purpose to provide in-depth analysis and guidance (rather than a glancing mention of all possible methodologies). We reviewed stock-taking exercises in PA (Lee et al., 2012; Pirog, 2014; Groeneveld et al., 2015; Cappellaro, 2017; Ospina et al., 2018) and identified methodologies that were well represented in the reviewed studies. The resulting list was further discussed with a panel of experts (n=7) and journal editors in our field (n=4) who acted as focus groups to validate our choices[7].

The final selection includes three methodologies reflecting the variance logic, namely survey studies, quantitative experimental studies, and quantitative observational studies[8], and two methodologies reflecting the process logic, namely qualitative case studies and ethnography[9]. In the following section, we discuss reporting standards for the selected methodologies and compare them with the goal of identifying functional equivalents for methodological reporting.

Reporting Methodological Choices

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[7] The choice of experts and editors reflected the search for some degree of geographical diversity (i.e., they came both from Europe and from the USA) and of methodological assortment (i.e., we included scholars with different and widely recognized methodological expertise).

[8] *Survey research* is defined as "a systematic data collection methodology in which samples are drawn, respondents are interviewed, and data are analyzed in order to extrapolate to a population of interest" (Lee et al., 2012, 87). We focus on surveys that are designed and conducted for research. *Quantitative experimental studies* refer to research employing active interventions (treatment) and measuring outcomes in a controlled environment (James et al., 2017). By *quantitative observational studies*, we refer to studies that use large data sets constructed via observations or administrative data to infer causality. They can use data collected by the researcher or data obtained from second hand data sets, or even a combination of both. Different from experimental studies, observational studies do not entail manipulation but investigate causality in a real-life, complex policy phenomenon drawing from large samples of the studied populations.

[9] A *case study* is defined as "an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-world context" (Yin, 2013, 16). *Ethnography* is a qualitative research methodology based on the explicit, methodical observation and paraphrasing of social situations in relation to their naturally occurring events (Weick, 1985).

For each of the selected methodologies, we analyzed methodological choices and associated reporting needs around three conventional research phases, namely *research design*, *data collection* and *data analysis*. We based this decision on the review of research design manuals for social sciences (King et al., 1994; Bauer & Gaskell, 2000; Hakim, 2000; Neuman, 2014; Bryman, 2015) as well as our exchange with the panel of experts. Co-authors with extensive knowledge and practice conducted the analysis of methodological choices and how they must be reported for each methodology. This ensured an inner view of the research journey as well as familiarity with its challenges and possible solutions. We mapped the details of reporting standards in the selected methodologies and we account for this analysis in the *Appendix*.

The appendix table shows various reporting components in different methodologies that are based on different sets of theoretical assumptions and methodological decisions. Methodologies following a variance approach put more emphasis on reporting measurement, sampling, and estimation strategies. In survey studies, for example, researchers must report questionnaire content, the match between the target population and realized sample, and the estimation techniques with robustness check results. Methodologies following a process approach share assumptions about how reality can be known that lead to report information on how researchers gained access to context, data and people. In ethnographic studies, for instance, more emphasis would be put on the researchers' role and identity during fieldwork, given the embeddedness that characterizes the empirical corpus. Although reporting components for each methodology are discussed in different research terms or with different relative weight, common reporting requirements exist across the methodologies that we call *functional equivalents*.

Functional Equivalents for Methodological Reporting

Functional equivalents identify a common denominator that captures the essential purpose

performed by reporting requirements. From reporting standards in the selected methodologies

(see Appendix), we identify five functional equivalents: articulating the rationale for

methodology selection, delimitating the study, accounting for the research instrument,

reporting the data processing and analytic techniques and, last, ethical clearance. Table 1

offers a summary of these functional equivalents and further explanations are presented

below.

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Articulating the rationale for methodology selection. Methodological reporting should

start first with the rationale for using a particular methodology. Epistemological and

theoretical assumptions and types of research questions drive the logic behind choosing an

approach to theory development (e.g., variance and process approaches) and a methodology.

For example, theories explaining antecedents/consequences of individuals' attributes can be

tested with variance studies. Survey research is widely used in PA research by virtue of its

versatility and relative economy in terms of measuring behaviors that cannot otherwise be

observed. Quantitative observational studies have gained prominence among the empirical

strategies aiming at establishing causality (Perry & Kraemer, 1986; Groeneveld et al., 2015),

while the field has recently experienced a marked increase in the use of experimental designs

(Bouwman & Grimmelikhuijsen, 2016).

Differently from the above-mentioned three methodologies based on variance

approaches to causality, qualitative case studies and ethnography provide an approach that is

focused on a process. Case study research, most widely used as a qualitative methodological

approach in the PA literature (Brower et al., 2000; Ospina et al. 2018), has its niche in

situations "when a 'how' or 'why' question is being asked about a contemporary set of events" (Yin, 2013, 14). Ethnographic designs are uniquely suited for illuminating processes of meaning making through observations in the field (Huby et al., 2011; Cappellaro, 2017). Researchers typically face situations where a particular methodology has a competitive advantage and is selected consequently. Articulating the rationale for methodology selection and pointing to such competitive advantage clarifies to the readers the premises of the research journey and makes the findings more compelling.

Delimitating the study. In the research design phase, researchers articulate the boundaries of the context or the case and make choices about the unit and level of analysis given the research question. This is why in quantitative observational studies information on the policy context and institutional environments should be described; whereas, in survey studies and in quantitative experimental studies, research samples and target population should be clarified. Similarly, methodological reporting in process studies starts by defining the case, a basic but fundamental step in the research design. It involves reporting on decisions made about unit of analysis (e.g., individual, group, organization, network, community, etc.), the number and type of case(s), and the boundary of the case in terms of time and space, which Ragin (1992) calls this the "casing" process. While casing is a fundamental element of case study research, many studies in the field have omitted reporting it (Stewart, 2012; Ospina et al., 2018). In ethnographic studies, the process also determines the ethnography design: synchronic designs may be used for comparisons of intra-organizational phenomena, parallel multi-site designs for inter-organizational phenomena, or diachronic designs to capture processual, evolutionary dynamics (Barley, 1990).

Accounting for the research instrument. This functional equivalent performs the function of reporting the tools employed in the data collection phase.

First, in variance-based studies, reporting the research instrument is key to the operationalization and measurement of variables in the study; while for survey studies, the main element is the questionnaire, for experimental studies, it is the experimental protocol and for quantitative observational ones, it is the database. Groves' (1989) total survey error framework, a widely cited framework employed to report methodological choices in survey studies, noted that a main source of data collection errors resides in the questionnaire design. Not only can the wording of the questions influence responses, but also their order, the introductory text, and the layout of the questionnaire (Dillman et al., 2014). Similar concerns apply to qualitative interviewing, where demonstrating coherence in the application of the method is equally relevant. For example, readers should be able to evaluate whether the interview questions were worded to be truly open-ended, neutral, singular, and clear (Patton, 2005). Consequently, survey questionnaires as well as interview protocols in case studies or observation logs in ethnographic studies must be at least summarized in the text and possibly also reported in an appendix or online supplementary materials. An illustration of how to report a survey study was provided by Hall and Van Ryzin (2019). The authors presented the development and testing of a new scale, the Norm of Research and Evidence in Decision-making (NERD), by reporting the results of two different surveys. This is a valuable example for those interested in reporting construct validity of survey items.

Second, it is also important to make explicit how the research instrument is used. The context in which the data are collected may influence participants' responses. Characteristics of the interviewer or researcher must be reported if they could influence participants' responses or the researcher's interpretation. Surveys conducted in person or over the phone can be affected by the behavior or even just the characteristics of the interviewer. It is therefore helpful to provide information about the interviewers, specifically, how they were selected and trained. A classic example of this can be found in studies analyzing the electoral

effects of canvassing, i.e. the systematic initiation of direct contact with individuals that is used during political campaigns. Green, Gerber and Nickerson (2003) provided a good example by discussing the characteristics of the canvassers that helped them to implement their field experiment.

In process studies, where the researcher serves as instrument (Miles, Huberman & Saldana, 2014), further attention must be paid to reporting data collection strategies. For example, in ethnographies, reporting of data collection should specify how participant observation has been carried out in a sustained and systematic manner. This includes information on the nature of the field site, its degree of accessibility, risk and regulation of social behavior, the length and intensity of fieldwork, the frequency of observation (e.g., number of days, number of hours per day), objects of observation and nature of the observed actors. For example, in her ethnographic study on incorporating persuasive strategies in assessment reports, Greer (2011) specified the formal and informal interviews she conducted, including follow-up interviews, as well as the length and frequency of the participants' observations.

Third, researchers are expected to provide information on the systematic recording of data, for example, through the use of observational sheets or matrixes, audio and video recording devices, or different types of field notes, such as mental notes or jotted notes (Emerson et al., 2011). Reporting standards for interviews and archival data do not differ substantially from those applicable to other process designs in terms of selection strategy, use of interview protocols, or indication of the type and number of documents.

Fourth, information on the sampling and participant selection should be reported. In variance approaches, this includes a sampling strategy, the match between the target population and the realized sample, the method and period of recruitment, inclusion/exclusion criteria (who was eligible to participate in the study), and the response

rate. For example, Porumbescu (2017) excluded some survey responses by examining response patterns and time spent to complete the survey in his study of government trustworthiness. When developing experimental designs a discussion is ongoing about the suitability of using students in the study to test work-related topics (Falk et al., 2013). Hence, researchers should discuss how the characteristics of their sample may influence their object of study, and whether they allow them to generalize their findings (as discussed in Esteve et al., 2016 and Pedersen & Stritch, 2018). James & Van Ryzin (2017), for example, did so by including an appendix with a detailed description of the demographic profile of study participants by experimental factor.

For quantitative experimental studies, assignment and treatment must also be reported in addition to participant selection. Experiment researchers must provide information regarding the allocation method of participants. They may do so by reporting whether random assignment was used and, if so, report the unit of randomization (individuals, groups, organizations, etc.). Also, researchers should report what treatment was given to the treatment group and to the control group and when the experiments and any repeated measurements were conducted as a follow-up. They will increase transparency by making the complete treatment materials available (scripts, mailings, question wordings, etc.).

Relatedly, ethnography and qualitative case studies should articulate criteria for selecting data sources. In case studies primarily using interviews, for example, a researcher may describe the number and characteristics of interviewees and justify their selection and number. When documents and observations are used, information about types and number of documents, time and duration of observations and how documents and observation events were selected and accessed would be discussed. For example, in their case study of a Food Policy Council, as an instance of representation in collaborative governance, Koski et al. (2018) offered a detailed account of their documentary sources, specifying why they

employed meeting minutes, whether those were publicly available, how many meetings were covered, who attended them, their length and their time span.

Careful attention should be paid to accounting for the research instrument in process studies mixing different types of data (e.g., observations, interviews, documents and archival records), which is exactly one of the strengths of case study research (Creswell, 2013; Yin, 2013). A case study researcher may elaborate the rationale for using multiple data sources and triangulating them, or explain why she chose to focus primarily on one or two. Vijay & Kulkarni (2012), for example, explained how and why they used both documents and interviews in their case study of the palliative care movement in India.

Reporting the data processing and analytic techniques. This functional equivalent is aimed at ensuring the confidence in research findings by showing that the data analysis phase has been rigorous and coherent with the methodological standards.

First, transparency in survey and experimental studies is improved by providing information about the demographic characteristics of respondents and of participants. Information about demographic characteristics that could reasonably be expected to influence responses (e.g., gender in a survey involving questions about gender stereotypes) should be provided. Like variance studies showing summary statistics and estimation results, process studies must show findings using "power quotes", i.e. vivid sentences that encapsulate the point the author is trying to make and "proof quotes", used to support the prevalence of an argument and often grouped in an appendix or table separate from the text (Pratt, 2009). For example, in her study on cultural fragmentation as a barrier to interagency collaboration, Cohen (2018) embedded "power quotes" effectively in the text to capture the perceptions of the interviewees, Texas law enforcement officers. Displaying data in a matrix or network format helps to disclose the qualitative data analysis process (Miles et al., 2014). Reporting how researchers conducted robustness checks (variance studies) and triangulation (process

studies)[10] during the analysis enhances the confidence in the findings. Jensen & Bro (2018), for example, provided the robustness test results in their survey research of the motivational effects of transformational leadership.

Second, the stages of the analysis must be reported. In survey studies, reporting should include both the steps taken in processing the raw survey responses as well as how they were analyzed. Readers should be able to understand fully when and why respondents are removed from an analysis. This may be due, for example, to their failure to successfully complete checks on their attention to or comprehension of the questions asked (Jilke & Van Ryzin, 2017). In observational studies, researchers do not intervene in the data generation stage and their data are publicly available, either free of charge or on payment of a subscription. Hence, researchers are under an obligation to explain carefully where their data are drawn from, to provide basic descriptive statistics and the processes of data cleaning and handling missing values. Zafra-Gómez et al. (2013, 57-59), offer an example of detailed explanation of data sources and descriptive statistics.

In quantitative observational studies, reporting should clearly demonstrate, above and beyond what is expected in survey and experimental studies, the fit of the selected modeling with the theoretical foundations, consistent with the attempt to maximize internal validity. Perhaps the main challenge that quantitative researchers face when analyzing empirical evidence concerns the theoretical foundations of the model chosen to conduct the empirical exercise. Modeling based on a solid theoretical foundation is critical if researchers want to make meaningful interpretations of their results. In its absence, researchers are likely to make ad hoc interpretations that are of little academic interest. Blåka (2017) provided an interesting illustration on how competing theories on the relationship between intermunicipal

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[10] Triangulation can be not only in the standard form of multiple data sources, but also in rival analytical interpretations (Feldman & Quick, 2009) and team approaches and peers' checks (Huby et al., 2011). Member checking, also known as participant validation or informant feedback, is sharing research findings with the research participants.

cooperation and costs are tested, and how the results obtained from her empirical analysis can be interpreted in the light of those competing theories.

Since a researcher serves as instrument in some process studies, more details are required about the path from data collection to analysis and interpretation. For example, in ethnographic studies, researchers should clarify how meanings are drawn from the ethnographic data. This includes the analytic scheme developed to make sense of the logged data and the move from memoing to category development (Lofland et al., 2006), and the specific analytic techniques used to analyze the data. For example, in her study on the everyday work of frontline workers in contemporary local governance, Durose (2009) adopted story-based analytical techniques to provide 'decentred', thick accounts of workers' local knowledge. In contrast, to study the role of power in the construction of legitimacy in the context of public organizations, Gordon and colleagues (2009) employed deducting coding techniques, allocating first order codes to key themes belonging to the theoretical framing of dialectical opposites.

The analysis of case study evidence may involve researchers' discretionary choices of data processing, analytic strategies, software, and participant/member checking. For instance, a case study using coding as the main analytic tool may articulate how codes were developed or modified and also explain how codes were linked to raw data, on the one hand, and to research findings, on the other. Authors often mention the general rule of thumb in qualitative data analysis (e.g., an iterative process or a cross-case analysis), with no mention of how they defined or conducted it. The desirability of reporting key details of data analysis is illustrated by a qualitative study on the behavioral dimensions of governance in public networks based on four case studies (Saz-Carranza & Ospina, 2011). The authors conducted a cross-case comparison through content analysis based on coding. A table accounts explicitly for "the route from the initial codes to the reported findings" (337).

Ethical clearance. Ethical clearance, as the final functional equivalent, performs two main tasks. On the one hand, it clarifies ethical issues that must be addressed in any research project, irrespective of the methodology. Scholars may report their adherence to ethical codes and approval by Institutional Review Boards. They should also disclose any circumstance that may potentially limit their autonomy, such as funding arrangements where a conflict of interest may arise. Reporting requirements include specific funding sources, the role of the funders in the analysis of the gathered data or any restrictions regarding what findings can be published, all clearly spanning all chosen methodologies.

On the other hand, this functional equivalent aims at reporting ethical challenges intrinsically connected to a specific methodology. Notably, studies relying on experimental design should disclose any possible negative effects of their intervention towards their study participants and, if necessary, also discuss the risk-benefit ratio for each experimental treatment in their study (Bozeman & Scott, 1992). In both case studies and ethnographies relying on interviews, standards for data reporting such as anonymity and confidentiality should be clarified. For example, in his ethnographic study aimed at exploring the beliefs and practices of UK permanent secretaries and ministers, Rhodes (2005) tried to minimize the risk that readers would identify the departments and their staff by introducing the cast of characters but changing all the names. When researchers employ informal conversations and unstructured interviews, they should account for how they handled the use of informed consent. Specific to ethnography, it should clarify the researchers' exposure, including the adoption of either overt or covert strategies of field presence.

Discussion and Conclusion

The purpose of our study has been to advocate for achieving methodological intelligibility, conceived as a common ground for mutual understanding among scholars typically writing in

different traditions of inquiry. Methodological intelligibility assumes that despite differences in methodology, key choices must be reported in studies of PA. We did not attempt to maximize convergence among methodologies as much as to facilitate the respectful coexistence of different approaches. To do this, we explored reporting standards in research with different approaches to developing theory: variance and process approaches. Consequently, we could focus on the core assumptions of a methodology, i.e. to capture variance or to identify processes, and associate the reporting needs to this ultimate purpose.

While research processes for different methodologies have been considered as incommensurable (Kuhn, 1970), which at times has meant justifying the lack of exchange (Davies & Fitchett, 2005), we side with those who disagree with this perspective (Lewis & Kelemen 2002; Romani et al. 2011) and we believe in the possibility for learning across research with different logics of inquiry (Sanchez, Ospina & Salgado, forthcoming). Therefore, comparing reporting procedures across methodologies enabled us to find commonalities that are helpful when considering the issue of the quality of knowledge generation at the field level, despite significant difference in logics of inquiry.

An important contribution of our comparison is to extend the notion of functional equivalents (previously employed only for comparing quality criteria) to the reporting of methodological choices. The functional equivalents we distilled include *articulating the rationale for methodology selection, delimitating the study, accounting for the research instrument, reporting data processing and analytic techniques, and ethical clearance.* Equivalents lend themselves easily to be employed as a reporting check-list within each methodology. Specifically, they allow both the author and the reader to engage in the account of the research journey with a deeper understanding of what function is performed by each reporting requirement. In this respect, our analysis addresses the call for more awareness on methodological reporting (Groeneveld et al., 2015; Ospina et al., 2018). Frequently,

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researchers who use multiple sources of data (typically associated with different methodologies) tend to adopt the minimum denominator in reporting standards. Instead, we suggest here the need to strengthen the methodological account by adopting the highest possible standard of reporting for each research step and choice.

Limitations of our study include the number of methodologies we could feature. Moreover, the list of reporting standards discussed is not exhaustive. However, we have covered a basic set of issues that may represent the ground rather than a ceiling, that is, they could work as a starting point to trigger a debate that encompasses both methodologies and standards. It should also be mentioned that the increased attention to methodological reporting may lead scholars to draft longer methodological sections. This potentially could be problematic, considering current journal policies and article length constraints. At the same time, the increased use of online supplements seems to be a viable solution.

Despite these limitations, we contend that increasing our mutual understanding of the choices associated with a methodology helps educate ourselves as a field and enhances our ability to appreciate diversity. We started this project motivated by the costs of maintaining the status quo, such as excessive fragmentation and limited cross-pollination due to a substantive lack of trust in findings achieved through different methodologies. This study helps us to recognize specificities in the way a methodology is employed as well as in its reporting standards. In turn, this may allow us to embrace diversity with less skepticism and barriers.

As a further implication, accounting for the research journey may enhance transparency. The PA field is observing new attempts to improve transparency and replicability. Increasingly, journals request that those authors using databases make them available to their readers, so that the econometric estimations reported can be replicated. Authors are encouraged to include methodological details in online supplements. Another

example is the use of pre-registration of a study, that is, whether the authors submitted the research rationale, hypotheses, design and analytic strategy to either the journal or a database before conducting the study. Field efforts to make a research journey 'public' through detailed and rigorous reporting will make the empirical basis of scholarly work more visible (Perry, 2017; Grimmelikhuijsen et al., 2018).

By enhancing accessibility, methodological reporting enhances also evaluability of methodologies in the field. As demonstrated in the Appendix, studies are evaluated based on different quality criteria, consistent with their methodological assumptions, which in turn require core methodological choices to be reported and open to review. Clear reporting of tactics used to ensure methodological rigor would allow for the appropriate assessment of the study. In variance studies, internal and external validity are critical rigor criteria. Thus, issues of measurement validity, endogeneity, reverse causality, and representativeness of the sample must be addressed. Research based on a process approach is guided by the quality criteria of credibility, authenticity, and transferability. To ensure rigorous criteria in process studies, researchers pay attention to thick description, triangulation, reflexivity[11], and member checking. Quality criteria across methodologies, however, converge around the functional equivalents of maximizing *confidence* and *relevance* (Gaskell & Bauer, 2000). The notion of functional equivalents in terms of both quality criteria and reporting standards would facilitate dialogue among different methodological communities and promote field building in the scholarship of PA.

On an ending note, we acknowledge that an important and related concern in the PA field has been that journal publications may be getting out of balance by rewarding methodological sophistication rather than addressing issues of significance to policy makers, to citizens and to public managers (Pollitt 2016). While this article's primary focus is indeed

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[11] Reflexivity is accounting for researcher effect on the process and outcomes of research (see Anderson, 2008).

methodological, we stress that the best methodological choices are always directly connected to robust and meaningful theory, as well as to insights from knowledge to illuminate the realities of PA on the ground. We contribute to the ongoing debates and emerging movement in our field on the need to close the existing gap between practitioners and academics (Pitts & Fernandez 2011; Raadschelders & Lee, 2011; Bartunek & Rynes, 2014; Newman, Cherney & Head, 2016 Pollitt, 2016), by offering readers some tools to better develop understanding and interpret ideas. Our message is that methodological intelligibility can contribute to increased clarity for practice and for practitioners. Specifically, it can make research more accessible to policymakers who may not be experts in a particular methodology but are interested in using high quality research to inform their policies, thus honoring the spirit of PA's foundational commitment to an academic-practitioner dialogue.

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Table 1: Functional equivalents for methodological reporting

REPORTING REQUIREMENT	METHODOLOGY				
	Survey studies	Quantitative experimental studies	Quantitative observational studies	Qualitative case studies	Ethnography
Rationale for methodology selection	• The rationale for using a particular methodology				
Delimiting the study	• The boundary of the case or context • The unit and level of analysis (e.g., individual, group, organization, network, country, etc.)				
	- Target population and research sample	- Study subjects and context of the study	- Geographical and institutional environments of the study	- Boundaries of the case in terms of time and space - Type/number of cases	- The nature of the field site, its degree of accessibility, risk and regulation of social behavior
Accounting for the research instrument	• Research instrument (e.g., survey questionnaire, interview protocol, observation log) • Sampling (participant selection) • Recruitment				
	- Survey questionnaire - Sampling strategy - Response rate - Interviewer characteristics	- Experimental protocol - Treatment and measures - Recruitment and the allocation method of participants	- Data sources - Link to database - Data cleaning and handling missing values	- Multiple sources of data - Participant selection - Non-participation - Observation log/interview guide - Data saturation	- Systematic recording of data - Overt/covert field presence - The length, frequency, and intensity of fieldwork - Observation log/interview guide
Data processing and analytic techniques	• Data processing and software • Analytic techniques				
	- Processing of the raw survey responses - Attrition	- Basic descriptive statistics - Pretreatment measures - Robustness check	- Basic descriptive statistics - Rationale for the choice of estimation techniques - Robustness check	- Analytic strategies - Codes/themes - Triangulation - Rival explanations	- The analytic scheme and techniques - Member checking - Researcher effects
Ethical clearance	• Adherence to ethical codes (ethical practices adopted such as the use of informed consent, anonymity and confidentiality). • Approval by Institutional Review Boards • Disclosure of funding arrangements				

Source: Authors' elaboration

Appendix. Reporting standards in the selected methodologies

Research phase	Methodology				
	Survey studies	Quantitative experimental studies	Quantitative observational studies	Qualitative case studies	Ethnography
Research design	- The design of the questionnaire (wording of the questions, introductory text, and the layout) - Full questionnaire in an appendix - Target population and research sample - Sampling procedure	- Study subjects and context of the study - The allocation method of participants (whether random assignment was used) - Dates of any repeated measurements as part of a follow-up - Treatments (what is given to treatment and control groups)	- Basic theoretical foundations of the hypotheses - Information on the geographical and institutional environments of the study - Unit of analysis - Rationale for the choice of preferred estimation techniques	- Type/number of cases (embedded, multiple, instrumental, etc.) - Definition of the unit of analysis (e.g., policy episode or phenomenon), boundaries of the case (including time frame) and level of analysis (individual, group, organization, network, country, etc.)	- The nature of the field site, its degree of accessibility, risk and regulation of social behavior - The units and levels of analysis - The adherence to ethical codes approved by institutional review boards or internationally accredited bodies
Data collection	- Interviewer characteristics expected to influence responses (how the interviewers were selected and trained; demographic characteristics)	- Measurement: how the outcome variables are measured and coded; if there is an index used, report exactly how it was constructed; lastly, report how all other variables included in the statistical models are measured and coded.	- Data sources (where the data are drawn from) - Data cleaning and missing values - Explain survey characteristics when surveys were used to obtain data for a variable; - Make data publicly available, so that estimations can be replicated	- Types of sources: interviews, participatory/non participatory observation, artifacts, documents (type and magnitude) – Choices in selecting sources (interviewees' selection, interview protocol, observation etc.) - Devices used - Account of saturation	- The researcher's exposure, including the adoption of either overt or covert strategies of field presence - The length and intensity of fieldwork - The frequency of observation - Information on the systematic recording of data - Ethical practices adopted (e.g., the use of informed consent, anonymity and confidentiality)
Data analysis	- Basic descriptive statistics - Statistic packages used - Robustness checks with alternative estimation techniques - Processing of the raw survey responses and the analysis - Attrition - Use theoretical insights to interpret quantitative results	- Baseline means and standard deviations for demographic characteristics and other pretreatment measures (if collected) by experimental group - Robustness checks (for example, by running sub-group analysis) - If random assignment was used, report the unit of randomization (individuals, groups, organizations, etc.)	- Basic descriptive statistics - Statistic packages used - Conduct robustness checks with alternative estimation techniques - Test assumptions of the estimation method (e.g., normality and homoscedasticity in regression, parallel trends in DID) - Use theoretical insights to interpret quantitative results	- Use of theory (e.g. inductive, deductive, abductive) - Triangulation of sources - Use of each source in the analysis (e.g. which source informs which goal) - For inductive cases leading to thematic analysis, the analytic details of the coding process (iterative vs cross-case) and pragmatic details (e.g. agreement, disagreement and adjustments)	- The analytic scheme - Analytic techniques