

## RESEARCH ARTICLE



# How qualitative research methods can be leveraged to strengthen mixed methods research in public policy and public administration?

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## Abstract

Recently, there have been a variety of arguments voiced to encourage that more attention be given to the role qualitative methods can play in mixed methods research in public policy and public administration. This article discusses these claims and describes the benefits of qualitative approaches, and how qualitative research methods can be leveraged to strengthen mixed methods research in public administration. We also provide a guide for improving the credibility of mixed methods research through increasing transparency and discussions of all methodological decisions. This study is based on a systematic content analysis of 186 mixed methods studies published in public policy and public administration journals between 2010 and 2018. We found that findings from the quantitative methods dominated the mixed methods studies, little diversity in data collection and analysis methods, and frequent failure to integrate insights from both methods. We also analyzed the 36 qualitative-dominant studies in the sample, and illuminated seven different ways that authors of qualitative-dominant studies leveraged the qualitative strand to strengthen mixed methods research. We developed lessons from our analysis of the qualitative-dominant articles on how to incorporate qualitative methods in a thoughtful manner, articulate a role for each strand, and effectively support findings with one or more strands.

## KEYWORDS

iterative text coding, mixed methods, public administration, qualitative methods, research methods

## Evidence for practice

- Mixed methods studies can benefit when quantitative data analyses are intentionally supported and expanded by the use of qualitative methods to obtain perspectives of study subjects and other stakeholders to flesh out context.
- Effective integration of findings in mixed methods research requires deliberate dialogue between quantitative and qualitative strands.
- Clear elucidation and application of standards of evidence for qualitative and quantitative research merit equal attention.
- Transparency in reporting is needed for both qualitative and quantitative methods in mixed methods studies regarding all aspects of data: sources, collection, analyses, and reporting.

## INTRODUCTION

A major finding about the use of mixed methods in public policy and public administration research has been the

dominance of quantitative strands over qualitative strands. Hendren et al. (2018) found that mixed methods studies across public administration journals overwhelmingly favor quantitative methods, with qualitative strands

receiving less emphasis and the qualitative methods less effectively reported. These findings are in line with Giddings's (2006) caution that the rise and continued promotion of mixed methods research assume that integrating methods inherently promotes qualitative methods when in reality, the quantitative methods still dominate. Such an assumption could lead to a new generation of researchers who see quantitative-dominated mixed methods as exemplars of mixed methods scholarship, and work against the development of and learning about how to utilize qualitative methods effectively to bolster findings (Giddings, 2006; Hesse-Biber, 2015; Mason, 2006).

Researchers in a variety of fields have long proposed that well-developed qualitative strands can add considerable value to mixed methods research designs by illuminating the context of and complexities inherent in human behavior and improving our ability to explain findings (Creswell et al., 2006; Mason, 2006). Qualitative strands that emphasize authenticity, plausibility, and credibility are recommended to add nuance and depth to mixed methods studies (Brower et al., 2000; Creswell & Plano Clark, 2017; Greene et al., 1989; Johnson & Onwuegbuzie, 2004). Strong qualitative strands in mixed methods research designs have been touted to more fully capture the benefits of integration, such as encouraging creativity, gaining new perspectives, clarifying the context and transferability of findings, and presenting a deeper and more nuanced understanding (Mason, 2006; Merriam & Tisdell, 2016; Raimondo & Newcomer, 2017).

Given the value strong qualitative strands can bring to mixed methods research, our goal is to better understand and clarify the way qualitative strands can strengthen mixed methods research in public policy and public administration. Specifically, we address three questions:

1. How do qualitative-dominant mixed methods studies differ from quantitative-dominant ones in public policy and public administration?
2. How can qualitative methods be leveraged to strengthen mixed methods research in public policy and public administration?
3. What key reporting elements are needed in a mixed-method study to increase the strength and credibility of findings?

In our research, we examine and draw lessons from mixed methods studies in public policy and public administration in order to identify promising practices and provide guidance on how to improve the planning, execution, and reporting of mixed methods research. We start with accepting the definition of mixed methods inquiry as: "the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts, or language into a single study" (Johnson & Onwuegbuzie, 2004, p. 17). While some observers view the use of two or more data collection or analysis methods as constituting mixed

methods work, we frame mixed methods research for our analysis as studies that employ at least one quantitative and one qualitative research method.

In this article, we first discuss qualitative methods and arguments given for increasing their use in public policy and public administration research. Then we describe the methods we used to analyze mixed methods research in public policy and public administration. Following the description of our methods, we present our analyses which clarify how quantitative- and qualitatively-driven mixed methods studies have been characterized and how they differ. Then we discuss how mixed methods research may be strengthened by a more intentional and strategic blending of qualitative and quantitative strands. We conclude with a set of guidelines that may be used to improve reporting for mixed methods research.

## OPPORTUNITIES FOR ENRICHING MIXED METHODS RESEARCH WITH QUALITATIVE METHODS

Before we address how and why qualitative methods can add value to mixed methods research, the broad range of qualitative methods available merits delineation. A review of the literature indicates a variety of approaches for conducting qualitative research. Creswell and Poth (2016) identify five research approaches to qualitative methods: narrative, phenomenological, grounded theory, ethnographic, and case study. Merriam and Tisdell (2016) similarly highlight the same five designs and add a sixth: basic qualitative study. Coffey and Atkinson (1996) find narrative analysis valuable because the approach "facilitates the exploration of content in interviews [and] field notes" (p. 80). Denzin and Lincoln (2011) further explain how qualitative research uses a variety of empirical materials: case study, personal experience, introspection, life story, interview, artifacts, cultural texts, observation, and historical information. The variety of qualitative approaches and data sources enhance the flexibility with which qualitative methods can be applied.

Although qualitative analysis includes a variety of approaches, researchers generally agree on the foundational value of careful and transparent coding which "enables the researcher to recognize and contextualize qualitative data" (Coffey & Atkinson, 1996, p. 45). Creswell and Poth (2016) designate three baseline analytic steps: "coding the data (reducing the data into meaningful segments and assigning names for the segments), combining the codes into broader categories or themes, and displaying and making comparisons in the data graphs, tables, and charts" (p. 183–184). They further emphasize a dynamic interaction between the researcher and the data in which the researcher repeatedly engages with and assesses the data in a fluid rather than rigid manner (Creswell & Poth, 2016, p. 185). Coffey and Atkinson (1996) also explain that multiple coding tools contribute

to the process of combining and organizing data, pulling out key themes, and drawing conclusions (Coffey & Atkinson, 1996, pp. 27–52).

Overall, qualitative research methods produce a range of desirable goals which Peshkin (1993) identifies as description, interpretation, verification, and evaluation. The description often refers to relationships, systems processes, and settings/situations. A study with interpretation as the goal typically develops explanations, proposes new concepts and new theories, elaborates existing concepts, and provides insights to clarify complexity. Verification involves testing the credibility of claims, including establishing the utility of assumptions. This is different from how quantitative researchers define verification—for qualitative researchers, verification is more likely to take the form of developing potentially transferable claims as contrasted with verifying existing claims. Evaluation of outcomes involves an examination of policies, practices, and innovations—how they are implemented, their impact, and what the process has entailed (Peshkin, 1993). Each goal has unique and important contributions to mixed methods inquiry and the use of mixed methods in public policy and public administration.

Qualitative inquiry is beneficial for public policy and public administration because it is information-rich and “can strengthen the field’s links to practice” (Ospina et al., 2018, p. 593). The researcher is the primary instrument of data collection, attempting to capture and give meaning to individual perceptions and experiences of the

social world by allowing for multiple modalities (Coffey & Atkinson, 1996; Hesse-Biber, 2010; Lincoln & Guba, 1985; Merriam & Tisdell, 2016). Denzin and Lincoln (2011) describe the qualitative researcher as a “bricoleur” who borrows from various approaches—interpretive, narrative, theoretical, political, and methodological, thus making it well-suited for public administration, a complex, human-centered discipline.

## STANCES ON THE VALUE QUALITATIVE METHODS BRING TO MIXED METHODS RESEARCH

There have been a variety of arguments voiced in support of the role qualitative methods can play in mixed methods research in public policy and public administration. Table 1 provides a summary of key recommendations offered by public policy and public administration scholars.

One long-voiced argument for employing multiple methods in research is to reap the value of employing qualitative approaches as an “equal partner” to quantitative methods (Creswell & Plano Clark, 2017; Greene et al., 1989; Johnson & Onwuegbuzie, 2004). In public administration, Honig (2019) recently highlighted the need to give “equal weight” to qualitative and quantitative approaches in mixed methods studies. However, what “equal weight” actually means in practice is not

**TABLE 1** Stances on the relationship between qualitative and quantitative approaches in public policy and public administration research

Study	Description of stance	Illustrative quotation
Honig (2019)	Call for giving equal weight to qualitative and quantitative approaches	“More generally, mutually supportive mixed methods allow for—indeed, demand—simultaneous design of qualitative and quantitative empirical strategies, rather than conceiving of the former as endogenous to the results of the latter” (p. 315)
Raimondo and Newcomer (2017)	Normative practices in framing research questions privilege quantitative approaches over qualitative approaches	“[There] is a tendency to mold research questions to fit the requirements of a preferred method. For example, one of the signs of the favoring of quantitative methods in a field manifests itself when research questions are uniformly worded in an inferential or correlational language. The rarity of addressing “why?” and “how?” questions in research articles—that call for in-depth understanding of contextual factors or of explanatory mechanisms, and are more appropriately addressed by qualitative inquiry—is another case in point” (p. 189)
Gilad (2019)	Need for qualitative approaches to develop theoretical innovation and avoid reductionist explanatory narratives	“This scarcity of qualitative research likely undermines our collective endeavor to address real-world problems that governments face... and may lead to our provision of overly reductionist explanations for what are often complex, wicked, problems. Moreover, it hinders theoretical innovation in our field, leading us to focus on more of the same, relying on existing indices and datasets” (p. 3)
Hendren et al. (2018)	More attention to the development and integration of qualitative approaches	“If public administration scholars can increase the quality of qualitative strands and work to better integrate qualitative and quantitative strands of research into well-designed mixed methods studies, the field can capitalize on mixed methods to illuminate complex issues and build a stronger, more comprehensive knowledge base” (p. 915)
Mele and Belardinelli (2019)	More attention to use and integration of qualitative approaches	“Second and more important, we call for a tighter combination of the findings obtained through separate research processes, especially when the rationale for MMs is the search for validity. This is what differentiates mixing methods from juxtaposing them. We also point to the need for a less cursory use of the qualitative findings derived from interviews, both when they follow a quantitative analysis and when they are meant to generate survey questions” (p. 344)

clear, and is not necessarily a point of agreement for mixed methods scholars. For example, “equal partners” focuses on the need to respect the tradition of all methods employed equally, but does not require that all research findings be supported by both quantitative and qualitative data in equal measure.

When quantitative dominance undermines the value of qualitative contributions, it may create tension about the core rationale for using multiple methods (Creswell & Plano Clark, 2017; Ospina et al., 2018). Relegating qualitative strands in a research project to secondary status may reduce their benefits for mixed methods research. Qualitative strands can be employed in a variety of complementary ways, such as to develop valid measures, describe the context, explore content, and seek perspectives in more nuanced ways than quantitative approaches (Creswell et al., 2006; Hesse-Biber, 2010; Mason, 2006). However, respecting the contributions of qualitative data to support and contextualize findings does not require that the qualitative data constitute one-half of all evidence provided.

Quantitative dominance can also affect how research questions are framed and may prevent some important questions from being developed. As Raimondo and Newcomer (2017) suggest, employing quantitative methods tends to result in developing and answering inferential and correlational questions. Qualitative researchers in public policy and public administration can develop and address how and why questions, or as Ospina et al., 2018 suggest, they can draw attention to the field’s “big questions” and provide rich descriptions of the social aspects of public administration and policy making (p. 593).

Similarly, Gilad (2019) draws attention to the need to draw more extensively on qualitative methods to avoid reductionist explanations, and better frame and unpack the nuances of complex problems and the complex solutions needed in the public sector. Relatedly, Mason (2006) suggests that qualitative contributions to mixed methods studies can identify and open new perspectives on social issues. Employing a qualitative approach in mixed methods can improve explanatory power by making the transfer of analytical findings to wider populations possible (Mason, 2006). Similarly, Hesse-Biber (2010), via an examination of in-depth case studies, identifies and describes how qualitative-dominant mixed methods designs may increase a study’s credibility and the transferability of findings. Qualitative methods can help depict important characteristics of the group studied and contextual factors to improve the transferability of study findings, unravel inconsistent findings, and address issues of social justice (Hesse-Biber, 2010, 2015).

The more open and exploratory nature of qualitative methods offers researchers opportunities to probe new and more complex issues. Creswell et al. (2006) highlight the ability of qualitative methods to help develop quantitative measures where no appropriate measure exists or

where complexity and change in a research setting require a more holistic investigation. In particular, “qualitative data can assist the quantitative component of a study by helping with conceptual and instrument development...and play an important role by interpreting, clarifying, describing, and validating quantitative results, as well as through grounding and modifying” (Johnson et al., 2007, p. 115). As a social phenomenon-oriented field, public administration stands to benefit from studies that appropriately include a qualitative approach to developing knowledge.

And perhaps the biggest challenge facing mixed methods researchers is to productively integrate the research processes and findings from the quantitative and qualitative strands of their work. Drawing from their review of public policy and public administration studies, Hendren et al. (2018) concluded that mixed methods researchers need to plan and devote more effort to capitalize from integrating the quantitative and qualitative strands of their research. Similarly, Mele and Belardinelli (2019, p. 344) call for a “tighter combination of the findings obtained through separate research processes.”

Calls for more intentional and creative integration of findings from qualitative and quantitative strands sound reasonable, but what does productive integration actually entail? Triangulation has long been a clear way to integrate methods and data (Bryman, 2006; Greene, 2007), but examining and reporting on levels of convergence, corroboration, and/or correspondence across findings generated through different methods is but one of many purposes served by using multiple methods. Generating data via both quantitative and qualitative methods has been promoted to serve a variety of worthy objectives in mixed methods research, including complementarity, or providing a more comprehensive understanding of one phenomenon; development of instruments or additional questions, such as from unexpected results; expansion of inquiry by collecting different data to examine different phenomena; enriching explanations, such as of causal descriptions provided by experimental designs; and confirming and discovering a diversity of views (see Bryman, 2006; Greene, 2007; Greene et al., 1989).

A challenge to mixed methods researchers is to understand and clarify how and why the methods they have employed relate and are effectively integrated. Mixed methods studies in which the qualitative and quantitative methods remain separate and discretely identifiable are more common than studies that intentionally blend and merge the different methods, data, or inferences (Greene, 2007, p. 122). For example, sequential use of different methods to serve distinct purposes, such as holding focus groups first to develop questions to include in a survey is quite common, but it does not logically lead to an intentional and nuanced blending of the insights developed from both efforts. The integrative task researchers

face will likely entail joint analysis and drawing connections across different data during the analysis process, which will be greatly facilitated when qualitative approaches are treated as an “equal partner” to quantitative methods.

## METHODS

### Search strategy

To analyze mixed methods studies in public policy and public administration, we first developed a comprehensive list of mixed methods studies from prominent scholarly journals. We selected 29 journals to examine, ensuring a broad and representative scan of the mixed methods literature in public policy and public administration. We selected 28 of the 29 journals because they appear in the Journal Citation Report's<sup>1</sup> public administration category as well as the Public Administration Abstracts. By including journals listed in both sources, we searched for the most highly cited journals in the public policy and public administration field as well as journals that are seen as most relevant in public administration. One journal outside of the two sources—*Review of Policy Research*—was added to the sample because of its reputation as a well-known public policy journal.

We searched within all 29 journals using a search string that included combinations of terms designed to return a broad and comprehensive sample of mixed methods articles. The search terms, presented in Table 2, are designed to net both those articles that identify themselves as mixed or multi-method, as well as those articles that do not identify as mixed methods but employ a quantitative and qualitative method of data collection or analysis.

Based on the terms listed in Table 2, any article that contains a mixed method keyword OR a combination of quantitative and qualitative keywords was identified by our search.

Results were restricted to peer-reviewed articles published in 29 journals and available in English. At the search stage, we excluded all book reviews, letters, and editorials. Additionally, the date range for the search was from 2010 to 2018, allowing us to take a broad sample of the most recent work in public policy and public administration. Previous literature sampling as far back as 1980 found that more than half of mixed methods studies in public policy and public administration have been published since 2010 (Hendren et al., 2018). Therefore, our results are based on recent publications in the field rather than indicative of trends over multiple decades. The initial search was conducted on August 29, 2018 and returned 360 articles.

### Abstract coding

In the first step of the multi-step coding process, a team of eight coders, including three of the study authors, each

**TABLE 2** Search terms (Unknown characters in Web of Science search are represented by \* and \$; with \* representing none or multiple characters and \$ representing none or one character)

Mixed methods key terms:	“mix* meth*” OR “multi method*” OR “multiple method*” OR “multi* strateg*”
	OR
Quantitative and qualitative keywords:	regression\$ OR survey\$ OR experiment* OR quantitative OR “administrative data” OR “administrative record\$” OR questionnaire\$ OR econometric OR statistical
	AND
	qualitative OR interview\$ OR “focus group \$” OR “discourse analys\$” OR “content analys\$” OR “grounded theory” OR ethnograph* OR phenomenol* OR narrative OR “case stud*” OR “thematic analys\$” OR hermeneut* OR “archival data” OR “theoretical sampl*” OR “Observation” OR “inductive” OR “interpretive” OR “abduction”

reviewed 45 study abstracts to determine if each of the 360 results fit the sample criteria. The abstract review was based on two questions: (1) Is the article an empirical paper? and (2) Does the article use both qualitative and quantitative methods? If from the abstract, the coder believed that the article was an empirical article and was mixed methods, then the article was marked for inclusion in the final sample. If the coder believed from the abstract that the article was either not empirical or not mixed methods, the article was excluded from the final sample. Finally, if there was not enough information to answer either question, the article was marked as a “maybe” and moved to a separate list for adjudication. Once the abstract coding was completed, three coders adjudicated any “maybe” articles by reviewing the full text to answer the two screening questions. All eight coders were trained on the key criteria prior to coding. The abstract coding eliminated 174 articles on the grounds of either being not empirical or not mixed methods, leaving 186 articles in the final sample.

### Design coding

Following this initial round of coding, the remaining 186 articles were coded by the same coders a second time for major design elements, including research questions, mixed methods rationale, data collection and analysis methods, and dominance of the qualitative and/or quantitative strands (for a full list of design coding elements, please see supplemental materials Appendix A). To carry out design coding in a clear and replicable manner, all eight coders underwent a multi-phase training and trial period. All coders were provided coding guidelines and trained on the design coding criteria before completing an initial set of double-coded articles. A

follow-up training session clarified areas where there were inconsistencies or disagreements among coders. A second trial period of double coding articles showed the number of inconsistencies drop significantly, though we did not formally measure inter-coder reliability. After observing a reduction in inconsistencies, the remaining articles were coded by one of the eight coders, with select fields checked by a second coder.

## Qualitative-dominant coding

One part of our analysis focused on a subset of articles that were deemed to have a dominant qualitative strand.<sup>2</sup> The priority given to qualitative and quantitative strands is one element of the mixed methods design (Molina-Azorin, 2018). A study may emphasize one method over the other for many reasons, including “the research question, from practical constraints on data collection, from the need to understand one form of data before proceeding to the next, or from the presumed preference of the intended audience” (Molina-Azorin, 2018, p. 6). In the design coding phase, articles were coded as being “qualitative dominant,” “quantitative dominant,” or “equal status” based on criteria outlined by Creswell et al. (2006, p. 3) that suggested a review of the article title, worldview, study purpose, proportion and depth of qualitative versus quantitative analysis.

It is important to clarify that guiding worldview is one element that contributes to the dominance of a qualitative or quantitative strand when explicitly stated, but worldview alone does not determine whether a study is qualitative- or quantitative-dominant. With both mixed- and single-method designs, worldview and choice of methods are not necessarily interdependent. In mixed methods studies, an author could employ positivist, interpretivist, or a combination of worldviews. Identifying an author’s worldview(s), when not explicitly stated, and the role they play in influencing study design is often difficult. Thus, we include explicitly stated worldview(s) in our coding of dominance and we give equal consideration to Creswell et al.’s (2006) other criteria. Using Creswell et al.’s criteria, the eight coders identified 36 articles of the 186 as qualitative-dominant. Thus, the final sample analyzed later in this paper consists of 36 qualitative-dominant articles from prominent public policy and public administration journals.

The final set of qualitative-dominant articles was coded by three of the study authors to determine (1) basic characteristics of the study and study methods (e.g., discipline, case selection), (2) alignment of the article with standards for qualitative research design and reporting (e.g., justifying methodological decisions, criteria for saturation, thick description), and (3) alignment of the article with the quantitative portion of the Mixed Methods Appraisal Tool (MMAT), which asks four broad questions about study sample, measures, and analysis.

The MMAT tool, developed by Pluye et al. (2009) and updated in 2018 (Hong et al., 2018), distills key methodological questions into concise appraisals for a diverse range of research designs, including various quantitative designs (e.g., randomized-controlled, descriptive) as well as qualitative and mixed methods (see <http://mixedmethodsappraisaltoolpublic.pbworks.com/w/page/71030694/FAQ>). Coding included both closed-ended and open text fields. The ultimate purpose of the qualitative coding was not to make an overall assessment of study quality but to describe each study and identify practices that illustrate the benefits of strong qualitative strands.

The qualitative coding recorded pre-set as well as emergent themes, to ensure certain key study characteristics were recorded, as well as the authors’ impressions and intuitions about each article. The three coders piloted the coding criteria with a small selection of articles, then met to discuss questions on the coding criteria, resolve areas of disagreement, and ensure greater uniformity in coding within the group. Following the coding pilot, the articles were randomly assigned to and coded by a single coder. The coding was recorded through a Google Form, which collected responses for each article and collated them into a back-end spreadsheet.

## RESULTS

In the following sections, we report on the findings of our analysis of qualitative-dominant mixed methods studies. We answer our first research question, “How do qualitative-dominant mixed methods studies differ from quantitative-dominant ones in public policy and public administration?” in three sub-sections which discuss strand dominance, data collection, and analysis methods, and reporting key methodological decisions. Next, in response to our second research question, we offer ways that qualitative methods can be leveraged to strengthen mixed methods research. We present seven ways that authors of qualitative-dominant studies leveraged the qualitative strand as well as a discussion of how to best integrate qualitative and quantitative strands in order to best capitalize on robust qualitative methods. Finally, we conclude with a section that lays out guidelines to improve reporting in order to answer our third research question, “What key reporting elements are needed in a mixed methods study to increase the strength and credibility of findings?” In answering all three research questions, we rely heavily on our analysis of qualitative-dominant studies, which offer a unique sample for understanding the power of qualitative strands to strengthen mixed methods studies. Our systematic comparison of qualitative-dominant mixed methods studies with quantitative dominant studies points to the value of analyzing qualitative dominant studies in greater detail, a point which the sub-sections below address in greater detail.

## Strand dominance

Over the time period from 2010 to 2018, we see a slightly positive trend in the total number of mixed methods studies published, increasing from 16 studies in 2010 to 29 in 2018 (see Table 3). Within the wider sample, we see different trends for qualitative-dominant and quantitative-dominant studies over time. In 2010 the number of quantitative-dominant studies ( $n = 6$ ) is similar to qualitative-dominant ( $n = 5$ ); however, while qualitative-dominant hovers around 5 per year between 2010 and 2018, quantitative-dominant studies increase over time. Thus, while mixed methods studies are increasing over time, the use of qualitative-dominant designs has decreased as a percentage of mixed methods studies. In line with Giddings (2006), the data show that the continued push to integrate methods may not promote development and learning about qualitative methods and instead perpetuate the dominance of quantitative methods.

Looking at the trends, we see that public administration and public management journals publish a larger share of mixed methods studies across qualitative-dominant, quantitative-dominant, and equal status studies. Across the board, public administration and public management journals published approximately two-thirds of mixed methods studies, while public policy journals published about one-third. The qualitative-dominant articles are, more so than quantitative-dominant or equal status studies, concentrated in a subsample of journals. Over half of the qualitative-dominant studies ( $n = 25$ ) are published across only five journals. Ten journals published only one qualitative-dominant study and seven journals published none during the time period studied. Thus, the cases where integrating methods may promote, develop and teach about qualitative methods are limited. The concentration of qualitative-dominant articles in select journals reduces widespread exposure to exemplary qualitative-dominant studies and could stunt the

utilization of qualitatively-driven mixed methods scholarship (Giddings, 2006; Hesse-Biber, 2015; Mason, 2006).

## Data collection and analysis methods

Articles in the sample showed little variation in terms of data collection for qualitative and quantitative strands, as seen in Table 4. Qualitative data collection was undertaken primarily through interviews, with between 72% (quantitative-dominant) and 89% (qualitative-dominant) of articles utilizing interviews for collecting qualitative data. Document analysis (20%–39%), open-ended survey items (8%–12%), and focus group discussions (16%–19%) also served as qualitative data collection methods. We see similar homogeneity in quantitative data collection methods, with surveys providing the vast majority of quantitative data (75% for qualitative dominant and 81% for quantitative dominant studies), followed far behind by administrative data (11%–28%) and document analysis (11%–13%).

While we would expect qualitative dominant studies to have a more diverse set of qualitative data collection methods, the qualitative data collection methods are fairly similar across dominant strands with some exceptions. Qualitative dominant studies did use observation and, to some extent, document analysis to a greater degree than quantitative dominant studies. The observation was used by authors in the sample to see first-hand the impact that bureaucratic changes and collaborative governance has on public policy and service recipients' experiences. In one study, observation was used to assess the benefits of collaborative governance for making homelessness policy (Doberstein, 2016). By witnessing the decision-making process in a collaborative governance process, the article was able to see greater diversity, debate, and working across boundaries in the collaborative setting (Doberstein, 2016). Yet another study used observation to see the impact of changes to

**TABLE 3** Number of mixed methods studies published over time<sup>a</sup>

Year	<i>N</i>	Percentage of qualitative dominant	Percentage of quantitative dominant
2010	16	31%	38%
2011	14	14%	43%
2012	18	22%	39%
2013	27	26%	26%
2014	17	24%	29%
2015	24	13%	38%
2016	23	13%	43%
2017	19	21%	37%
2018	28	14%	43%
Total	186	19%	37%

<sup>a</sup>Those studies that equally weighted the qualitative and quantitative strands are excluded from the table.

**TABLE 4** Breakdown of qualitative data collection by dominant strand

Qualitative data collection	Percentage of qualitative dominant studies	Percentage of quantitative dominant studies
Interview	89%	72%
Document (e.g., policy text)	39%	20%
Survey	8%	12%
Focus group	19%	16%
Observation	14%	0%
Administrative data (e.g., agency or employment data)	6%	4%
Ethnography	3%	0%
Other	3%	3%
<i>n</i>	36	69

Note: If relevant, studies were coded for multiple data collection methods.

customer service and friendliness practices in Medicaid offices across New York City (Isett et al., 2013). The use of observation methods benefits of implemented changes, such as recipient reactions, office climate, and staff attitudes (Isett et al., 2013). In both cases, the observation allowed the researchers to see human interactions, reactions, and intangible outcomes that would not have otherwise been included in the study in the absence of observation.

Like the data collection methods, we do not see great variety in the qualitative data analysis methods used across strand dominance. For quantitative dominant studies, over 70% used a basic interpretive data analysis method, with thematic coding coming in at a distant second with 13%. Qualitative dominant studies similarly relied heavily (50%) on basic interpretive analysis methods, with equal use (50%) of thematic coding. Among those studies that use basic interpretive data analysis methods, the vast majority of both qualitative dominant (47%) and quantitative dominant (67%) studies were an inferred basic interpretive approach. Basic interpretive data analysis methods take a general content analysis approach characterized by inductive or deductive coding, but without a specific discussion about the selection or development of coding themes. If the authors discussed the development of coding themes, the analysis method was coded as “Thematic Coding” rather than “Basic Interpretive.” For example, studies coded as basic interpretive explicit stated, “our approach to qualitative analysis was predominately inductive—probing what themes emerged from the raw data as opposed to deductive techniques” (McAllister et al., 2015, p. 385) and “we carry out content analysis” (Almanzar et al., 2018, p. 323). We use “inferred” and “explicit” to differentiate between those studies, like

**TABLE 5** Qualitative data analysis method by strand<sup>a</sup>

	Percentage of qualitative dominant studies	Percentage of quantitative dominant studies
Thematic coding	50%	13%
Basic interpretive/content analysis explicit	3%	9%
Basic interpretive/content analysis inferred	47%	67%
Narrative analysis	6%	1%
Grounded theory	8%	0%
Qualitative comparative analysis	3%	3%
Theoretical coding	11%	1%
Discourse analysis	0%	1%
Other	6%	7%
<i>n</i>	36	69

<sup>a</sup>If relevant, studies were coded for multiple data analysis methods.

those above, that explicitly discussed their data analysis method (explicit) and those studies which did not state that they used an interpretive approach, but were coded as using an interpretive approach based on the data collection and presentation of results (inferred). We saw greater diversity among qualitative dominant studies in the use of theoretical coding (11%), grounded theory (8%), and narrative analysis (6%) than in quantitative dominant studies (see Table 5).

One tremendous benefit of qualitative research is the diversity of analysis approaches and data sources available to researchers. In addition to narrative analysis, grounded theory, phenomenological, case study, and ethnographic approaches could have tremendous benefits for mixed methods practice (Creswell & Poth, 2016; Merriam & Tisdell, 2016). Life stories, artifacts, cultural texts, and all observations are powerful qualitative data sources that can be used to explore complex and human-centered aspects of policy research. An increased reliance on the full spectrum of qualitative approaches and sources in mixed methods may yield even greater flexibility and insights for public policy researchers.

## Reporting key methodological decisions

Across all studies, there was very little reference to methodological literature to substantiate or explain the motivation for the study’s research design, data collection, and analysis, as shown in Table 6. Only 19% of qualitative dominant and 10% of quantitative dominant studies referenced methodological literature in their articles. The majority of



studies that did reference literature looked to canonical mixed methods studies (Creswell & Plano Clark, 2017; Greene et al., 1989; Tashakkori & Teddlie, 1998) or general research methods texts (Bryman, 2016; Creswell, 2009). A handful of studies relied on literature for describing and justifying specific methods, such as qualitative comparative analysis, nested analysis, and case studies. Finally, a small number of articles ( $n = 3$ ) referenced literature that discussed the history and challenges associated with choosing and integrating methods (Guba & Lincoln, 1994; Ricucci, 2010; Yang et al., 2008).

Reporting on key methodological decisions was absent across both quantitative dominant and qualitative dominant studies. For example, nearly 80% of qualitative dominant studies and 90% of quantitative dominant studies do not include reporting of missing data for either the quantitative and/or qualitative strand. Reporting of missing data was particularly low for qualitative strands, with 88% of quantitative dominant and 72% of qualitative-dominant studies not reporting missing data for the qualitative strand. Sampling methods were more often reported, but still absent for qualitative strands in 22% of qualitative dominant and 26% of quantitative dominant studies.

Over a third of qualitative dominant studies (36%) and a quarter (26%) of quantitative dominant studies did not discuss the motivation for integrating methods. A discussion of data collection timing was similarly missing in about one-fifth of the studies. Each of these items is a crucial methodological decision, and the low rates of reporting indicate a potential need for better guidance in describing methodological decisions across quantitative and qualitative strands of mixed methods studies.

**TABLE 6** Missing methodological decisions by dominant Strand

	Percentage of qualitative dominant	Percentage of quantitative dominant
Missing data		
Quan missing data not discussed	42%	36%
Qual missing data not discussed	72%	88%
Either strand missing data not discussed	78%	90%
Sampling		
Qual sampling unclear	22%	26%
Quan sampling unclear	25%	13%
Rationale for mixing		
No stated rationale	36%	26%
Data collection timing		
Data collection timing: unclear	19%	23%
<i>n</i>	36	69

The low rates of reference to the mixed methods literature are mirrored by sparse discussion of mixed method purpose, justification of design choices, and rationale for study methods. Very few authors discuss the challenges of combining methods or state a purpose for mixing methods. In many cases, coders noted that the purpose for mixing methods was unclear because of an overall lack of methodological reporting in the article or sparse reporting on one or the other strand. Furthermore, only a minority of studies discuss limitations of its research design, data collection, or analysis methods. While this reflects the findings of previous reviews (Ospina et al., 2018), it is nonetheless surprising given the importance of acknowledging the potential limitations of a research design.

The data may indicate that researchers can improve their engagement with methodological literature, as well as their reporting about methodological decisions in the research process. The potential for studies to expand their methods and improve their reporting and discussion of methodological choices and study limitations in future studies is worth exploring.

Overall, our findings indicate that the rise of mixed methods is not indicative of an increase in the use of qualitative methods, and that very few authors are referencing and drawing upon methodological literatures in their reporting. In combination, the overreliance on quantitative methods and lack of reference to methodological literatures contradict claims about the potential benefits of mixed methods research for public policy and public administration. A potential ramification of the lack of methodological references is seen via the low levels of reporting on key methodological and research design decisions. And a possible consequence of overreliance on quantitative methods is an underutilization of the thick, rich description characteristic of qualitative methods.

Given these shortcomings, an analysis of qualitative-dominant studies offered an opportunity to learn how qualitative methods can be leveraged more effectively to strengthen mixed methods studies, and how more transparent reporting about methodology associated with both qualitative and quantitative methods can improve the credibility of mixed methods research in the future.

## LEVERAGING QUALITATIVE METHODS TO STRENGTHEN MIXED METHODS RESEARCH

The qualitative-dominant studies we reviewed yielded lessons for how to leverage the benefits of qualitative methods and better capture the full potential of mixed methods research. Using both etic and emic coding of qualitative-dominant studies, we identified seven ways that authors leverage qualitative strands to enhance mixed methods studies. For etic coding, we started with a list of commonly known benefits of qualitative research, such as asking “how” questions, gathering new or

underrepresented perspectives, and adding context and nuance to a study, and reviewed each paper for instantiation. Within the larger themes, emic codes emerged that helped to expand our understanding of the broader themes. Emic codes include, for example, using “how” questions to analyze mediators of causal relationships, and privileging participant, citizen, and street-level bureaucrat perspectives. In this section, we review how study authors leveraged qualitative strands in the following seven ways: to answer “how” questions, focus on participant perspectives, provide context, add nuance to quantitative findings, develop measures and concepts, increase the credibility of findings, and unravel inconsistencies (Table 7).

First, qualitative research can be used to answer “how” questions that go beyond numerical representations of relationships and trends. As we reviewed the articles for this study, we identified research questions that incorporated the research process into question development and exhibited a desire to explore a social phenomenon deeply. A qualitative approach allows research questions to evolve throughout the research process rather than relying on an empirical investigation of a stated hypothesis. “How” questions are especially effective at evoking the sense of openness critical to qualitative research. Authors in our sample used “how” questions to analyze causal mechanisms (Boon & Verhoest, 2014), mediators of causal relationships (Williams, 2018), and to explain the role that study context played in influencing results (Doberstein, 2016; Van der Wal, 2011). For example, in their study on agency overhead, Boon and Verhoest (2014) explore causal mechanisms in answering, “how can the reported overhead level of different types of agencies be explained by combinations of formal autonomy, result control, agency size, and task,” (p. 235). Van der Wal (2011) uses “how” questions to compare the decision-making context in public versus private organizations and found that involvement of internal versus external stakeholders, “strongly influence the importance of values like responsiveness and transparency” (p. 656). Including qualitative methods means, in these and other cases, that the authors can go beyond a statistical relationship and present findings on the context within which and the mechanisms through which a relationship exists.

Second, framing research questions from a qualitative perspective enables the researcher to make sense of the phenomena under investigation with regard to the specific meanings that participants bring to them. Privileging participants’ perceptions and experiences enables researchers to understand how participants make sense of their lives and therefore offers the understanding of multiple realities (Creswell & David Creswell, 2018). Authors used qualitative strands to explain stakeholders’ beliefs and assumptions, explore intangible aspects of users’ experiences and highlight many different and new perspectives, including those of street-level bureaucrats,

service users, and citizens. For example, in assessing the role that nonprofit organizations play in administration, D. P. Carter (2017) asks, “Do residents believe nonprofit community-based organizations can play a legitimate representational role?” (p. 842). Carter’s use of *believe* frames a qualitative approach intent on incorporating resident voices into the analysis. Placing study participants at the center of the inquiry, beginning with how they framed their qualitative research questions, Carter places focus immediately on the human perspective. We found that studies that privilege participants’ perspectives are able to highlight important elements of social phenomena not captured through quantitative data alone.

Third, the descriptive context that qualitative strands provide an increased transferability by elucidating the characteristics of the study environment that are necessary for or likely to influence study findings. Lam and Ostrom (2010) used qualitative interviews to carefully consider the contexts in which community-managed water schemes were successful, finding that, “leadership is particularly important in the context where farmers tend to be hesitant to resort to formal punishment and consider discussion and arbitration as a better means for conflict resolution,” (p. 22). Providing context of the study improves the transferability of findings by helping guide readers to better understand when, where, and how promising practices can be applied.

Fourth, qualitative strands add nuance to findings in many ways, including expanding the description of contexts and perspectives, fleshing out transparency and accountability processes, and explaining the relationships involved in networks, contracting, service provision, and policing. For example, in a study of the relationship between government departments and their agencies, Schillemans (2013) used focus groups to discover that, “while many agencies actually do participate in policy processes, they are usually consulted at the start only and are often shut out when tensions rise and decision-making edges closer” (pp. 552–553). The nuance added here goes beyond a “yes” or “no” and tells us how and when agencies get a say in the policy process.

Fifth, qualitative strands can play an integral role in developing measures, including by contributing to writing survey questions, fleshing out program theory (Hall et al., 2012), and by operationalizing new concepts. Mosley and Grogan (2012), for example, used interview data collected from a small group to construct quantitative survey questions that were administered to a broader representative sample.

Sixth, in addition to developing measures, the qualitative strands can be used to improve the accuracy of measurement and credibility of results. Qualitative strands can be used to triangulate findings from the quantitative strand, as in Damgaard & Torfing, 2010, where qualitative interviews confirm quantitative results, improving the accuracy of findings.

TABLE 7 Leveraging qualitative methods

Theme (how to leverage qualitative methods)	Code	Illustrative quote
Addressing “how” and why questions in the qualitative strand	Analyzing Causal Mechanisms Explaining the Role of Context Analyzing Mediators of Causal Relationships	<p>Walker et al. (2013): “Learning more about why collaborations succeed or fail is important for managerial practice, and this article provides detailed insights for practitioners who are considering buying cooperatively with other organizations and for policy makers who are implementing a collaborative procurement policy.” (p. 588)</p> <p>Millar and Hall (2013): “Quantitative survey data were used to explore the use of performance measurement tools across all SEIF investees, whilst the qualitative data were used to provide insight and depth into the reasons why certain tools were (or were not) utilized... Interviewees also highlighted the practical implementation issues associated with SROI, including the significant time and cost of resources required. ... Overall, despite the Department of Health’s goal to encourage the use of SROI, our research found that SROI proved relatively unsuccessful due to these methodological and practical challenges.” (pp. 930; 934–935)</p> <p>Doberstein (2016): “The changing of minds in this context is not fundamentally characterized by compromise, but rather was about learning, persuasion, and transformation. Examples identified from participant observation can help demonstrate how arguments were accepted, transformed, or ejected from deliberations, and ultimately shifted the collective policy choices... In this context, horse-trading and compromise were not fundamental dynamics at play—rather, it was learning and transformation among collaborative governance members that produced a collaborative advantage in policy terms.” (p. 834)</p> <p>Lam and Ostrom (2010): “An interesting question of major policy importance is whether one could identify a set of causal conditions, amidst diverse experiences, that are conducive to the persistence of the intervention effect. Based upon a review of the literature as well as the qualitative interviews conducted with farmers from the 19 systems, we identify five factors that may explain why some systems have continued a higher level of performance and why there are differences in the long-term effects of the intervention project.” (p. 14)</p>
Privileging participant experiences and new perspectives provides a more complete picture	Explaining Stakeholders’ Beliefs and Assumptions Explaining Views of “democracy” and “representation” Comparing Experiences of different actors Probing Intangible Aspects of Users’ Experiences Giving a Voice to: Service Providers/Front-line Workers; Local Officials; Public Managers; Citizens; Users of Services; Those who are Impacted by Policies; and Researchers	<p>Walker et al. (2013): “Our research suggested four barriers to collaboration that have not been previously identified in the literature that gives a more fine-grained detail to understanding the tensions between collaboration and the needs of local organizations. Collaborations may present obstacles to ‘managing local stakeholders’, as attention may be focused on collaborating at the expense of local interests. Participants were concerned that collaborations might cause members to ‘neglect the interests of their own organization and the needs of the local community’ that they represent.” (p. 594)</p> <p>Hetling et al. (2014): “This research project examines the perspectives of clients and potential clients regarding the use of online applications for TANF, popularly referred to as welfare. The motivation behind the project is based on the possibility that a mismatch exists between client needs and preferences and the design and use of technological advances.” (pp. 520–521)... “Almost unanimously, focus group participants supported the idea of giving applicants a choice between going into the office for a traditional in-person interview or applying online.” (p. 538–539)</p> <p>Carter et al. (2013): “By focusing on employees’ first-hand encounters with lean, the paper suggests that the pursuit of measurable efficiencies through lean has simultaneously undermined the legacy of public service ethos, with potentially damaging results for public administration... Reporting the insights and perceptions of the largely unionized workforce helps to illuminate how lean has been disseminated and shapes everyday experiences within tax processing, highlighting the disconnect between policy aspirations and the reality of lean implementation.” (pp. 83–84, 89, 95)</p>
Provide context and increase transferability, explanatory power	Clarifying Limits of Transferability Developing Promising Practices Developing Relevant Aspects of Contexts	<p>“As a result of immersion within the case of homelessness collaborative governance at the RSCH, we are in a position to reflect on the design and management conditions that contributed to a collaborative advantage in policy terms in this case of government-funded collaborative governance. ... to theorize facilitative and leadership characteristics of successful collaborative decision-making.” (p. 835)</p> <p>Lam and Ostrom (2010): “First, how important is continual infrastructure investment for sustaining adequate water supply in the systems?” (p. 20) ... “As we have found in</p>

(Continues)

TABLE 7 (Continued)

Theme (how to leverage qualitative methods)	Code	Illustrative quote
Add nuance for a more complete picture and/or to untangle complexity in social issues/situations	Explaining the Role of Relationships involved in: Networks, Contracting, Service Provision, and Policing Fleshing out Transparency and Accountability Processes Explaining Nuances in: Organizational Context and Timing Highlighting Perceptions of: Users, Stakeholders, and Policy actors Explaining Policy Processes	<p>the qualitative interviews, local leaders have played an important role in enhancing and maintaining farmers' collective action in the project irrigation systems. Not only have they provided a locus for coordinating collective action but they also served as an arbitrator in resolving conflicts and disputes among farmers. In fact, leadership is particularly important in the context where farmers tend to be hesitant to resort to formal punishment and consider discussion and arbitration as a better means for conflict resolution." (p. 22)</p> <p>Van der Wal (2011): "The extent to which transparency can be an important organizational value is highly dependent on the specific phase in the decision-making process... Sometimes non-transparency or secrecy better serves long-term organizational goals and interests, which also implies that different levels of transparency are applied to internal and external stakeholders. In the same vein, such graduality applies to accountability, described in many statements as 'a hydra-headed phenomenon with multiple applications and implications: its importance and actualization depend on who is addressed (audience) at what time (timing) on which topic (content)'" (p. 651)</p> <p>McAllister et al. (2015) (p. 382), "We present qualitative data that probe: the commercial risks different actors perceive, whether or not they think the partnerships effectively maintain trust, and how well aligned the motivations of different actors are who participate in the networks." "While state governments reported that providing affordable housing, and meeting of government land release targets were the primary goals of partnering with developers, private developers emphasized improved profitability." (p. 393)</p> <p>Schillemans (2013): "The focus groups with participants from both groups added that, while many agencies actually do participate in policy processes, they are usually consulted at the start only and are often shut out when tensions rise and decision-making edges closer. Also, the respondents suggested that the power distance with government departments is felt to be too big... The focus groups added on this issue that agencies often felt that policy departments did not feel that their jobs of implementation and enforcement were of equal importance to policy formulation." (pp. 552–553)</p>
Develop measures or concepts	Construct Survey Questions Fleshing out Program Theory Operationalizing New Concepts	<p>Hall et al. (2012): "To establish the programme theories underpinning the SEIF we undertook a detailed examination of its documentary history and used semi-structured interviews with key stakeholders to identify the mechanisms through which the SEIF was expected to achieve its outcomes... Analysis of this was used to generate a diagrammatic articulation of the short, medium, and long-term steps involved in achieving SEIF outcomes (see Lyon et al., 2010)." (p. 738)</p> <p>Mosley and Grogan (2012): "The qualitative interview data were then used to construct a bank of questions included in a larger representative survey of residents of the Southside (<math>n = 155</math>)." (p. 848)</p>
Credibility	Offering Triangulation Improving Accuracy of Measurement Providing/reconciling Diverse Perceptions on Service Delivery	<p>Damgaard and Torfing (2010): "The ability of the LECs to influence key decisions in the local employment policy is evidenced by a reasonably high opinion balance (+45 percentage points) and confirmed by the case study. The latter shows that the LECs' funding of local projects gives the LEC members a strong feeling of purpose and considerable influence." (p. 255)</p> <p>Hijal-Moghrabi (2017): "The purpose of the content analysis was partly to compensate for the small sample size of the survey, and partly to provide a snapshot of the scope of the adoption and actual implementation of PBB in the largest US municipalities in order to assess the extent to which the cities that claim the use of PBB in the survey are actually doing so, as reflected in the operating budgets that are posted on their websites" (p. 661)</p>
Unravel inconsistencies	Clarifying Surface Contradictions in Findings based on Qual and Quan Data Analyzing Theoretical Inconsistencies	<p>McAllister et al. (2015): "Accordingly our analysis reveals the states' central role. Yet, contrasting the quantitative and qualitative data highlight what might simplistically be seen as contradictory. While the quantitative analysis shows state governments are solving cooperation problems characterized by exposure to risky relationships, the qualitative data show that (1) the state government is well trusted, and (2) our partnership networks were devoid of conflict. The deception is that the qualitative data show the degree of trust that resulted from network interactions, while the network structure itself shows how hard stakeholders needed to work to achieve this level of trust" (p. 394).</p>

Finally, qualitative strands can be used to unravel inconsistencies, clarify surface contradictions, or analyze deeper inconsistencies. McAllister et al. (2015) unravel such inconsistency in their study of partnership networks, where they use the “risk hypothesis” to differentiate between cooperation problems, where uncooperative behaviors are incentivized, and coordination problems where trust and mutual goals are disincentives to uncooperative behavior. The authors find that “while the quantitative analysis shows state governments are solving cooperation problems characterized by an exposure to risky relationships, the qualitative data show that (1) the state government is well trusted, and (2) our partnership networks were devoid of conflict” (p. 394). In this case, the qualitative data show high levels of trust and low levels of conflict in state networks, which is inconsistent with state governments’ view of their network as uncooperative. Here, as in other studies, qualitative methods may illuminate an inconsistent point of view, the resolution of which leads to more robust and complete findings.

## IMPROVING INTEGRATION: MOVING FROM MULTIPLE TO MIXED METHODS

Strong qualitative strands contribute to a mixed methods study in many ways. However, scholars continue to point to thoughtful integration as a goal of mixed methods research and, in some cases, part of the definition of high-quality mixed methods studies (Hendren et al., 2018; Mele & Belardinelli, 2019; Richwine et al., 2022). The question remains, how to integrate robust qualitative and quantitative strands in a way that benefits the credibility of the study findings? Our analysis of the qualitative-dominant studies reveals that integration can happen in many ways, but can be greatly improved by clearly stating the role of each strand in the study at large and specifying the method(s) that support each result.

We analyzed our sample of qualitative-dominant studies and found diverse approaches to integration. In some cases, integration is intentional and takes place from question formation through to reporting results. In many other cases, quantitative and qualitative data collection is sequential, and strands are only integrated at the concluding stages. Finally, in still other studies, strands are so organically integrated by researchers that no discernable separation of the contributions of each can be made. The diversity of approaches to integration reinforces the idea that there is no one “right” way to integrate. Regardless of when, where, and how integration takes place, some researchers do a better job of integrating than others. Here we note two promising practices for integration that benefit the study as a whole by clarifying research intentions and actual practices in reporting.

First, integration is improved when the logic for using each strand and the method for aligning data from one strand with data from the other is clearly stated (as in

Carvalho & Brito, 2012; Hazenberg et al., 2014). Laying out the purpose for mixing methods and the role that each strand plays vis-à-vis the other tells the reader how each strand individually, and the two together, answer the research question(s) posed in the study. There are several helpful frameworks for describing the purpose of a mixed method study (Bryman, 2006; Greene et al., 1989); however, researchers should feel free to use the language that best describes how each strand plays off of, contributes to, corroborates, or expands upon the other. A study may have multiple purposes or may change purpose as a study evolves. What is most important is that the reader can discern something about the relationship between the qualitative and quantitative strands and how each relies upon or bolsters the other.

Second, researchers should clearly articulate in the results and discussion sections which method(s) support a given finding. Whether data are collected and reported concurrently or sequentially, linking each source of data to findings signals to the reader where two methods support a given finding together, and where one strand or the other supports a finding alone. Citing the specific data source for a given finding or conclusion reinforces how integration strengthens the credibility of findings. If the researchers have described the proposed relationship between the two strands (as suggested above), then by clearly citing the source or sources for each finding and conclusion, the reader sees how intentional integration of methods bears fruit in the depth, breadth, and credibility of findings.

Integration is not viewed as an automatic phenomenon, even within the mixed methods literature. Researchers undertaking a mixed methods study have to carefully consider how, when, and where to integrate findings from various research strands. When integration is done well, we move from siloed methods to mixed methods, where the reader benefits from a strong, well-developed, and clearly articulated relationship between the qualitative and quantitative components. Clear reporting of the intended role as well as the actual use of each strand signals to the reader the benefits of strategically mixing methods to support study findings and conclusions.

## GUIDELINES TO IMPROVE REPORTING OF MIXED METHODS RESEARCH

The variety of approaches for integrating qualitative and quantitative research underscores the need for reporting guidelines that incorporate both qualitative and quantitative elements and emphasize thoroughness, transparency, and justification of methodological decisions. Indeed, a clearly stated rationale and transparent design decisions are not only fundamental to social science reporting, but may also increase the quality of a mixed methods study (Richwine et al., 2022). A strong mixed

**TABLE 8** Suggestions for reporting mixed methods research<sup>a</sup>

Clarification objective	Illustrative options	
Stated purpose for using multiple methods	Triangulation, offset, completeness, process, different research questions, explanation, unexpected results, instrument development, sampling, credibility, context, illustration, utility of findings, confirm and discover, diversity of views, enhancement? (Bryman, 2006)	
Match of methods to research questions	Quantitative methods to address what and how many and questions, for example, effect sizes? Qualitative methods to address how and why questions?	
Design	Explanatory Sequential? Exploratory Sequential? Convergent?	
Reference to mixed methods literature	Presence of References to Key resources such as Bryman, 2006; Creswell & Plano Clark, 2017; Giddings, 2006; Greene, 2008; Greene et al., 1989; Johnson & Onwuegbuzie, 2004; Mason, 2006; or Tashakkori & Teddlie, 1998?	
Transparency regarding	Quantitative methods	Qualitative methods
Role of researcher(s)	Cultural humility? Reflexivity? Conflict of Interest? <sup>b</sup>	Cultural humility? Reflexivity? Conflict of Interest? <sup>b</sup>
Data sources	Administrative Data? Stakeholders? <sup>b</sup>	Participants? Other Stakeholders? <sup>b</sup>
Sampling approach/ assignment	Random or type of non-random sampling? <sup>b</sup>	Purposive using which criteria? <sup>b</sup>
Data collection techniques	Surveys? Administrative data? <sup>b</sup>	Participant Observation? Interviewing? Focus Groups? <sup>b</sup>
Timing of measurement	Pre and Post-treatment? Timing? <sup>b</sup>	Timing? <sup>b</sup>
Data manipulation/coding	Primary data coding decisions? Critique of Secondary Data? Treatment of missing data? <sup>b</sup>	Coding Approach? <sup>b</sup>
Data analysis	Technique matched to level of measurement of variables? Appropriate specification of model? Multicultural validity? <sup>b</sup>	Thematic analysis clear? Multicultural validity? <sup>b</sup>
Validation techniques	Concurrent and/or predictive validation? <sup>b</sup>	Member Checking? <sup>b</sup>
Recognition of and addressing limitations	Limitations with: Measurement Validity? Measurement Reliability? Internal Validity? External Validity? Statistical Conclusion Validity? Multicultural validity? <sup>b</sup>	Limitations with: Authenticity/Trustworthiness of Measurement? Auditability? Transferability? Fittingness? Dependability? Confirmability of claims? Multicultural validity? <sup>b</sup>

Note: This table is informed by Newcomer and Hart (2022).

<sup>a</sup>We provide these items as questions that researchers should consider and address when they describe their scope and methods.

<sup>b</sup>Indicates suggested items to include for category but not a comprehensive list.

methods paper should include design quality and interpretive rigor (Tashakkori & Teddlie, 2003) that contribute to and legitimize the generation of “important insights or understandings that would not have been accomplished with one method or one methodology alone” (Greene, 2008, p. 15–16). Mixed methods research and reporting require careful consideration of criteria for the rigor of both qualitative and quantitative data, as well as considerations specific to mixed methods studies. Yet no existing source in public administration offers the combined considerations in one place for mixed method scholars and researchers. Some suggestions that have been offered by qualitative researchers to enhance the trustworthiness of findings offer useful guidance for mixed methods research more generally (Nowell et al., 2017). In Table 8 we offer a set of guidelines to use in conducting and reporting high-quality mixed methods research. We provide a series of questions that researchers should consider and address when they describe their scope and methods. While our consolidated guidelines are neither comprehensive nor final, we hope they will serve as a starting place for mixed

methods scholars and a resource for any author seeking to better understand the combined standards for demonstrating rigor in mixed methods research. The first four rows in our table specifically address the motivation for the use of more than one method. And the following nine rows demonstrate how to achieve transparency regarding key methods decisions, and indeed that there are parallel concerns for both quantitative and qualitative methods.

In mixed methods, as with all qualitative research approaches, transparency is a key aspect of reporting mixed methods studies. Creswell and Plano Clark (2017) contend that researchers should provide a clear, specific purpose for using mixed methods and convey them in their report. It is then important to interrelate the study problem, purpose, and research questions within the research. According to Creswell and Poth (2016), “the research problem statement is used to identify a particular issue in need of investigation; the research purpose statement should advance the major objective for beginning the study; and finally, the research questions must specify the guiding query for narrowing the study” (p. 129). A discussion of integration is needed: when does

it occur; how does it occur; and why? Similarly, Mason (2018) argues that anyone using mixed methods must document and justify their creative process and decisions through which they make their interpretations.

As noted above, transparency in reporting the processes undertaken in qualitative research is always expected. And the role of the researcher is the first item that is addressed in qualitative work, but we suggest that, in fact, the role of the researcher should be addressed for both the quantitative and qualitative aspects of any research. Given the contextual emphasis of qualitative methods and the prominent role of the researcher, reflexivity is an essential practice in qualitative methods (Coffey & Atkinson, 1996; Mason, 2017). Reflexivity on behalf of the researcher entails acknowledging how the researcher's values might influence a study's conclusions either positively or negatively. We suggest that researchers address reflexivity regarding both quantitative and qualitative data, as it is relevant whenever researchers are interpreting data, including quantitative data collected by another entity. In addition, cultural humility is clearly needed and how cultural differences were addressed in any data collection, analyses and interpretations should be explained, as should any "Conflict of Interest."

Notably, Donald Campbell's legacy in diagnosing potential threats to measurement, internal, and external validity continues to shape not only quantitative research reporting (Campbell & Stanley, 1963) but also the criteria for qualitative research reporting. For example, concern with how well we measure concepts of interest is always of concern, whether we view it as measurement validity of quantitative data, or authenticity or trustworthiness of qualitative data. Regarding measurement, Brower et al. (2000) emphasize the ideas of authenticity, plausibility, and criticality (drawing upon Golden-Biddle & Locke, 1993), which are necessary for qualitative research to be credible to readers. Authenticity relies on thick, rich descriptions to give readers the sense that the author was there, in the field and interacting with study participants. Plausibility refers to the idea that findings and claims are acceptable and believable at "face value." And, criticality refers to qualitative research that raises questions for readers and/or encourages them to consider new, unorthodox, and contradictory accounts.

While reliability and replicability are certainly viewed differently by qualitative and quantitative researchers, the notions of auditability and audit trails in qualitative research are not that foreign to quantitative researchers. In fact, maintaining clear and transparent audit trails should be a goal in quantitative data collection as well. And while generalizing findings is viewed differently, concerns about when, where, and under what circumstances we should generalize or transfer findings of one inquiry should be taken seriously for all sorts of data. For example, it may be just as difficult to generalize a point estimate from quantitative data analysis as it is to transfer a promising practice in enhancing the use of performance

measures derived through case studies. Humility and the provision of contextual information are necessary to bolster claims about the applicability and transferability of any research results.

A particularly important contribution of our consolidated guidelines is to bring in useful lessons from qualitative research, and capture the necessary reporting requirements when incorporating qualitative strands in mixed methods inquiry. We view the consolidated guidelines as a first step to better integrate qualitative research and reporting standards into mixed methods practice. We hope that the resource can help guide public policy and public administration scholars to more intentionally employ and report on their utilization of both the qualitative and quantitative strands in their research.

## CONCLUSION

Mixed methods research is on the rise in public policy and public administration. The growth in using mixed methods, however, is not routinely associated with a corresponding acceptance and effective integration of qualitative methods with the quantitative methods. In our analysis of mixed methods studies in public policy and public administration, we found a lack of growth in qualitative-dominant mixed methods studies, while the number of quantitative-dominant and equal status studies continues to increase. Our analysis of mixed methods research found that references to methodological literatures are scarce. Studies often lack a discussion of the authors' epistemology, transparency regarding methodological decisions, and/or justification of methodological decisions. Understanding key planning and methodological reporting elements for both qualitative and quantitative research strands are crucial for producing credible, trustworthy, and compelling findings in mixed methods studies.

Through our review, we found positive examples from public policy and public administration research that succinctly and clearly justify methods, and provide a reason for employing multiple methods. However, our analysis suggests that researchers are not taking full advantage of the benefits of truly integrating methods and insights. More efforts are needed to reap the benefits of qualitative methods, to incorporate qualitative strands as respected equal partners in mixed methods research, and to improve the conduct and reporting of mixed methods studies.

Drawing upon analyses, we developed seven recommendations for leveraging qualitative methods to strengthen mixed methods studies: (1) address "how" questions in the qualitative strand to explore causal mechanisms; (2) privilege participant experiences and perspectives to provide a more complete picture; (3) increase transferability by elucidating the characteristics of the study environment that are necessary for or likely to influence study findings; (4) add nuance to findings in many ways, including fleshing out transparency

and accountability processes, and explaining the relationships involved in networks, contracting and service provision; (5) enhance measurement, including by developing survey questions and fleshing out program theory; (6) improve the accuracy and credibility of results, such as through triangulating findings from the quantitative strand; and (7) unravel inconsistencies, clarifying surface contradictions and/or analyzing deeper inconsistencies.

While no existing reference provides a combined list of methodological considerations for both qualitative and quantitative mixed methods strands, we have provided a first step towards the development of such guidance here. We believe our suggestions for deliberate design and reporting mixed methods research will contribute to raising the standard for all mixed methods research in public policy and public administration.

## ENDNOTES

- <sup>1</sup> The Journal Citation Report is a feature of *InCites* that aggregates citation data from across journals, conference proceedings, and publishers around the world and allows users to compare data across journals. Public Administration Abstracts is a curated collection of the most relevant journals to public administration research.
- <sup>2</sup> It is also possible to argue that analysis of the equal status articles may provide useful guidance, however, that is beyond the scope of this study, and remains for future research.

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