



Mixed methods research in accounting

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Abstract

Purpose – The purpose of this paper is to set the scene for this special issue by synthesising the vast array of literature to examine what constitutes mixed methods research, and the associated strengths and risks attributed to this approach.

Design/methodology/approach – This paper takes the form of a literature review. The authors draw on extensive methods research from a diverse range of social science disciplines to identify and explore key definitions, opportunities and risks in mixed methods studies. They review a number of accounting studies that adopt mixed methods research approaches. This allows the authors to analyse variance in how mixed methods research is conceptualised across these studies and evaluate the perceived strengths and limitations of specific mixed methods design choices.

Findings – The authors identify a range of opportunities and challenges in the conduct of mixed methods research and illustrate these by reference to both published studies and the other contributions to this special issue.

Originality/value – With the exception of Modell's work, there is sparse discussion of the application and potential of mixed methods research in the extant accounting literature.

Keywords Research methods, Accounting

Paper type Literature review

1. Introduction

Mixed methods research has a long history in the social sciences (Creswell, 2009; Jick, 1979; Johnson *et al.*, 2007). The management literature abounds with studies that adopt a mixed methods approach and methodological papers that examine the properties of this research strategy (Greene, 2008; Tashakkori and Creswell, 2007b). Despite the development of mixed methods research designs in the social sciences over several decades and the recent growth in the popularity of mixed methods research as a “third methodology” (Hall and Howard, 2008) or “third paradigm” (Denscombe, 2008), there is still little evidence or sustained discussion of mixed methods research in the accounting literature (see Modell, 2005, 2009, 2010, for an exception). This is particularly notable in the management accounting context, given the wide acceptance that qualitative methods already enjoy in this arena. Several calls in the literature acknowledge this potential to complement positivist/functionalist paradigms with aspects of case-based research (Ferreira and Merchant, 1992; Ittner and Larcker, 2001; Modell, 2005; Shields, 1997). Thus, in this paper, we review literature on mixed methods research originating



from diverse social sciences and consider a range of definitions, opportunities and risks associated with mixed methods research in accounting in general and management accounting in particular.

“Mixed methods research” recently has gained popular acceptance as the term to define research designs that combine qualitative and quantitative methods in a single study (Johnson *et al.*, 2007); but this method is variously referred to throughout the literature as convergent methodology, multiple/multi-method/multitrait research, convergent validation, between or across method triangulation, multiple operationalism, blended research, integrative research, and mixed research (Denzin, 1978; Jick, 1979; Johnson *et al.*, 2007). An extensive literature considers the nature of mixed methods research, how the use of mixed methods within a single study can both extend and strengthen potential findings, and the potential pitfalls of integrating methods (Bryman, 2007; Johnson *et al.*, 2007; Modell, 2005; Teddlie and Tashakkori, 2009; Yin, 2006).

In this paper, we set the scene for this special issue by synthesising the vast array of literature to examine what constitutes mixed methods research, and the associated strengths and risks attributed to this approach. We illustrate the application of mixed methods with three published management accounting studies (Davila and Foster, 2007; Modell and Lee, 2001; Wouters and Wilderom, 2008) and one financial accounting study (Graham *et al.*, 2005). We examine these published studies for what they tell us about the strengths of mixed method designs as well as the tensions and trade-offs in execution. Similar themes of relative strengths, tensions and trade-offs are evident in the other papers in this special issue that reflect on applications of mixed methods design (see the papers by Malina, Nørreklit and Selto, Murphy and Maguire, and De Silva).

At the outset, we draw a “soft” distinction between mixed methods and mixed methodologies. To the extent that mixed methods rely on the joint exploitation of qualitative and quantitative methods, this can occur within either a positivist/functionalist or interpretive paradigm. However, we refer to this as a soft distinction because the definitions we draw on frequently refer to elements of mixing methods and methodologies. Furthermore, many scholars argue that moving between quantitative and qualitative methods by definition implies a methodological shift, whether acknowledged or not. While recognising that the boundary is “fuzzy”, we initially eschew questions of mixing methodologies to focus on issues associated with the more straightforward application of mixed methods, largely from a positivist/functionalist perspective. We then return to the question of mixing methodologies. In particular, we pay attention to ongoing debates regarding the compatibility of quantitative and qualitative methodologies within a single study and the perceived possibilities for successfully combining methods with such distinct epistemological and ontological positions (see also De Loo and Lowe in this special issue for elaborated discussion on the contention of mixing methodologies).

It is not our intention in the paper to prescribe how to perform the mixing of methods (see instead Creswell and Plano-Clark, 2007, or Teddlie and Tashakkori, 2009). Nor do we introduce or discuss strategies to assess the quality (reliability and validity) of mixed methods studies (see instead Dellinger and Leech, 2007, and Kihn and Ihantola in this issue).

Section 2 defines and introduces mixed methods research. We then turn to the contentious question of mixing methodologies (Section 3). Sections 4 and 5 explore the question of why researchers mix methods and the risks in doing so, respectively. In Section 6, we draw on four published examples of mixed methods research

in the accounting literature. We then conclude the paper by drawing together the literature on mixed methods and the “reality” observed in the examples discussed. Ultimately, we consider the future potential for mixed methods research in accounting.

2. What is mixed methods research?

Mixed methods research is now widely accepted across diverse social science disciplines as a separate research strategy with its own distinct worldview, vocabulary and techniques (Denscombe, 2008; Hall and Howard, 2008; Johnson *et al.*, 2007; Tashakkori and Creswell, 2007b; Teddlie and Tashakkori, 2003). Despite this, as evidenced by the responses of 19 leaders in the field solicited by Johnson *et al.* (2007), there is significant variation in the definition of mixed methods research. However, the majority of the definitions provided, and popular opinion in the discipline at large, seem to suggest that mixed methods designs include both a quantitative and qualitative component. Where inconsistencies and disagreements seem to originate is in the consideration of how these quantitative and qualitative components are related, and whether these components reflect quantitative and qualitative data collection and analysis techniques (i.e. methods) and/or quantitative and qualitative approaches to research (i.e. methodologies) (Denscombe, 2008; Tashakkori and Creswell, 2007b). Further points of contention relate to the focus placed on the quantitative and qualitative components of the study (the weighting decision), at what stages of the study quantitative and qualitative components are mixed (the mixing decision) and in which order quantitative and qualitative methods are used (the timing decision) (Creswell and Plano-Clark, 2007; Hall and Howard, 2008; Jick, 1979). As Johnson *et al.* (2007) note, it is perhaps not surprising that a fixed definition of mixed methods research remains elusive as definitions can and usually will continue to evolve over time as a method grows. However, this looseness in definition is not necessarily fatal (Creswell and Tashakkori, 2007) as “having the term not cast in stone is intellectually useful and allows for reshaping understandings” (Guba, 1990, p. 17).

In the social sciences, the concept of methods “triangulation” dates to the work of Campbell and Fiske (1959) who propose the use of more than one research method as part of a validation strategy to ensure the explained variance is the result of the underlying phenomenon and not an artefact of the research method adopted. Subsequent researchers elaborate on the nature of methods triangulation, distinguishing within-methods triangulation (the use of multiple quantitative or multiple qualitative elements) from between-methods (the use of both quantitative and qualitative elements)[1] and delineating method triangulation from data, investigator and theory triangulation[2] (Webb *et al.*, 1966). Studies have been considered mixed on the basis of: addressing two types of research questions; the manner in which research questions are developed; adopting two types of sampling procedures, data-collection techniques, types of data or data analysis; and presenting two types of conclusions (Tashakkori and Creswell, 2007b).

In this section, we analyse the concept of what is seen to constitute mixed methods research from the platform of a broad definition provided by Tashakkori and Creswell (2007b, p. 4) wherein mixed methods research is considered to be:

[...]research in which the investigator collects and analyses data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study or program of inquiry.

We select this definition as it makes prominent what we consider to be two essential aspects of a study that combines quantitative and qualitative elements:

- (1) the notion of “integration” between quantitative and qualitative elements[3]; and
- (2) the importance of developing a “single study or program of inquiry”.

Further, rather than considering mixed methods in a narrow or “pure” sense, this definition is inclusive in allowing for the possibility of mixing encompassing both method and methodology, and permitting variation in the weighting, mixing and timing decisions of researchers (Johnson *et al.*, 2007).

Integration of methods

The attribute of integration between qualitative and quantitative elements of a mixed method study is evident primarily in the way interdependencies between the multiple strands of the study are embedded in the research design, and managed in the analysis. Complementary or sequenced quantitative and qualitative components of a study that do not involve reciprocal interdependencies between these research strands may not be considered to be mixed methods (Bazeley, 2009; Bryman, 2007). Integration “might occur through iteration, blending, nesting or embedding” (Bazeley, 2009, p. 204). Examples of these forms of integration across the research process provided by Bazeley (2009, p. 205) include: using the results of one analysis employed to approach the analysis of another form of data; the synthesis of data from a variety of sources for joint interpretation; the comparison of coded qualitative data across groups defined by categorical or scaled variables; the conversion of qualitative to quantitative coding to allow for descriptive, inferential or exploratory statistical analyses; the creation of “blended” variables to facilitate further analysis; flexible, iterative analyses involving multiple, sequenced phases where the conduct of each phase arises out of or draws on the analysis of the preceding phase.

Yin (2006) notes that the integration of quantitative and qualitative strands of mixed methods studies can occur in many ways. The articulation of research questions, the identification of samples and units of analysis, the data collection methods used and the analytic strategies employed are all implicated in the integrative quality of mixed method design. Yin (2006) proposes that the more the quantitative and qualitative elements are integrated into research procedures, the stronger the “mix” of methods that results. Creswell and Tashakkori (2007), further note that “strong mixed methods” studies integrate the quantitative and qualitative results of the study into coherent conclusions or inferences. Bazeley (2009) considers the integration of quantitative and qualitative results the minimum requirement for a study to qualify as mixed methods in design, and observes that blending data and meshing analyses is far less frequent in practice. A critical foundation for integration may be the development of an overarching mixed methods research question (Mertens, 2007; Tashakkori and Creswell, 2007a). Mixed methods studies that struggle to integrate findings are usually those that develop either qualitative or quantitative research questions and then use mixed methods solely for data collection. The inference drawn from the study by Mertens (2007) is that developing an overarching mixed methods question is a design necessity in mixed methods studies if mixed methods researchers are to present integrated and coherent research results.

Single program of inquiry

Importantly, mixed methods designs must also ensure that the integrity of the single study focus is maintained and the study does not inadvertently devolve into two or more parallel studies (Yin, 2006). While there is potential to integrate qualitative and quantitative findings either within or across studies, we restrict our definition of mixed method studies to those that integrate qualitative and quantitative findings within a single study. We do this for several reasons. First, the importance of a mixed methods research question and research design as an antecedent to effective integration of findings is premised on the notion that integration is occurring in a single study (Mertens, 2007; Tashakkori and Creswell, 2007a). Second, authors are really only able to assess the extent to which two sets of data converge, contradict or extend one another with a clear understanding of the construct definitions and the domain of observables that govern the collection of both datasets. This is generally only evident in a single study. It is possible that multiple sequential studies by the same author may go some way to achieving the required consistency in definitions to integrate data across studies. Malina *et al.* (in this issue) present such a possibility. It is notable, however, that while their reflections refer to sequential studies, they rely on repeat analysis of a single dataset to produce the primary mixed methods contribution that they describe. Multiple studies by different authors are much less likely to satisfy the need for consistency in definitions and domain of observables. In such cases, the integration of findings relies on meta-analyses that address the added complications of variability caused by time, study design, sampling and definitional differences (Johnson and Onwuegbuzie, 2004; Yin, 2006).

In summary, mixed methods research designs are characterized by the use of both qualitative and quantitative methods within a single study, with a focus on the integration of these multiple strands in both study design and data analysis. While such a definition emphasises the mixing of methods, it implicitly embraces the potential to mix methodologies, as does the literature from which we draw our definition. However, the question of mixing methodologies emerges as somewhat more contentious than the mixing of methods. In the next section, we consider competing views on the viability or authenticity of mixed methodologies.

3. Mixing methodologies

A comprehensive review of the mixed methods literature shows that there are two dominant views about the mixing of methodologies: the incompatibility thesis and the pragmatists' view. Researchers who articulate an incompatibility thesis about mixing methodologies argue that qualitative and quantitative methodologies draw from different epistemological assumptions and have different research cultures that work against the convergence of research methodologies (Brannen, 2005; Sale *et al.*, 2002; Scott and Briggs, 2009). This argument is premised on the idea that qualitative research methodology is based on inductive logic of enquiry, which is considered to be diametrically opposed to the hypothetic-deductive logic that underpins quantitative methodology. Accordingly, these two methodologies speak to different ways of knowing reality and thus have different implications for deriving research questions and require different research processes, suggesting that any attempt to mix them will create tension and lead to difficulties in interpreting results. For instance, the hypothetic-deductive logic requires more structured protocols, representativeness of a sample

and, by implication, the generalisability of results requires a much larger sample. In contrast, inductive logic does not require large, representative samples. For Sale *et al.* (2002), these two different methodological approaches are incommensurate and should therefore not be mixed in any mixed methods studies.

Some researchers extend the incompatibility thesis to argue that mixing methodologies can create argumentative incoherence by attempting to “blend paradigms with incommensurable epistemic and ontological foundations” (Scott and Briggs, 2009, p. 230; Johnson and Onwuegbuzie, 2004; Sale *et al.*, 2002). They contend that qualitative and quantitative methodologies draw on incompatible paradigmatic assumptions that work against any attempt at mixing the two methodologies. Qualitative methodologies are said to derive from interpretivism and constructivism where it is generally assumed that reality has no existence prior to the activity of investigation and where the focus is on shared meanings rather than causal relations (Sale *et al.*, 2002). In contrast, quantitative methodology is based on positivism and its assumption of an objective reality that can be studied without researcher influence (Sale *et al.*, 2002). Given these different paradigmatic assumptions, Sale *et al.* (2002) argue that qualitative and quantitative methodologies do not study the same phenomenon and should not therefore be mixed in any way. They argue further that even when the same phenomenon is explored through these two methodologies, the definitions of these phenomena will differ and the approach to knowing the phenomena will also differ, thus making it impractical to mix the two methodologies.

The conclusion drawn from the incompatibility thesis is that the mixing of methodologies in mixed methods research is not a reasonable proposition and should therefore be discouraged. Incompatibility theorists state, however, that the fact that the two methodologies are incommensurate does not mean that researchers should abandon mixed methods research. Mixed methods can be used in a single study if it is done for complementary purposes (Sale *et al.*, 2002).

In sharp contrast to the incompatibility thesis, pragmatists share the view that mixing methodologies is a sensible thing to do in mixed methods research (Brannen, 2005). In building an argument for mixing methodologies, pragmatists criticise the incompatibility thesis for emphasising differences between qualitative and quantitative methodologies and ignoring opportunities for convergence (Brannen, 2005; Bryman, 2007; Hammersley, 1992). The pragmatists contend that it will be difficult to reduce mixed methods research to just methods since one cannot separate methods from the larger research process (Creswell and Tashakkori, 2007). Research methods and design are shaped largely by the research questions under investigation and the research questions derive from the research purpose (Tashakkori and Creswell, 2007a). Given that research purposes are based on epistemological and methodological assumptions, it stands to reason that a meaningful mixed methods study should draw from both qualitative and quantitative research methodologies (Brannen, 2005; Tashakkori and Creswell, 2007a).

In stressing the relevance of mixing methodologies in mixed methods research, Brannen (2005) states that in analysing mixed methods data, researchers reflect on the different kinds of truth claims underpinning the data and also take into account the fact that the different types of data being analysed are constituted by the different methodological assumptions and methods that elicit them. This implies that it will be a senseless exercise to attempt to produce a unitary account from data collected from

different methods without any attempt to combine the methodological assumptions that underlie the data collected. Given that one cannot separate methods from the broader research process, the pragmatists argue that mixed methods research should focus on the entire research process by tying methods to an integrated set of philosophical and methodological assumptions (Creswell and Tashakkori, 2007; Tashakkori and Teddlie, 1998). This, according to Scott and Briggs (2009), is a sensible approach to unifying data and presenting an integrated and coherent set of results.

In an empirical study of mixed methods researchers, Bryman (2007) found that “pragmatic” researchers seem not to dwell on epistemological and ontological positions but rather focus on ways of combining qualitative and quantitative methodologies in the overall research process. Scott and Briggs (2009, p. 231) also argue that in practice, mixed method researchers are guided by the rationale for their research, rather than by epistemology and conclude “methodology is in practice commonly agnostic to epistemology”. The implication here is the rejection of the incompatibility thesis in practice as researchers seek convergence in methodology and allow such convergence to guide the research process.

In the prior section, integration of research findings was described as fundamental to the execution of mixed methods. Bryman (2007) contends that the lack of integration in mixed methodology studies is not so much a consequence of a clash in epistemological and ontological positions but rather is due to the practical difficulty of tying the two methodologies together. This practical difficulty is partly because of concerns about establishing the validity of mixed methods research. Together, these validation frameworks should facilitate the integration of qualitative and quantitative methodologies and theories in ways that bypass epistemological and ontological positions.

For the remainder of this paper, we take a pragmatic view in which we treat mixed methods as potentially but not necessarily including mixed methodology studies. In the next section, we examine a range of rationales for mixing methods and/or methodologies.

4. Why mix methods?

The rationale for pursuing mixed methods research designs rests largely on the premise that the weaknesses in each individual method will be compensated by the counter-balancing strengths of the other (Jick, 1979). “Methods should be mixed in a way that has complementary strengths and nonoverlapping weaknesses” (Johnson and Turner, 2003, p. 299). The advantages to mixed methods research rest on the development of a research strategy that is effective in exploiting the advantages of quantitative and qualitative methods, while neutralising the “costs” or “risks” associated with each method (Jick, 1979; Modell, 2005). While the literature identifies a wealth of advantages potentially applicable to mixed methods designs, the benefits of complementary research strategies within a single study can generally be categorised as allowing researchers to:

- extend findings beyond those observable using a single method;
- identify empirical contradictions that might otherwise be missed (Denzin, 1978); and
- observe convergence in findings from different strands of the research, thereby building confidence in the research (Denzin, 1978).

Central amongst the rationales advanced in support of the use of mixed methods research is the enhanced credibility and validity of research findings and the reduced potential that research results reflect a unique method artefact (Denzin, 1978; Jick, 1979; Modell, 2005). Research enhancement through mixed methods is constructed in a range of ways. The notion of extension implies that mixed methods contribute “more” than can be achieved by the application of individual methods, potentially by addressing different aspects of a research question. Just as methods are tailored to research questions, different parts of research questions within a study may require the application of different methods (Yin, 2006). Examples would be studies that address both “what” and “why” questions or “process” and “outcome” questions. In this issue, the Murphy and Maguire study illustrates the application of complementary methods to assess “outcome” and “stakeholder perceptions” as separate dimensions of an overarching research question. In these cases, appropriate methods are combined to enable exploration of salient complementary questions. The aim is not triangulation or the use of mixed methods to cross-validate results. In such cases, the research findings are the result of the combined application of the complementary methods required to answer the different elements of the question.

The notions of convergence and contradiction relate more to the application of complementary research strategies to the same research question. Yin (2006) refers to counterpart analysis in which a combination of methods can be used to assess convergence in both the measurement of constructs and the relationships between constructs. Mixed methods research provides better and stronger inferences through corroboration (Modell, 2005). Two of the functions of mixed methods research described by Greene (2008) are concerned with the strengthening of inferences: triangulation and complementarity. The data are richer and thicker (Jick, 1979). Assessing convergence and strengthening inferences can of course, also expose contradictions. The quantitative and qualitative elements of mixed methods studies provide an opportunity for researchers to incorporate divergent views that can result in a deeper understanding of the research problem. Divergent findings are valuable in that they can promote the reexamination of conceptual frameworks and the assumptions underlying the strands of the research (Denzin, 1978; Modell, 2005) and lead to novel future lines of enquiry (Jick, 1979). In the extant management accounting literature mixed method designs that focus on establishing convergence and/or contradiction between findings commonly incorporate surveys and interviews or focus groups addressing a similar set of questions to determine whether consistent themes emerge in both quantitative and qualitative data (Modell, 2005).

While most writers in this area deliberately avoid granting any privilege to specific methods in a mixed method setting, arguing that it is the multiplicity of methods in itself that generates value, Jick (1979) argues persuasively that the real contribution of mixed method designs to triangulation comes from the contribution of qualitative data. He suggests that it is the closeness of the qualitative researcher to the research context which illuminates the research problems. “Qualitative data are used as the critical counterpoint to quantitative methods” (Jick, 1979, p. 609). This view attaches superior insight to qualitative data.

5. Risks in mixing methods

One of the primary risks in mixing methods is the failure to adequately integrate the design, execution, analysis and interpretation of the quantitative and qualitative strands

of research. Integration is a distinguishing feature of mixed method studies and a critical quality in defining the contribution from such studies (Yin, 2006). The need for integration applies regardless of the purpose of mixing methods – convergence, contradiction or extension. The full contribution of studies in any of these domains really depends on the effort researchers devote to the challenging task of integration of methods. Lack of integration pushes the problem back onto readers, leaving them in a similar position to that gained from sequential studies by different authors using different methods.

Teddlie and Tashakkori (2009, p. 286) contend that most importantly, researchers must devote attention to ensuring the integration of quantitative and qualitative research findings in drawing inferences in mixed methods studies. While numerous textbooks provide copious advice as to “how” to integrate the design, execution and analysis phases of mixed methods studies (Creswell and Plano-Clark, 2007; Teddlie and Tashakkori, 2009), much less guidance is available regarding the integration of research findings. Indeed, Bryman (2007) questions whether we have yet actually determined what it means to integrate findings in mixed method research. This may be particularly problematic in accounting where there are few examples in the literature that model the integration of results in mixed methods studies. Effective integration of results has been identified as less common than it should be (Greene, 2008) and even rare (Niglas, 2004). Many authors highlight use of a mixed methods design but give much greater attention to one method rather than the other, or present their findings in parallel, such that there is little if any integration (Bryman, 2007).

Why is integration of results so problematic? The potential to integrate findings may be partially dependent on starting with an integrated conceptual study design rather than a parallel design. Where a study adopts mixed methods to explore complementary questions using different methods, are the complementary questions (e.g. “what” and “why”) linked at a conceptual level? Where a study adopts mixed methods to explore convergence and contradictions, is the potential contribution from convergent and contradictory insights clearly identified and motivated at the study design level? Conceptual integration seems important in establishing a coherent foundation from which to exploit multiple perspectives.

Qualitative and quantitative data do not blend easily. There are always caveats relating to differences in the domain of observables, interpretations of constructs and whether indeed the data speak to a common point. There are potential difficulties in establishing the validity of mixed methods research (Bryman, 2007). Some researchers, however, have provided validity criteria and validation frameworks that should overcome this problem. Dellinger and Leech (2007), for example, have integrated validity criteria from qualitative and quantitative methodologies to develop a validation framework that seeks to unify thinking about validity in mixed methods research. Modell (2005) also offers validity criteria for assessing external, internal and construct validity in mixed methods studies. Later in this special issue, Kihn and Ihantola examine the contributions of two other validation frameworks for mixed methods research proposed by Teddlie and Tashakkori (2003) and Onwuegbuzie and Johnson (2006). Nonetheless, paradigm debates as to whether, methodologically, it is possible to integrate quantitative and qualitative research may continue to make researchers nervous about integrating the various strands of their research (Bazeley, 2009).

It is also easier to integrate convergent or complementary findings than it is to integrate conflicting findings. Contradictions leave researchers with a dilemma. The orientations and preferences of researchers may systematically privilege either qualitative or quantitative data, thus leading researchers to focus on competition between methods to resolve contradictions rather than exploiting the contradictions themselves as a product of integration.

Beyond the key issue of integration of quantitative and qualitative research findings, there are a number of other potential risks associated with mixed methods. Given scarcity of research time and funding, all research carries an opportunity cost. Splitting research effort across two methods in the one study may result in serious compromises in the application of either one or both methods, potentially leading to perceptions of two things done badly rather than one thing done well. A particular risk in thinly spread effort is that of superficial fieldwork, or small-scale surveys, compromising the quality of qualitative and quantitative data, respectively.

6. Published examples of mixed method research in the accounting literature

In this section, we provide examples of the way mixed methods are used in accounting research. We did not conduct an exhaustive search of mixed methods research in accounting. First, the variety of potential terms used within studies to describe methods precludes a reliable and exhaustive search. Such a search could involve each combination of individual methods (i.e. each quantitative method – experimental, archival and survey – in combination with terms such as “qualitative”, “field study” and “case study”) in conjunction with “accounting” or its sub-disciplines. Such searches produce tens of thousands of entries. At a minimum, they include all studies that use both quantitative and qualitative data; such as extended responses within surveys, and manipulation check questionnaires in experiments. In contrast, searches of “accounting” along with “mixed methods” or “multiple methods” produces virtually no result. We deemed an exhaustive search impossible, and decided instead to provide examples from the literature of the way mixed methods tend to be used in accounting. The vast majority of examples of mixed methods appear to be the combination of surveys and interviews (Modell, 2005).

We include here three examples of the application of mixed methods, and one example of the application of mixed methodologies. These specific examples are not selected as the most notable or highest quality examples of mixed methods/methodologies in the literature. We do not set out to make such a judgment. Rather, the examples selected exemplify both the value of mixing methods and also some of the challenges in doing so.

Davila and Foster (2007)

This paper examines the evolution of management control systems in early stage startup companies. The authors draw on publicly available data as well as a survey and semi-structured interviews. Publicly available data are used to triangulate or validate survey responses where possible (financial and funding information). Survey data are used to capture the dynamic evolution of management control systems. Semi-structured interviews are used to clarify and triangulate survey responses as well as to provide a richer description of context in which to understand why systems were adopted. Thus, the mixed data sources can be described as used

for both triangulation of common elements (convergence) as well as discovery of complementary elements (extension).

In reality, in this study, there is little evidence of the interview data in the paper. There are a few illustrative quotations relegated to a half-page in an appendix. These quotes are used to support the choice of variables used in the regression equation examining the rate of adoption of management control systems. The interview data thus take a secondary role to the survey data and there is little evidence of effective integration of quantitative and qualitative findings. There is no evidence of the systematic use of interview data to complement, clarify or triangulate the survey data. The publicly available data also play a minor role in validating specific elements of the survey data. Thus, the study interprets survey data with minimal input from other data sources. While the study is introduced as a “multi-method, multi-case field research design” there is little evidence of this design in the way the study is reported. Little would be lost to the paper without the qualitative data. Nonetheless, we acknowledge that the paper as published reflects the resolution of a range of tensions relating to content and focus, and our conclusions may well understate the value of the qualitative data to the researchers in framing ideas, lines of inquiry, potential mental models of relationships in the data and perhaps fueling a broader research program.

This study also potentially exemplifies a risk in mixed methods research, which we have not highlighted above – the risk that certain data and findings will become privileged through journal editorial and review preferences or due to restrictions on the length of published papers. This is, however, conjecture as we have no particular insights into the editorial or review process for this paper.

Wouters and Wilderom (2008)

This study examines perceptions of the enabling quality of performance measurement systems, and tries to isolate the causes of performance measurement systems being perceived as enabling. In contrast to the Davila and Foster (2007) study described above, the Wouters and Wilderom (2008) study represents a fully integrated mixed methods design with constant cross-referencing from qualitative interview to quantitative survey data. This study represents well the opportunities to use mixed methods to approach different elements of a research question. Thus, the multiple data sources are used more to complement one another than to triangulate or validate.

Wouters and Wilderom (2008) operationalise their dependent variable – the perceived enabling quality of performance measurement systems – through several items on a panel survey executed within their case study organisation. Of their three independent variables, they seek to operationalise one through the panel survey (professionalism or orientation to learning) and the others (experimentation and experience-based design) through their interviews. While not framed by the authors this way, they in effect use the survey to capture personal perspectives and the interviews (along with document analysis and other qualitative data sources) to capture the performance measurement system development process. While it might seem that this focus could be reversed, such that the process data are collected by survey and the perception data collected through interviews, the design is in fact robust and well suited to the research questions. In this case, it is important to obtain a cross-section of “quality” perceptions (rendering the survey approach useful) and to obtain a reliable description of a singular process (rendering interviews and document analysis useful).

Interestingly, this approach also offered the side benefit of separating the qualitative evaluation of the system (the dependent variable) from the identification of the determinants of quality (two of the three independent variables) thus minimising “common response bias”. The authors do not highlight this advantage themselves, but their study does highlight the opportunity to use mixed methods to reduce such bias through the use of complementary data sources.

Graham et al. (2005)

This is a seminal paper in the financial accounting literature that uses a survey along with interviews with chief financial officers to identify factors that drive reported earnings and disclosure decisions. The study is designed to articulate clearly with the wealth of archival and analytical studies in the financial accounting literature addressing these questions. While the study does not extend to actually drawing on archival data as well as the survey and interview data, it does integrate the findings so clearly with extant research using archival data and analytical methods the study can almost be viewed as a triangulation of survey, interview and archival data sources.

The rationale for the survey and interview design in this study is to gain both breadth and depth of insights into the decisions that lie behind the archival evidence of earnings management and disclosure choices. The authors seek to gain better insight into the complex interplay among a range of incentives chief executive officers face in both the discretionary application of generally accepted accounting principles to determine the levels of earnings to report, and also in more general disclosure choices. The authors also seek to build more robust theory relating to the causal relationships between context and the earnings and disclosure-related decisions studied. The survey and interview data are clearly used to triangulate or validate findings (convergence) with extensive integration of the two data sources throughout the paper. The question of integration with archival data remains somewhat more contentious as these data are not collected within the single study and are thus not part of the mixed methods design. However, financial accountants have the advantage of common archival data sources adopting constant definitions, which are to a large extent independent of the researchers themselves. Thus, it is easier for the survey and interview data to speak to these common “stable” data sources.

Most notable about this paper as a mixed methods contribution is that it is in the financial accounting sub-discipline. There is little qualitative work in financial accounting, so it is potentially lagging management accounting in both the development and acceptance of mixed methods research strategies. Graham *et al.* (2005) do, however, demonstrate very well how much is to be gained by supplementing traditional archival data sources with forays into both surveys and qualitative data collection in financial accounting.

Modell and Lee (2001)

Modell and Lee (2001) is referred to by Modell (2010, p. 124) as a mixed methodology paper:

Whilst our initial hypothesis and the design of the survey instrument were primarily informed by functionalist approaches (e.g. agency theory), we retained some openness to alternative theoretical perspectives and combined the survey with semi-structured interviews.

Modell and Lee (2001) examine the link between decentralization and the application of the controllability principle in a public sector setting. In developing the theoretical

framework for their study, Modell and Lee (2001) draw on both functionalist literature relating to the application of the controllability principle (Bushman *et al.*, 1995; Merchant, 1989), as well as neo-institutional sociology to capture the competing forces in defining the link between decentralization and controllability in practice. On the one hand, functionalist arguments would support a positive association. On the other hand, the expected positive association is expected to be altered or “breached” by the presence of institutional pressures which either reduce local controllability, or lead to the need to loosely couple decentralization and controllability. Thus, rather than appearing to be initially informed by a functionalist perspective (Modell, 2010), the paper is framed to capture the potential tension between functionalist and interpretive factors influencing the relationships under study.

Given the *ex ante* framing of this tension, the functionalist hypothesis in Modell and Lee (2001) appears to be something of a “straw man”. It is set up only to determine whether there is a statistically observable relationship between decentralization and the treatment of non-controllable factors through the budgetary control process. The authors find only a weak positive statistical relationship. They then establish through the analysis of qualitative data the more subtle, nuanced relationship between controllability and decentralization influenced heavily by institutional and political context.

In appearing to create a “straw man” functionalist hypothesis, this paper demonstrates the challenges of mixing methodologies. The authors cannot suspend their critical and interpretive understanding of context so it is embedded in their theorisation of the problem. Knowing that context, we, as readers, are unable to suspend disbelief enough to subscribe to the functional hypothesis in the first place. Equally, if the initial framing of this study was completely functionalist, could the authors credibly argue for a framing of unhypothesised findings as being consistent with a previously untheorised neo-institutional sociological explanation? As readers, we would most likely want to see the acknowledgement of that possibility in *ex ante* theorisation of the problem. Thus, this paper demonstrates well the challenges in mixing methodologies. However, if we eschew the methodology question, we can reconceptualise the design of this paper as a strong illustration of mixed methods. Survey and interview data are integrated in analysis to provide alternative and complementary perspectives on a single question within a single study.

7. Conclusions

Our modest objective in this paper was to canvass the literature on mixed methods research with a view to providing some broader context to the papers appearing in this special issue. As such, we spent considerable time discussing the nuances in the definition of mixed methods. Consistent with the preponderance of available literature, we adopt a broad perspective of mixed methods researching noting two distinguishing characteristics of this type of research; namely (1) the importance of carefully integrating the quantitative and qualitative elements of the mixed strategy within (2) a single program of study. Our definition also recognises the potential for the mixing of methodologies in this research strategy. The working definitions of mixed methods adopted by authors throughout this special issue are consistent with ours. In particular, the contribution of De Loo and Lowe in this issue elaborates our discussion of mixing methodologies and considers extensively the possibilities and practicalities of accomplishing this.

While various benefits to the adoption of mixed methods research are proposed the achievement of these ends is reliant on the careful and considered design, execution and communication of studies to navigate a range of potential pitfalls. We present the key rationales and risks in mixing research strands. These themes are elaborated in the three papers in this issue that reflect on experiences with mixed methods strategies (Malina *et al.*, Murphy and Maguire, and De Silva).

Our review of four studies published recently in the accounting literature allows us to illustrate the themes presented in this paper. In our literature search, we noted a paucity of exemplars of mixed methods studies in the accounting domain. Furthermore, the examples that do exist are largely limited to the combination of survey and interview data. While a significant number of studies report adopting a mixed or multiple methods approach, on closer examination these studies neither evidence the integration of methods, nor maintain the integrity of a single program of inquiry, which are the hallmarks of mixed methods research. Instead, these studies reflect what Jick (1979, p. 603) refers to as “primitive forms“ of mixed methods research, that are typically “parenthetical, even somewhat patronizing” in their use of qualitative data to support statistical results.

We see significant potential for the accounting literature to adopt mixed methods research strategies. Given the acknowledged strengths of mixed methods designs to enhance both theory testing and theory building through extension, convergence and contradiction of findings, the lack of use of such methods suggests missed opportunities. There are potentially several reasons for this under-exploitation of mixed methods. Both our discussion in Section 5 above and the published studies, we review point to several of the risks researchers face in undertaking mixed methods studies. In addition to these risks, there remains further uncertainty regarding journal editor preferences and the review and publication process. We conjecture that this may have been a factor in the Davila and Foster (2007) paper. Malina *et al.* (in this special issue) also point to the difficulty of meeting the demands of reviewers with divergent quantitative and qualitative preferences. These effects are likely to be exacerbated where researchers attempt to mix methodologies. When coupled with the added time and cost of research design and execution, this renders a mixed method approach a particularly risky research strategy (Jick, 1979). Potentially, these factors lead to researchers seeking to publish the quantitative and qualitative strands of their research study independently. Further inhibiting the broader diffusion of mixed methods research designs is the current lack of accepted nomenclature and the absence of an established framework for assessing the quality of such research. The absence of general agreement as to what constitutes mixed methods research, the scarcity of examples in the literature, and the unresolved question as to whether the issue is one of mixing methodologies or methods, create a situation of uncertainty for researchers. Kihn and Ihantola (in this special issue) take up the issue of reviewing and integrating a range of standards proposed to assess the validity and reliability of mixed methods. Such analysis is an important first step in the acceptance of a comprehensive framework by which to judge the rigour of mixed methods research. Protocols to establish the quality of mixed methods strategies both guide researchers in the design and execution of studies and promote the confidence of readers.

In spite of these challenges, we hope that this special issue and the examples that it provides of mixed methods potential help to stimulate interest in the more extensive adoption of mixed methods in the accounting literature.

Notes

1. Jick (1979) provides examples of within-(quantitative) methods triangulation that include the use of multiple scales of the same construct on a survey and within-(qualitative) methods triangulation that include multiple comparison groups in a case study. Within-methods triangulation is seen to have a less significant effect on promoting convergent and divergent validity as the inherent weaknesses in the underlying research paradigm prevail (Denzin, 1978). Within-methods triangulation is not widely considered to reflect a mixed methods research design and does not meet the working definition of mixed methods research adopted in this paper.
2. Malinaata triangulation involves the use of multiple data sources, investigator triangulation the use of multiple rather than single observers and theoretical triangulation the use of multiple theoretical perspectives to interpret the phenomenon (Denzin, 1978; Jack and Raturi, 2006; Modell, 2005). These forms of triangulation are also not considered to reflect mixed methods research as defined in this paper.
3. Although consistent with Yin (2006), we argue that such integration can be present to varying degrees at different stages of the research process, as influenced by the “mixing decision”.

References

- Bazeley, P. (2009), “Editorial: integrating data analyses in mixed methods research”, *Journal of Mixed Methods Research*, Vol. 3 No. 3, pp. 203-7.
- Brannen, J. (2005), “Mixed methods: the entry of qualitative and quantitative approaches into the research process”, *International Journal of Social Research Methodology*, Vol. 8 No. 3, pp. 176-84.
- Bryman, A. (2007), “Barriers to integrating quantitative and qualitative research”, *Journal of Mixed Methods Research*, Vol. 1 No. 1, pp. 8-22.
- Bushman, R.M., Indjejikan, R.J. and Smith, A. (1995), “Aggregate performance measures in business unit manager compensation: the role of intrafirm interdependencies”, *Journal of Accounting Research*, Vol. 35, pp. 101-28 (supplement).
- Campbell, D.T. and Fiske, D.W. (1959), “Convergent and discriminant validation by the multitrait-multimethod matrix”, *Psychological Bulletin*, Vol. 56, pp. 81-105.
- Creswell, J.W. (2009), “Editorial: mapping the field of mixed methods research”, *Journal of Mixed Methods Research*, Vol. 3 No. 2, pp. 95-108.
- Creswell, J.W. and Plano-Clark, V.L. (2007), *Designing and Conducting Mixed Methods Research*, Sage, Thousand Oaks, CA.
- Creswell, J.W. and Tashakkori, A. (2007), “Editorial: differing perspectives on mixed methods research”, *Journal of Mixed Methods Research*, Vol. 1 No. 4, pp. 303-8.
- Davila, A. and Foster, G. (2007), “Management control systems in early-stage startup companies”, *The Accounting Review*, Vol. 82 No. 4, pp. 907-37.
- Dellinger, A.B. and Leech, N.L. (2007), “Toward a unified validation framework in mixed methods research”, *Journal of Mixed Methods Research*, Vol. 1 No. 4, pp. 309-32.
- Denscombe, M. (2008), “Communities of practice: a research paradigm for the mixed methods approach”, *Journal of Mixed Methods Research*, Vol. 2 No. 3, pp. 270-83.
- Denzin, N.K. (1978), *The Research Act*, McGraw-Hill, New York, NY.
- Ferreira, L.D. and Merchant, K.A. (1992), “Field research in management accounting and control: a review and evaluation”, *Accounting, Auditing & Accountability Journal*, Vol. 5 No. 4, pp. 3-34.

- Graham, J.R., Harvey, C.R. and Rajgopal, S. (2005), "The economic implications of corporate financial reporting", *The Journal of Accounting and Economics*, Vol. 40 Nos 1-3, pp. 3-73.
- Greene, J.C. (2008), "Is mixed methods social inquiry a distinctive methodology", *Journal of Mixed Methods Research*, Vol. 2 No. 1, pp. 7-22.
- Guba, E.G. (1990), "The alternative paradigm dialog", in Guba, E.G. (Ed.), *The Paradigm Dialog*, Sage, Newbury Park, CA, Cited in: Creswell, J.W. and Tashakkori, A. (2007), "Editorial: differing perspectives on mixed methods research", *Journal of Mixed Methods Research*, Vol. 1 No. 4, pp. 303-08.
- Hall, B. and Howard, K. (2008), "A synergistic approach: conducting mixed methods research with typological and systemic design considerations", *Journal of Mixed Methods Research*, Vol. 2 No. 3, pp. 248-69.
- Hammersley, M. (1992), "The paradigm wars: reports from the front", *British Journal of Sociology of Education*, Vol. 13 No. 1, pp. 131-43.
- Ittner, C.D. and Larcker, D.F. (2001), "Assessing empirical research in managerial accounting: a value-based management perspective", *Journal of Accounting and Economics*, Vol. 32 Nos 1/3, pp. 349-410.
- Jack, E.P. and Raturi, A.S. (2006), "Lessons learned from methodological triangulation in management research", *Management Research News*, Vol. 29 No. 6, pp. 345-57.
- Jick, T.D. (1979), "Mixing qualitative and quantitative methods: triangulation in action", *Administrative Science Quarterly*, Vol. 24 No. 4, pp. 602-11.
- Johnson, R.B. and Onwuegbuzie, A.J. (2004), "Mixed methods research: a research paradigm whose time has come", *Educational Researcher*, Vol. 33 No. 7, pp. 14-26.
- Johnson, R.B. and Turner, L. (2003), "Data collection strategies in mixed methods research", in Tashakkori, A. and Teddlie, C. (Eds), *Handbook of Mixed Methods in Social and Behavioural Research*, Sage, Thousand Oaks, Cited in: Teddlie, C. and Tashakkori, A. (2009), *Foundations of Mixed Methods Research: Integrating Quantitative and Qualitative Approaches in the Social and Behavioural Sciences*, Sage, Thousand Oaks, CA.
- Johnson, R.B., Onwuegbuzie, A.J. and Turner, L.A. (2007), "Toward a definition of mixed methods research", *Journal of Mixed Methods Research*, Vol. 1 No. 2, pp. 112-33.
- Merchant, K.A. (1989), *Rewarding Results: Motivating Profit Centre Managers*, Harvard University Press, Cambridge, MA.
- Mertens, D.M. (2007), "Transformative paradigm: mixed methods and social justice", *Journal of Mixed Methods Research*, Vol. 1 No. 3, pp. 212-25.
- Modell, S. (2005), "Triangulation between case study and survey methods in management accounting research: an assessment of validity implications", *Management Accounting Research*, Vol. 16 No. 2, pp. 231-54.
- Modell, S. (2009), "In defence of triangulation: a critical realist approach to mixed methods research in management accounting", *Management Accounting Research*, Vol. 20 No. 3, pp. 208-21.
- Modell, S. (2010), "Bridging the paradigm divide in management accounting research: the role of mixed methods approaches", *Management Accounting Research*, Vol. 21 No. 2, pp. 124-9.
- Modell, S. and Lee, A. (2001), "Decentralization and reliance on the controllability principle in the public sector", *Financial Accountability & Management*, Vol. 17 No. 3, pp. 191-219.
- Niglas, K. (2004), "The combined use of qualitative and quantitative methods in educational research", dissertation on Social Sciences, Tallin Pedagogical University, Tallin, Cited in: Bryman, A. (2007), "Barriers to integrating quantitative and qualitative research", *Journal of Mixed Methods Research*, Vol. No. 1, pp. 8-22.

-
- Onwuegbuzie, A.J. and Johnson, R.B. (2006), "The validity issue in mixed research", *Research in the Schools*, Vol. 13 No. 1, pp. 48-63.
- Sale, J., Lohfeld, L. and Brazil, K. (2002), "Revisiting the qualitative-quantitative debate: implications for mixed methods research", *Quality & Quantity*, Vol. 36 No. 1, pp. 43-53.
- Scott, P.J. and Briggs, J.S. (2009), "A pragmatists argument for mixed methodology in medical informatics", *Journal of Mixed Methods Research*, Vol. 3 No. 3, pp. 223-41.
- Shields, M.D. (1997), "Research in management accounting by North Americans in the 1990s", *Journal of Management Accounting Research*, Vol. 9, pp. 3-61.
- Tashakkori, A. and Creswell, J.W. (2007a), "Editorial: exploring the nature of reserach questions in mixed methods research", *Journal of Mixed Methods Research*, Vol. 1 No. 3, pp. 207-11.
- Tashakkori, A. and Creswell, J.W. (2007b), "Editorial: the new era of mixed methods", *Journal of Mixed Methods Research*, Vol. 1 No. 1, pp. 3-7.
- Tashakkori, A. and Teddlie, C. (1998), *Mixed Methodology: Combining the Qualitative and Quantitative Approaches*, Sage, Thousand Oaks, CA.
- Teddlie, C. and Tashakkori, A. (2003), "Major issues and controversies in the use of mixed methods in the social and behavioural sciences", in Tashakkori, A. and Teddlie, C. (Eds), *Handbook of Mixed Methods in Social and Behavioural Research*, Sage, Thousand Oaks, CA.
- Teddlie, C. and Tashakkori, A. (2009), *Foundations of Mixed Methods Research: Integrating Quantitative and Qualitative Approaches in the Social and Behavioural Sciences*, Sage, Thousand Oaks, CA.
- Webb, E.J., Campbell, D.T., Schwartz, R.D. and Sechrest, L. (1966), *Unobtrusive Measures: Non-reactive Research in the Social Sciences*, Rand McNally, Chicago, IL.
- Wouters, M. and Wilderom, C. (2008), "Developing performance-measurement systems as enabling formalization: a longitudinal field study of a logistics department", *Accounting, Organizations and Society*, Vol. 33 Nos 4/5, pp. 488-516.
- Yin, R.K. (2006), "Mixed methods research: are the methods genuinely integrated or merely parallel?", *Research in the Schools*, Vol. 13 No. 1, pp. 41-7.

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