Mixed Methods in Management Research: Implications for the Field

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Abstract: Mixed methods approaches to research have been widely adopted in social sciences and professional studies disciplines. Using a combination of methods is assumed to offer the promise of greater flexibility in undertaking research, of generating better supported arguments from research data, and of increased relevance to a wider circle of stakeholders, claims that are at least partially supported by evidence of higher journal citation rates for mixed than monomethod articles. A review of eighty-three articles published eight years apart in the Academy of Management Journal (AMJ) and Administrative Science Quarterly (ASQ) suggests that organizational and management researchers have been slow to adopt mixed methods approaches to research. Articles for both periods and in both journals were clearly dominated by studies that employed statistical analyses of archival, database, experimental or survey data, with little change over the period. These results reflect those found in other studies. This review of articles raised wider issues. 1) Difficulty was experienced in classifying studies, leading to a refinement in emphasis for a definition of mixed methods. 2) Management researchers as a whole, as reflected in the style and referencing of these articles, have thorough training in the fine details of statistical methods of analysis; understanding of qualitative analysis is weaker and restricted to a few; and none appears to have any awareness of a growing literature on mixed methods, nor did any discuss the kinds of issues typically covered in qualitative and mixed methods articles in other journals. The results of this review have implications for the training of management and organization studies researchers who currently appear to have a quite limited repertoire of non-statistical methods on which to draw when undertaking research.

Keywords: methodology; methods; mixed methods; quantitative; qualitative; research training; management; organization studies

1. Mixed methods as a methodological approach

Mixed and multi-method research have a long history in both science and social science field research (Maxwell 2015) and in evaluation studies (Rallis and Rossman 2003), but the adoption of mixed methods research more widely and its establishment as a distinct methodological tradition across the behavioural and social sciences is more recent (Johnson and Gray 2010). Since the turn of the century, adoption in some fields within health and education has been rapid and widespread, but those working in psychology and management appear to have been somewhat more reticent in their adoption of mixed approaches (Molina Azorín 2011; Molina Azorín and Cameron 2015; van der Roest, Spaaij and van Bottenburg 2015). The desire to appear ‘scientific’ in one’s methods, and differences in ontology, epistemology, and in disciplinary traditions have hindered the willingness of some to engage with what appears to be a compromise (and paradigmatically compromised) position. Management researchers seeking to use a mixed methods approach can meet with resistance from the gatekeepers of a discipline in which research, if not practice, is heavily imbued with a positivist philosophy, a love of indices, and an expectation of elaborate statistical analyses of numeric data (Currall and Towler 2003). Molina Azorín and Cameron (2015) cite several sources of evidence to suggest, however, that perhaps business scholars are using mixed methods research to a greater extent than appears from counts of studies identified as mixed methods articles, with journal editors being partly to blame for lack of openness about having included some qualitative methods during an investigation that was eventually published as an ostensibly quantitative research article.

The obligation to be open to use of mixed methods is predicated on the need to find the most appropriate methodology and method(s) to meet the purpose of any specific research project, and to answer its questions. Most social science researchers using mixed methods claim they do so to add strength to their argument (Johnson, Onwuegbuzie and Turner 2007). It is of interest, for example, that more than half of the “exemplary studies” in organization science explored by Frost and Stablein (1992) employed multiple or mixed methods (resulting in almost universal experiences for their authors of difficulty in having their work accepted for publication). In their recently published paper, Molina-Azorín and Cameron (2015) outlined four ways in which using mixed methods can benefit business research: preliminary qualitative data can provide a deeper understanding of context to inform context-specific studies in strategic management and entrepreneurship; attention to both process and outcome through mixed methods benefit theory-building, for example with qualitative methods contributing insights as to the mechanisms through which different variables contribute to a measured outcome; study of complex organizations would benefit from analyses that are integrated across...
micro and macro levels; and use of mixed methods helps to bridge the academic-practitioner divide through enhancing the interpretation and communication of results. A higher level of citations for mixed than monomethod articles from the same journals was reported also by these authors (based on an earlier study by Molina Azorin 2011) as evidence of the benefits gained.

After declaring mixed methods to constitute a third methodological movement (Johnson and Onwuegbuzie 2004) and in an attempt to achieve consensus about the focus of this rapidly evolving movement, Johnson, Onwuegbuzie and Turner (2007) reviewed 19 definitions of mixed methods contributed by then leaders in the field, to arrive at the following composite definition:

**Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the purposes of breadth and depth of understanding and corroboration. (Johnson et al, 2007: 123)**

In looking for what makes mixed methods distinctive (rather than to define it), Jennifer Greene described a mixed methods way of thinking as:

*an orientation toward social inquiry that actively invites us to participate in dialogue about multiple ways of seeing and hearing, multiple ways of making sense of the social world, and multiple standpoints on what is important and to be valued and cherished. A mixed methods way of thinking rests on assumptions that there are multiple legitimate approaches to social inquiry and that any given approach to social inquiry is inevitably partial. ... a mixed methods way of thinking actively engages us with difference and diversity in service of both better understanding and greater equity of voice. (Greene 2008: 20)*

Greene particularly values the dialectical aspect of using multiple or mixed methods, suggesting that dissonance resulting from diverse perspectives is to be welcomed because these become a source of fresh insights in themselves, and through seeking their resolution.

At the practitioner level, Teddlie and Tashakkori (2012: 775) identified the following as a set of core characteristics of mixed methods research (several of which could be considered to be characteristic of any good research):

- Methodological eclecticism
- Paradigm pluralism
- Iterative, cyclical approach to research
- Set of basic “signature” research designs and analytical processes
- Focus on the research question (or research problem) in determining the methods employed within any given study
- Emphasis on continua rather than a set of dichotomies
- Emphasis on diversity at all levels of the research enterprise
- Tendency toward balance and compromise that is implicit within the “third methodological community”
- Reliance on visual representations (e.g., figures, diagrams) and a common notational system.

Perhaps symptomatic of the youth of this third major methodological movement, or of the huge variation in backgrounds among its practitioners, debates nevertheless continue over just what constitutes or defines a mixed methods project. I have consistently emphasised the need for integration of the different methods employed (e.g., Bazeley 2009), suggesting this as a major criterion distinguishing mixed methods from multimethod and other forms of research. I define integration as occurring:

*to the extent that different data elements and various strategies for analysis of those elements are combined throughout a study in such a way as to become interdependent in reaching a common theoretical or research goal, thereby producing findings that are greater than the sum of the parts. (Bazeley 2010: 432)*
It has to be said, however, that integration at that level has been and remains an elusive goal in a high proportion of published studies where a mix of methods is claimed to have been used (O’Cathain, Murphy and Nicholl 2007).

The question of definition was relevant to, and became a challenge for the investigation reported here. Does defining a study as using mixed methods necessarily mean it has used both quantitative and qualitative sources or methods? What about studies that use multiple different qualitative (or, for that matter, quantitative) approaches to data gathering? Most, but not all leading mixed methods researchers look for both, despite also agreeing that the terms qualitative and quantitative are not necessarily polar opposites, but define boundaries on a multidimensional continuum. So how much of each different approach is needed? By what point in the research-writing process does integration need to have occurred?

This paper explores the adoption and application of mixed methods by organizational and management researchers by considering the incidence and style of articles published in two top-tier management journals over two recent and comparable periods, eight years apart. What can be learned from this exploration about the methodological training of researchers in management and organizational studies, their willingness to draw from a wider field of methodological literature, and their preparedness adopt innovative approaches to research?

2. Methods for the review

The incidence and style of methods adopted in management research were identified, tabulated, and described, with a particular focus on the adoption of mixed methods. This review refines and updates a brief overview that was part of a contribution to The SAGE dictionary of qualitative management research (Bazeley 2008). Articles were reviewed in 2006 and again in late 2014, and included all those that were published (excluding editorials and book reviews) during a two month period in 2006 and again in 2014 for the Academy of Management Journal (AMJ) and over a full year in 2005-6 and for 2014 for Administrative Science Quarterly (ASQ), generating 39 articles for 2006 (19 AMJ and 20 ASQ) and 44 for 2014 (24 AMJ and 20 ASQ).

Authors writing for these two journals have the luxury of being given enough space to provide a detailed rationale for and report of all aspects of their particular research project. Interestingly, they rarely provide an overview statement of their research design, although, with the consistent exception of when qualitative research is conducted as a preliminary to designing quantitative survey items or variables, they generally provide very detailed descriptions of data sources and analysis methods used in conducting their research. These articles are therefore ideal for a review of the type reported here. Authors’ reports of methods used were employed as a primary source of information for this analysis, but the study purpose(s) and background were also noted and consideration was given to way in which results were reported and discussed, as further evidence of the approach used.

Despite the detail available to the reader, definitive classification of the studies proved difficult. Some refinements were made to the earlier (2006) attempt to classify the studies, with somewhat stricter criteria regarding level of integration of results being applied, a consequence of growing maturity in this methodological field over the intervening period (and of the author’s reflections on it). In particular, studies in which qualitative methods were employed to design and/or check variables for use in statistical analyses but which did not describe any analysis processes for that qualitative data nor make further meaningful reference to it thereafter were not considered to comprise mixed methods studies for this review because they did not meet the criteria outlined above. (Some had been classified previously as sequential qual>QUAN studies because of the often considerable extent of preliminary qualitative data collected in order to design survey questions, variables, or scales.) Similarly, the occasional reporting of numbers of observations (e.g., of themes coded) in qualitative studies was considered to be a common enough practice within that tradition that it therefore did not warrant classification as mixed methods. Where the data from varied sources were amalgamated into a single database without preliminary separate consideration, and then analysed using a single method, the study was regarded as using a mono-method approach and not mixed. Studies that used mixed methods within either a quantitative or qualitative approach (rather than including both) were noted: these form a group about which methodologists would have different opinions as to whether they should be defined as mixed, multiple, or mono-method studies.

Attempting to classify the design type of the mixed methods studies also proved difficult, despite there being a considerable amount of (primarily US) literature devoted to this kind of enterprise (e.g., Teddlie and Tashakkori 2009; Creswell and Plano Clark 2011). Information was often iteratively exchanged between
methods; studies might also combine more than one of the basic design patterns (e.g., triangulation, development, and expansion), especially if methods evolve during the course of the study. This reinforces the value of having methods described in detail as was done here, rather than being described in brief with a label attached as often occurs elsewhere.

3. Results

Changes in methodological approach taken by management researchers in empirical studies over the period reviewed were minimal, with both periods being strongly dominated by quantitative approaches to research (typically involving multivariate regression and its derivatives), even when mixed forms of data were employed during the research process. Table 1 provides an overview of the approaches taken as determined from the reports in each of these journals for the two periods studied. Additional methodological details then follow, with further details added again for mixed methods articles.

Table 1: Overview of methodology, 2006–2014

<table>
<thead>
<tr>
<th>Methodological approach</th>
<th>2006</th>
<th>2014</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AMJ</td>
<td>ASQ</td>
<td>Both</td>
</tr>
<tr>
<td>Quantitative</td>
<td>16</td>
<td>12</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>14</td>
<td>31</td>
</tr>
<tr>
<td>Qualitative</td>
<td>3</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Mixed methods</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>20</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>20</td>
<td>44</td>
</tr>
</tbody>
</table>

Articles for both periods and both journals were clearly dominated by quantitative studies that relied on statistical analyses of archival, database, experimental or survey data, proportions being similar for both journals and both time periods. Qualitative articles were distributed across both years and both journals, with figures too small to draw conclusions about comparative patterns. An even smaller number of articles were classified as using mixed methods (4 in each year) using moderately stringent criteria that looked for evidence of integration (i.e., interdependence between the methods used) – 7 of the 8 were found in ASQ. Because changes over the period were clearly non-significant in quantitative terms, the two year-based samples were amalgamated for further analyses.

Further detail is provided for all methodological approaches in Table 2.

Table 2: Details of methods within methodological approaches

<table>
<thead>
<tr>
<th>Methodological approach</th>
<th>Journal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AMJ</td>
<td>ASQ</td>
</tr>
<tr>
<td>Mixed methods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>field work followed by experiment to test</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>preliminary qual to inform and then illustrate and help explain quant (+ follow-up qual for some)</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Qualitative</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>purely qualitative</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>qual with some counts</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Quantitative</td>
<td>33</td>
<td>26</td>
</tr>
<tr>
<td>purely quantitative</td>
<td>23</td>
<td>18</td>
</tr>
<tr>
<td>quant including variables derived from qual</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>quant with preliminary qual (design/check vars and/or context; some minimally interpret findings)</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
<td>40</td>
</tr>
</tbody>
</table>
This shows that the majority (69.5%) of quantitative articles were ‘purely’ so, in that both their sources and their analyses were numerical/statistical. Nine of the 59 quantitative articles drew some or all of their variables from qualitative sources, including interviews, open-ended survey questions, newspapers and other archival sources. In these articles these data typically were coded according to a limited a priori system or auto coded using some form of computerised content analysis, with the codes then used in statistical analyses only without any further reference to the original textual sources. A further 9 with primarily quantitative data and exclusively employing statistical analyses had gathered often quite extensive preliminary qualitative data to assist with initial contextual information and/or for designing, identifying, or checking relevant variables, but 7 of these made no further reference to the qualitative information while 2 provided just occasional brief illustrative comments or a rare quote in the results or discussion sections. In none of these latter cases was the use and integration of qualitative data considered to be sufficient to define the studies as mixed methods. Indeed, one of the authors who gathered extensive qualitative data and did include a brief reference to it in his results made a point of noting (in a footnote) that his study should not be considered to be a mixed method study. Similarly, 5 qualitative studies (of a total of 16) that included some counts (usually just frequency of codes) in their reporting were not classified as using mixed methods for this analysis.

Eight studies were classified as employing mixed methods insofar as they extensively reported information derived from different components of their data, and integrated it to some extent. None described their study as such, however, and one author only made an incidental reference to ‘mixed methods’ in summing up his data sources. Seven of these eight studies, all in ASQ, were quantitative dominant; the one mixed methods article in AMJ gave equal priority to both approaches. Three were primarily sequential in design, two concurrent, and three are best described as iteratively moving between components. The majority reported results sequentially, and tended to integrate the qualitative material in the discussion rather than the results section of the article.

Table 3 outlines additional details of the ways in which methods were combined in these studies. Each included extensive qualitative as well as quantitative data. The descriptions of the quantitative data sources and analyses were always detailed, while the descriptions of the qualitative sources and analyses varied considerably in extent and depth. The level of integration in results was generally limited, typically comprising use of the qualitative data for contextual, illustrative and post hoc explanatory purposes. Indeed, at least one, and possibly two or three might not merit classification as mixed methods studies if stricter guidelines regarding integration (e.g., in the results section) were applied.
If the definition of mixed methods is extended to include mixed within an overall approach, then at least a further five studies (3 quantitative, 2 qualitative, from those so counted earlier) could be so classified. Of the three that would merit the description of quantitative mixed methods, two comprised multiple quantitative substudies from which overall patterns were integrated and interpreted as a single set of results; the third used a second quantitative study to expand on findings from the first. Two qualitative studies that could be considered mixed drew on multiple sources of qualitative data supplemented by a limited amount of quantitative data, one within the context of an ethnography, and the other a case study. Each presented their results in the form of an integrated narrative based primarily on their various qualitative sources, occasionally illustrated by a quantitative statistic or table. Ethnography and case studies are generally classified as qualitative methodologies, but because each of these is likely to incorporate multiple sources of data, and depending on the type and handling of that data, they could also be described as ‘inherently mixed’ (Teddlie and Tashakkori 2009), as was the case with these two studies.

### 3.1 Additional observations

In the process of reviewing articles one inevitably notices patterns within them, beyond the bare-boned requirements for the review. Perhaps this was especially so in this case because I come from a social science rather than management background; being in ‘foreign territory’ always sensitises one to cultural patterns that are taken for granted by ‘native’ inhabitants (or practitioners, in this case). What follows are the points observed, that potentially matter for management researchers.

Perhaps because those using multiple or mixed methods did not self-define as doing so, no articles included any references to a growing literature on mixed methods. Nor did any discuss the kinds of issues typically covered in mixed methods articles in other journals, or demonstrate common practices of mixed methods researchers noted by Teddlie and Tashakkori (2012). These include, for example, making reference to paradigmatic issues (ontology and epistemology), indicating their purpose for mixing, naming and describing the type of design and/or using diagrams to illustrate the timing of different methods and their points of interface.

Authors across all methodological approaches rarely provided an overview of their methodological orientation or research design at the beginning of the methods section of their papers, although abstracts in AMJ generally provided a brief statement of design. Rather, methods sections were almost always started directly with some specific aspect of process, such as sample selection. Similarly, the results sections of quantitative studies almost universally started with ‘Table x presents descriptive data and correlations for all variables’ – that is, as with the methods sections, starting with a specific aspect of the data rather than an introduction to guide the reader.

Within qualitative studies, mention of methodological approaches (with one or two exceptions) was limited to case study or guidance from grounded theory. Is it that these are the primary qualitative approaches that are relevant for management research questions, or does it suggest a limited range of options are considered by (or available to) management researchers?
Most researchers using qualitative methods developed theoretical models to explain their data, as did Grant et al. (2014) in Stage 1 of their equal status mixed methods study, but those using qualitative methods to complement quantitative methods generally just reported coded categories or themes or contextual items of information. This indicates a more superficial approach to analysis of the qualitative data by the latter group, despite their frequent reference to use of grounded theory methods (a claim thoroughly critiqued by Suddaby 2006). Quantitative studies that employed only preliminary qualitative data generally did not mention how their qualitative data were analysed (if they were at all), except that where they were transformed to create quantitative variables the coding process used was described.

Details of all quantitative procedures, which were extremely thorough, for example in providing the logic for each analysis strategy and in covering every possible threat to validity, were also meticulously referenced. Apart from exceptions in some of the studies defined as qualitative, however, referencing of qualitative procedures was almost entirely limited to one or two of the many available texts, these being Miles and Huberman (1994) and Strauss and Corbin (1990 or 1998). Rarely was there anything more than superficial reference to the actual analysis strategies described in either of those texts.

No attempt was made, in this review, to assess the added benefit of taking a mixed approach. To make a definitive assessment of benefit would require a comparative analysis of the extent to which alternative methods used for a similar purpose were effective in achieving their purpose – or might have been, in the absence of a comparative study – a very complex task. Nevertheless, it was disappointing to see quantitative studies that clearly could have made more effective use of the often extensive amounts of preliminary qualitative data gathered so as to illustrate or further refine patterns and relationships being revealed through statistical analyses. Iterative moving back and forth between data sources, especially during the processes of analysis and writing, will reveal ideas and trends not noticed or developed when a single method is used.

4. Discussion

Molina Azorin and Cameron (2015: 469) echo Daft and Lewin’s (1990) call for researchers in organization studies to break out of their “normal science straitjacket”. Management, insofar as it is represented by these two journals, clearly continues to be a field in which empirical research is dominated by deductive, quantitative-statistical approaches and stylised reporting. While qualitative methods have achieved a small degree of acceptance by management researchers, use of mixed methods approaches continues to lag well behind despite the growing popularity of this approach in other fields, particularly those that, like management, have implications for translation to practice. Furthermore, the majority of mixed methods studies reported in these journals continued to rely on quantitative data and statistical analyses as their primary tool, with qualitative data and analyses being secondary and integration, in several cases, being further limited by sequential (methods determined) reporting.

When defining an article as using mixed methods (and, analogously, when writing a mixed methods article) attention must be focused on evidence of interdependence between different methods or approaches taken to gathering and analysing data. Interdependence speaks to a meaningful exchange between the varied approaches, which will be reflected in the way the study is conducted and its results are reported. It is through this meaningful exchange and reporting that the benefit of mixing methods becomes apparent. Several of the studies had rich but largely untapped data sources available to them, and had their authors brought through and paid some attention to the data generated by their less dominant method when doing their final analyses and writing their results and discussion sections, the studies would have been defined as mixed. This emphasis on evidence of integration coming through into the written results of the studies refines what is meant by integration and interdependence in defining mixed methods. Beyond definitions and classification, what is lost are the additional insights to be gained when data derived from different methods are viewed together, compared and contrasted with discrepancies explored, and coordinated into an integrated conclusion.

Difficulties in classification abound in this still emerging methodological movement, however. Can one classify an ethnography that uses multiple methods to gather and analyse data, including some basic numerical analyses, as mixed methods research or is it a qualitative study using an ethnographic methodology? Is statistically based content analysis of a priori or auto coded qualitative data a quantitative or a mixed method? These are questions still being debated, but perhaps there is no definitive answer. Rather than presume set definitions and boundaries, the better course is to always outline one’s parameters, to provide descriptions rather than labels. Having the space to do so freely is a luxury provided by the two journals that were studied for this review.
The results of this review have particular and important implications for the training of management researchers who appear to have a quite limited repertoire of methodological approaches on which to draw when undertaking their research – a conclusion reached also by Molina Azorin and Cameron (2015). The complexity of the problems researched in management and the level of research capability evident in management researchers would suggest adoption of mixed methods approaches would be readily achievable. Should the training of management researchers be extended to include a more thorough introduction to qualitative and mixed methods, they would be able to take even better advantage of the multiple and rich sources of data that they typically use in their studies. For example, they could draw on the qualitative sources they so often use only as preliminary data as a resource to contribute illumination and explanation when presenting and reviewing their follow-on statistical analyses, and they might more appropriately describe and reference the methods they use. Adopting fully developed mixed methods approaches to their studies, perhaps even in the dialectical mode recommended by Greene (2008) and practised by Jermier (1985), would provide management researchers with better opportunities to match rigour with relevance (as sought by Tushman and O’Reilly 2007), thus rendering their work more accessible to a professional audience (McGahan 2007), and to be ‘counterintuitive’ in challenging established theory (as sought by Bartunik, Rynes and Ireland 2006), thus rendering their work more interesting to an academic audience.

References


