

Mixed methods in business and management: A call to the 'first generation'

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ABSTRACT

Mixed methods is a youthful but increasingly robust methodological movement characterised by: a growing body of trans-disciplinary literature; prominent research methodologists/authorities; the emergence of mixed method specific journals, research texts, and courses; a growth in popularity amongst research funding bodies. Mixed methods is being utilised and reported within business and management fields, despite the quantitative traditions attached to certain business and management disciplines. This paper has utilised a multistrand conversion mixed model research design to undertake a retrospective content analysis of refereed papers (n = 281) from the 21st Australian and New Zealand Academy of Management (ANZAM) Conference 2007. The aim of the study is to provide a methodological map of the management research reported at the conference, and in particular the use, quality and acceptance level of mixed methods research within business and management fields. Implications for further research are discussed along with a call to the 'first generation' of business and management mixed method researchers to instigate mixed methods research training and capacity building within their respective business schools, relevant academies and associated professional forums and publications.

Keywords: mixed methods, research training, management research, research design, data integration, multistrand conversion mixed model

INTRODUCTION

This paper reports findings from a content analysis of refereed conference papers from the annual ANZAM conference held in Sydney, 2007. ANZAM was founded in 1985 to advance management education, scholarship, research, and practice in Australia and New Zealand. The Academy is the primary professional body for management educators, researchers, and practitioners in Australia and New Zealand, with approximately 600 individual members and 50 institutional members (representing mostly

Australian and New Zealand universities) as well as members from other countries. The main objective of ANZAM is:

- To facilitate the consideration and dissemination of management knowledge;
- To provide a range of services for the ongoing development of members;
- To provide an authoritative voice to advance the interests of the management discipline; and
- To promote greater collaboration between stakeholders. (www.anzam.org)

The papers at ANZAM are classified across a wide variety of business and management disciplines (16 streams) and contain many international submissions. Other studies that have investigated the use of mixed methods in business and management disciplines have tended to do this with a single discipline focus and have used academic discipline-based journals as the data sources. This study is unique in this respect as it has analysed conference papers from within a multidisciplinary forum.

The paper will briefly outline the rise of mixed methods as a third methodological movement (Tashakkori & Teddlie, 2003, p. x) and discuss studies of the use of mixed methods across business and management disciplines before introducing the concept of acceptance levels of mixed methods within research fields. The importance of quality frameworks in reporting mixed methods studies is explained before detailing the aims, research design, methodology, and findings of the research study being reported. The study has taken an exploratory approach aimed at providing a methodological map of recent business and management research as represented by papers from the 2007 ANZAM conference. The overarching research question guiding this research is: What evidence exists to gauge the use, quality and acceptance levels of mixed methods research within management based research? The research has utilised a multistrand conversion mixed model research design with an overarching research question and separate quantitative and qualitative sub-questions. The content analysis provides a broad based scan of methodological use of the 2007 ANZAM conference papers using the following paper categories: conceptual; qualitative; quantitative; and mixed methods. The study reviewed the research methods employed in papers from each of the 16 conference themes and concluded that the number of single method studies (86% of empirical studies) exceeded those utilising mixed methods (14% of empirical studies). The study then classified those papers identified as mixed methods in terms of data collection and

analysis. This is followed by a qualitative analysis of the mixed methods papers using a set of mixed method quality criteria.

It is hoped that the paper itself acts as an exemplar for the reporting of a mixed methods study and has aimed to achieve this through following the good reporting of a mixed methods study (GRAMMS) framework for quality reporting of mixed methods studies developed by O’Cathain, Murphy, and Nicholl (2008). The GRAMMS framework was developed by the authors to assist and encourage quality reporting of mixed methods research in the field of health and related sciences. This six-item guidance framework includes prompts about the ‘success of the study, the mixed methods design, the individual qualitative and quantitative components, the integration between methods and the inferences drawn from completed studies’ (O’Cathain et al., 2008, p. 92).

Creswell, Tashakkori, Jensen, and Shapley (2003, p. 629) acknowledge the many dilemmas and challenges faced by what they refer to as the ‘first generation’ of faculty that master and teach mixed methods research. The paper concludes by proposing further research in this area and by discussing the implications for building mixed methods research capacity in business and management fields, the implications of new technology and mixed methods and the need to educate monomethod researchers on the growing theoretical and methodological developments within mixed methods research.

MIXED METHODS AS A THIRD METHODOLOGICAL MOVEMENT

Mixed method research is a growing area of methodological choice for many academics and researchers from across a variety of discipline areas. Johnson and Onwuegbuzie (2004, p. 17) offer the following definition of mixed methods: ‘Mixed methods research is formally defined here 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’. Creswell and Plano

Clark (2007, p. 5) define mixed methods as follows:

Mixed methods research is a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis of data and the mixture of qualitative and quantitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems that either approach alone.

Creswell and Plano Clark (2007) have also mapped a brief history of mixed methods research and its evolution to date and have posited four, often overlapping, time periods in the evolution of mixed methods. These four time periods are the Formative period (1950s–1980s); Paradigm debate period (1970s–late 1990s); Procedural development period (late 1980s–2000); and the Advocacy as a separate design period (2000+). It is interesting to note the language that has been expressed around this evolution of mixed methods. For example Buchanan and Bryman (2007, p. 486) in reference to organisational research, conclude that:

The paradigm wars of the 1980s have thus turned to paradigm soup, and organisational research today reflects the paradigm diversity of the social sciences in general. It is not surprising that this epistemological eclecticism has involved the development of novel terminology; innovative research methods; non traditional forms of evidence; and fresh approaches to conceptualization, analysis, and theory building.

Based on a historical analysis Tashakkori and Teddlie refer to mixed methods as the 'third methodological movement' (2003, p. x). They see the evolution of mixed methods as a 'separate type of methodology that is clearly distinct from quantitative and qualitative approaches (2003,

p. x). Johnson and Onwuegbuzie (2004, p. 14) state very clearly that mixed methods research is a 'research paradigm whose time has come'. Mingers (2003) refers to the ceasefire of the paradigm wars being announced while Cameron and Miller (2007) use the metaphor of the phoenix to illustrate the emergence of mixed methods as the third methodological movement, arising from the ashes of the paradigm wars.

Several authorities have been emerging as mixed methodologist researchers and theorists and an interest in mixed methods has seen the recent emergence of several publications including academic journals, chapters within research texts (McMillan & Schumacher, 2006) and research texts themselves that are dedicated to mixed methods. The most comprehensive publication of mixed methods to date has been the edited *Handbook of Mixed Methods in Social and Behavioural Research* (Tashakkori & Teddlie, 2003). A second edition of the Handbook is due for publication in 2010. In January 2007 the first issue of the *Journal of Mixed Methods Research* was published and this was followed by the first issue of the *International Journal of Multiple Research Approaches* in October 2007. A very practical guide to the design and conduct of mixed methods research was published in the same year (Creswell & Plano Clark, 2007) followed by other texts focused solely on mixed methods (Bergman, 2008; Greene, 2007; Teddlie & Tashakkori, 2009). The movement has gained momentum in the last 5 years to the point where there are now discipline specific research texts. Creswell (2009, p. 106) in a recent editorial for the *Journal of Mixed Methods* noted: 'Generic books about mixed methods will no longer be needed; instead, we will have discipline-based books, such as the recently issued book on mixed methods for nursing and the health sciences (Andrew & Halcomb, 2009)'.

Mixed methods research as a third methodological movement is developing and evolving with recent studies of the use of mixed methods providing empirical evidence of the extent of

utilisation of mixed methods in contemporary research. Systematic reviews of the use of mixed methods have been conducted in the fields of: counselling (Hanson, Creswell, Clark, Petska, & Creswell., 2005); psychology (Powell, Mihalas, Onwuegbuzie, Suldo, & Daley, 2008); health and nursing research (O’Cathain, Murphy, & Nicholl, 2007); medical education research (Schifferdecker, 2007); social and human sciences (Bryman, 2008; Plano Clark, 2005); and evaluation research (Greene, Caracelli, & Graham, 1989). In the field of management research, Mingers (1997) and Mingers and Gill (1997) have been strong advocates for multimethodology or pluralism. The next section of the paper will discuss the use of mixed methods in management fields in detail. Creswell and Plano Clark have concluded that ‘today, we see cross-cultural international interest, interdisciplinary interest, publication possibilities, and public and private funding opportunities for mixed methods research’ (2007, p. 18). An aim of this paper is to gauge the use, quality, and acceptance of mixed methods research within the management research community, as represented by ANZAM.

STUDIES INVESTIGATING THE USE OF MIXED METHODS IN MANAGEMENT RESEARCH

Management is a diverse field with many disciplines represented which draw upon an array of theoretical foundations and frameworks. This range and diversity is reflected in a similar diversity of research approaches employed within management research. Currall and Towler (2003) document three major advantages to the diversity of qualitative and quantitative methods utilised in management and organisational research. The first advantage being that the methodological variety mirrors the variety of research questions posed by management and organisational researchers. Secondly, the heterogeneity of research methods is needed because of the number of theoretical paradigms that management and organisational research draws from (i.e., sociology, economics,

psychology, political science) and lastly, the research involves different levels of analysis (individual, dyad, team/group, organisational units, organisations).

A major premise behind the use of mixed methods is that a combination of quantitative and qualitative approaches provides added perspectives and a more comprehensive understanding of the research problem or phenomenon being studied than either approach alone could provide. The strengths and weaknesses of either approach can be offset against the other and encourages collaborative and trans-disciplinary research (Creswell & Plano Clark, 2007, p. 9). Greene et al. (1989) defined five major purposes for utilising mixed methods in research studies:

- *Development*: to inform the development of one method from another, using the methods sequentially for the purposes of increasing construct validity;
- *Complementing*: to explore areas of overlap and uniqueness within a phenomenon through the use of different methods for the purposes of enhancing, elaborating, illustrating or clarifying results, and to aid in the description or application of research findings;
- *Triangulation*: to cross-check and corroborate results by the use of different types of data;
- *Expansion*: to increase the range or scope of inquiry by appropriately matching the methodology to various components of the question of interest; and
- *Initiation*: to specifically discover inconsistencies and new perspectives that may be uncovered as a result of employing both qualitative and quantitative methods.

Many of the characteristics and contexts of business and management research contribute to the impetus and utilisation of mixed methods. These include: multiple theoretical foundations; the frequent trans-disciplinary nature of management and organisational research; the scope, range and complexity of business and management research; and the need to ensure validity,

credibility, transferability, and generalisability. A major advantage behind the use of mixed methods is that mixed methods can provide more insight and a deeper understanding of the phenomenon being studied than a single monomethod. 'Mixed methods are typically employed in applied settings where it is necessary to draw on multiple data sources to understand complex phenomena, and where there is little opportunity for experimentation' (Bazeley, 2008, p. 135).

Hurmerinta-Peltomaki and Nummela (2006) in their study on the use of mixed methods in international business research concluded there is clear value-added benefits when compared to traditional mono method approaches. They also found that 'it was not only the combination of data and analysis but also the timing of the combination that varied, and this again created different types of value-added' (Hurmerinta-Peltomaki and Nummela, 2006, p. 452).

There is a growing body of research that is investigating the incidence and usage of mixed methods in management research. Rocco, Bliss, Gallagher, and Pérez-Prado (2002) explored how mixed methods was approached in the fields of human resource development (HRD) and adult education and Mingers (2003) reviewed the information systems literature in reference to the use of multimethod research. Hanson and Grimmer (2005) undertook a content analysis of 1195 journal articles from three prominent marketing journals from 1993 to 2002. The purpose of this study was to determine the mix of qualitative and quantitative research published in the field of marketing. The authors identified 105 mixed quantitative/qualitative articles and coded these further to determine the primary orientation of the research as either: quantitative; qualitative; or triangulated. They found 74% of these articles were primarily quantitative (qualitative data not reported but used in design of the quantitative component). The articles coded as primarily qualitative represented 12% (quantitative data represented in a secondary manner) of the articles and those articles coded as triangulated

(genuinely multimethod) were 13%. This group represented 1.1% of all the articles within the larger sample ($n = 1195$) (Hanson & Grimmer, 2005, p. 66). The authors conclude that the continued dominance of quantitative research in marketing is linked to historical, social, and practical arguments. Some of these historical and social arguments are explained in more detail in the next section of the paper that looks at discipline acceptance levels of mixed methods.

Bazeley (2008, p. 135) reviewed 16 research articles in *Administrative Science Quarterly* (ASQ: June 2005–March 2006) and 19 from the *Academy of Management Journal* (AMJ: February and April, 2006). Of these 35 articles, six utilised a pure qualitative approach. Eight of the 35 used mixed methods (although the most common approach in these was to quantify qualitative data for statistical analysis with little or no further reference to the qualitative material). In others, qualitative interview data was gathered for the purpose of designing or to supplementing quantitative measures and was only referred to minimally, if at all, in elaborating the results or discussion of the statistical analyses. Bazeley (2008) concluded that this confirmed the continuing predominance of quantitatively based, statistical, hypothesis testing approaches in management studies.

Three similar pieces of research have directly informed the study reported in this paper. All three studies aim to discover the extent and current role mixed methods plays in the business/management fields through a process of systematic review of empirical studies. The first is a study undertaken by Rocco, Bliss, Gallagher, and Pérez-Prado (2003) who reviewed 16 online articles from 1999 to 2001 in the *Information Technology, Learning and Performance Journal*. The second study was conducted by Hurmerinta-Peltomaki and Nummela (2006) and involved the review of articles from four major journals in international business between 2000 and 2003. The third study involved a methodological scan of the *Strategic Management Journal* from 1997 to 2006 by Molina-Azorin (2009).

The Rocco et al. (2003) study reviewed 16 online articles from 1999 to 2001 in the *Information Technology, Learning and Performance Journal*. The authors screened the abstracts, methods, and findings sections of the articles and found that no authors explicitly stated the use of mixed methods in the abstracts. However, three articles were identified as using mixed methods through closer examination of the methods section of the articles. Nonetheless these authors 'did not explicitly state their commitment to using mixed methods' (Rocco et al., 2003, p. 24) but took a pragmatic approach justifying the use as an issue of suitability for their particular study. Rocco et al. (2003) explore these three studies in greater depth and concluded that 'little explicit discussion of research design decision-making or theoretical support for mixing design components was observed in the examples used' (Rocco et al., 2003, p. 27). This is supported by previous research undertaken by the authors in the field of human resource development and adult education (Rocco et al., 2002). The authors call for research courses that specifically deal with instruction on how to mix qualitative and quantitative methods in the stages of research design. They also call for appropriate journals to encourage the inclusion of such discussions in research (Rocco et al., 2003, p. 27).

The purpose of the Hurmerinta-Peltomaki and Nummela (2006) study was to investigate the implementation and impact of mixed methods research in IB research. As a consequence the authors decide to focus on articles published in four major IB journals between 2000 and 2003: (1) *International Business Review*, (2) *Journal of International Business Studies*, (3) *Journal of World Business*, (4) *Management International Review*. The articles were classified under four main categories: conceptual articles; qualitative studies; quantitative studies; and mixed method studies. The researchers screened 484 articles and found 394 articles contained empirical research designs (qualitative, quantitative, and mixed method). The study found that 68 (17%) of the 394

empirical studies utilised a mixed method. These 68 studies were then further categorised/coded according to a classification tool inspired by mixed methods typologies designed by Creswell (2003) and Tashakkori and Teddlie (1998). The classification tool developed is a 2×2 matrix (see Figure 2). Both the classifications and codes used by the Hurmerinta-Peltomaki and Nummela (2006) study have been replicated in the study being reported in this paper and are detailed in the methodology section. The authors focused on the extent of mixed methods in international business (IB) research and the potential of mixed methods to add value. The authors describe the field of international business as a 'multi-faceted area of research, crossing national, cultural, organisational and personal boundaries, and inspiring complicated research questions' (2006, p. 440). They argue that narrow methodological approaches would reveal only a small piece of the reality within this complex field.

The third study by Molina-Azorin (2009) studied the use of mixed methods in strategy research as represented in articles from all issues of the *Strategic Management Journal* from 1984 to 2006. A total of 676 journal articles were reviewed and of these 570 (84%) were categorised as empirical. Of these empirical articles the majority were quantitative (77%; $n = 441$), 17% ($n = 99$) of articles were mixed methods and 5% ($n = 30$) were qualitative. The majority of mixed methods articles were dominated by the quantitative aspect of the research with the qualitative methods playing a supportive role (Molina-Azorin, 2009, p. 51). Nonetheless, this study illustrates that there is a level of usage and acceptance of mixed methods within the strategic management field.

These studies indicate that mixed methods is being used and reported within certain management fields. Business and management research is a sphere of research activity that has a multidisciplinary and pragmatically applied focus and must cater to a diverse consumer base. Bazeley (2008) makes the assertion that business and management research needs to meet the needs of its audiences:

funding bodies; industry partners; thesis examiners; journal editors; and readers (Bazeley, 2008). The landscape of research resourcing and activity has undergone recent changes that have created more opportunities for mixed methods research. Brannen (2009, p. 9) identifies a number of trends that have given impetus to mixed methods over the last two decades. These include: a growth in research that serves strategic goals as opposed to theory driven research; the adoption of external market mechanism for commissioning research with a corresponding emphasis on efficiency and competence in delivering research with direct relevance to the funders; research questions and problems to complex policy issues are not typically elegant, linear and theoretically driven; the slow and steady rise and acceptance of qualitative research; the increasingly defined skills-based economy which relies on continual training and capacity building also applies to research training and capacity building and lastly; those that research and work in fields that draw from a range of theoretical perspectives are more likely to promote the use of mixed methods than those in more strongly bounded disciplines.

DISCIPLINE ACCEPTANCE LEVELS IN MIXED METHODS RESEARCH

Employing a mixed methods approach is not without its challenges and has been noted by Molina-Azorin (2009) and other contributors to the Special Issue of the *International Journal of Multiple Research Approaches* on 'Mixed Methods for Novice Researchers' (2009). Schifferdecker and Reed (2009, p. 641) identified three general challenges for conducting mixed methods research:

1. the availability of resources with which to conduct the research, including time, money and personnel with strengths in both qualitative and quantitative methods;
2. access to tools and programmes with which to store and arrange data to promote

comparison or integration of qualitative and quantitative data; and

3. the difficulties encountered in publishing mixed methods studies, given word limits and the amount of data such studies present.

Despite these challenges the authors go on to conclude that mixed methods is worthy of greater utility and recognition within their specific field of medical education research. This, they argue, is due to the superior ability of mixed methods to increase integrity and applicability of findings of new and complex research issues (Schifferdecker & Reed, 2009, p. 637).

Studies that utilise mixed methods approaches may face problems in being published due to dominant paradigmatic views expressed within discipline fields (Hurmerinta-Peltomaki & Nummela, 2006; Welch & Welch, 2004). Some journals explicitly exclude certain methodological approaches, whereas others imply methodological preferences. In a lot of respects decisions about where to submit literature for publication is determined by the level of acceptance within disciplines and specific paradigmatic preferences of the publications themselves.

Hanson and Grimmer (2005) in their analysis of methods employed in marketing journals concluded that the continued dominance of quantitative research in marketing is linked to historical, social, and practical arguments. Historically, academic marketing finds its philosophical roots in economics and the positivist traditions of influential centres (German Historical School of economics and the Harvard University Graduate School of Business) and along with economics and psychology are 'quantitative and sternly positivist in orientation' (Hanson & Grimmer, 2005, p. 66). The social arguments referred to by the authors relate to the legitimation and socialisation of academic marketers to the Kuhnian philosophy of paradigm:

In such a community, status and promotion are based on practicing, or at least understanding, the dominant techniques. There is also the issue of disciplinary status within the academic

community and this too means that quantitative research is dominant: well-established social sciences such as psychology and economics ... are quantitative and so too must be marketing. In addition, status issues between academic departments/schools which involve significant funding implications are globally common in the university sector; ... The more quantitative a marketing department seems, the more automatically respectable it becomes: the paradigm is strong. (Hanson & Grimmer, 2005, p. 67)

For certain disciplines within business and management research the quantitative paradigm is very entrenched. This may lead researchers and academics wishing to have their research published in journals, more likely to report only quantitative research and findings. Brannen (2005, p. 26) makes the salient point that:

... academic journals tend to be organized around disciplines and may favour particular types of research. ... Some researchers using mixed methods may for such reasons report their qualitative and quantitative data separately. Researchers presenting evidence based on both qualitative and quantitative methods but drawing upon one set of evidence and under reporting the other may risk criticism for not fully exploiting the possibilities for the analysis of both sets of data.

Currall and Towler (2003, p. 515) in their discussion on the integration of qualitative and quantitative techniques in management and organisational research call for:

... increasing the breadth of graduate research methods training, expanding collaboration among qualitative and quantitative researchers within professional organisations, establishing promotion and tenure policies that reward methodological breadth, and institutional journal editorial policies that support the combination of methods.

The authors call for journal editors to demand the full explication of both the qualitative and

quantitative methods used in integrated studies so that readers can adequately evaluate, appreciate, replicate, and stimulate innovative approaches to combined studies.

Creswell and Plano Clark (2007, pp. 178–180) provide a checklist for evaluating the level of acceptance of mixed methods research within disciplines. They categorise three types of acceptance levels: minimal; moderate; and major. Minimal discipline acceptance is categorised by: awareness of qualitative research within the discipline; publication of mixed method studies in discipline-based journals; graduate students using mixed methods in dissertation research; discussion in journals about the need for mixed methods; and mixed methods discussed at professional conferences. Major acceptance is characterised by: special issues of a journal on the use of mixed methods within the discipline; publication of mixed methods studies in top discipline-based journals; and courses on mixed methods research as part of graduate research training programmes. These three acceptance levels could be considered as a type of continuum for gauging acceptance levels for specific disciplines. An example of major acceptance levels can be found in the discipline fields of evaluation, health and nursing, psychology, family medicine, education and organisational studies. These disciplines fields discuss and utilise mixed methods extensively. Journals from the fields of family medicine, counselling psychology and school based education have published special issues on qualitative and mixed methods. The *International Journal of Multiple Research Approaches* is publishing special issues on mixed methods in specific discipline fields (health sciences, education and business) in 2011. One of the aims of this paper is to gauge the acceptance levels of mixed methods in business and management fields.

QUALITY ISSUES IN MIXED METHODS RESEARCH

The continued development and evolution of mixed methods has seen an increasing interest and attention to the issue of quality in mixed methods

studies. Due to limitations imposed on article length an in depth discussion of these developments is not possible, however a brief overview of the frameworks developed will be presented. Sale and Brazil (2004) sought to identify criteria to critically appraise the quality of mixed methods studies as documented in the health sciences. The overall goal of the authors being to 'promote standards for guiding and assessing the methodological quality of [mixed methods] studies' (Sale & Brazil, 2004, p. 361). The quality criteria identified includes:

- Truth value (credibility vs. internal validity)
- Applicability (transferability/fittingness vs. external validity/generalizability)
- Consistency (dependability vs. reliability)
- Neutrality (confirmability vs. objectivity) (Sale & Brazil, 2004, pp. 358–360)

The Sale and Brazil (2004) criteria appears to be a result of an exercise in combining established quality criteria for single method or monomethod quantitative and qualitative research. Since then others have developed more specific mixed methods quality criteria. Bryman, Becker, and Sempik (2008, p. 275) explored quality criteria for quantitative, qualitative, and mixed methods research in social policy research from within the UK and devised the following quality criteria for mixed methods research:

- mixed method research should be relevant to the research question;
- the procedures employed in doing mixed method research should be transparent;
- mixed methods findings need to be integrated and not left as distinct quantitative and qualitative findings;
- a rationale for using a mixed methods approach should be outlined.

Bryman (2008) went on to develop a list of 17 rationales for utilising mixed methods and applied these to a systematic review of social science journal

articles. O'Cathain et al. (2008) have developed a set of quality criteria questions for reporting mixed methods studies in health services research under the banner of GRAMMS. This six-item guidance framework includes prompts about the 'success of the study, the mixed methods design, the individual qualitative and quantitative components, the integration between methods and the inferences drawn from completed studies' (O'Cathain et al., 2008, p. 92). The GRAMMS includes the following set of quality prompts/guidelines:

1. Describe the justification for using a mixed methods approach to the research question
2. Describe the design in terms of the purpose, priority, and sequence of methods
3. Describe each method in terms of sampling, data collection, and analysis
4. Describe where integration has occurred, how it has occurred and who has participated in it
5. Describe any limitation of one method associated with the presence of the other method
6. Describe any insights gained from mixing or integrating methods

In an exercise of reflexivity these quality prompts/guidelines will be acknowledged and addressed in the discussion relating to this paper which itself reports a mixed methods study.

RESEARCH PURPOSE AND QUESTIONS

In consideration of the issues presented, the present study sought to investigate the use and quality of mixed methods research within management based research as represented by the 21st annual ANZAM conference 2007. A mixed methods study was undertaken to achieve this aim and as a result has utilised a mixed methods approach to research questions, research design, and research reporting. The rationale for choosing a mixed methods approach for this study was based on two mixed methods purposes or rationales as devised by Bryman (2008,

pp. 91–92). These rationales are illustration and enhancement. Illustration refers to the use of qualitative data to illustrate quantitative data results. Enhancement is the building on or augmenting of one type of data (qualitative or quantitative) with the other. Illustration and enhancement was obtained through qualitatively analysing the data set of mixed methods studies identified through the quantitative collection and analysis strand. A pure quantitative approach to the study would provide evidence of usage across management fields but would not yield sufficient data about the quality of the mixed methods studied. A pure qualitative approach would not be able to succinctly provide broad data for usage across these papers whereas the combination of both provides a more complete picture of the phenomenon being studied.

Teddlie and Tashakkori (2009, p. 133) refer to an approach to framing research questions in a mixed methods study. This approach involves proposing an overarching mixed research question and then expanding on this through separate sub-questions that are either qualitative or quantitative. This has been the approach taken in this study. As a result the following overarching research question and research sub-questions were posited:

Overarching research question

RQ1: What evidence exists to gauge the **use, quality and acceptance levels** of mixed methods research within management based research?

Quantitative sub-questions

RQ2: What is the frequency of use of mixed methods within management based research?

RQ3: What evidence exists to measure the acceptance level of mixed methods in management based research?

RQ4: What levels of integration of data collection and analysis is being achieved in management based mixed methods research?

Qualitative sub-questions

RQ5: Do those utilising mixed methods in management based research explicitly state a

rationale or purpose for undertaking mixed methods?

RQ6: Do those utilising mixed methods in management based research utilise a mixed methods typology or research design?

RQ7: What priority is being given to qualitative and quantitative data in management mixed methods research?

Research design

As noted by Leech and Onwuegbuzie (2009) there now exists a vast array of mixed methods typologies and research designs which can be bewildering even to the experienced researcher. Tashakkori and Teddlie (2003) developed a four dimensional typology based on a set of four criteria: number of methods used; number of strands or phases; type of implementation – concurrent, sequential or conversion; and stage of integration. One of resulting research designs from this typology is the multistrand conversion mixed model research design and has been chosen for this research:

In this type of design multiple approach questions are asked. One type of data is collected and analyzed and is then transformed to another data type (qualitized/quantized) and analyzed accordingly. Two types of inferences are made on the basis of each set of results and are pulled together at the end to generate meta-inferences ... This design is different from the previous one [multistrand conversion mixed method] in that it is also mixed in the conceptualization stage (e.g., questions) as well as in the inference stage. (Tashakkori & Teddlie, 2003, p. 689)

Figure 1 provides a visual depiction of the multistrand conversion mixed model research design. The data utilised is qualitative secondary data and has been quantized through answering the quantitative research sub-questions in the first strand. The mixed methods data identified in the first strand is then analysed qualitatively in the second strand through answering the qualitative research

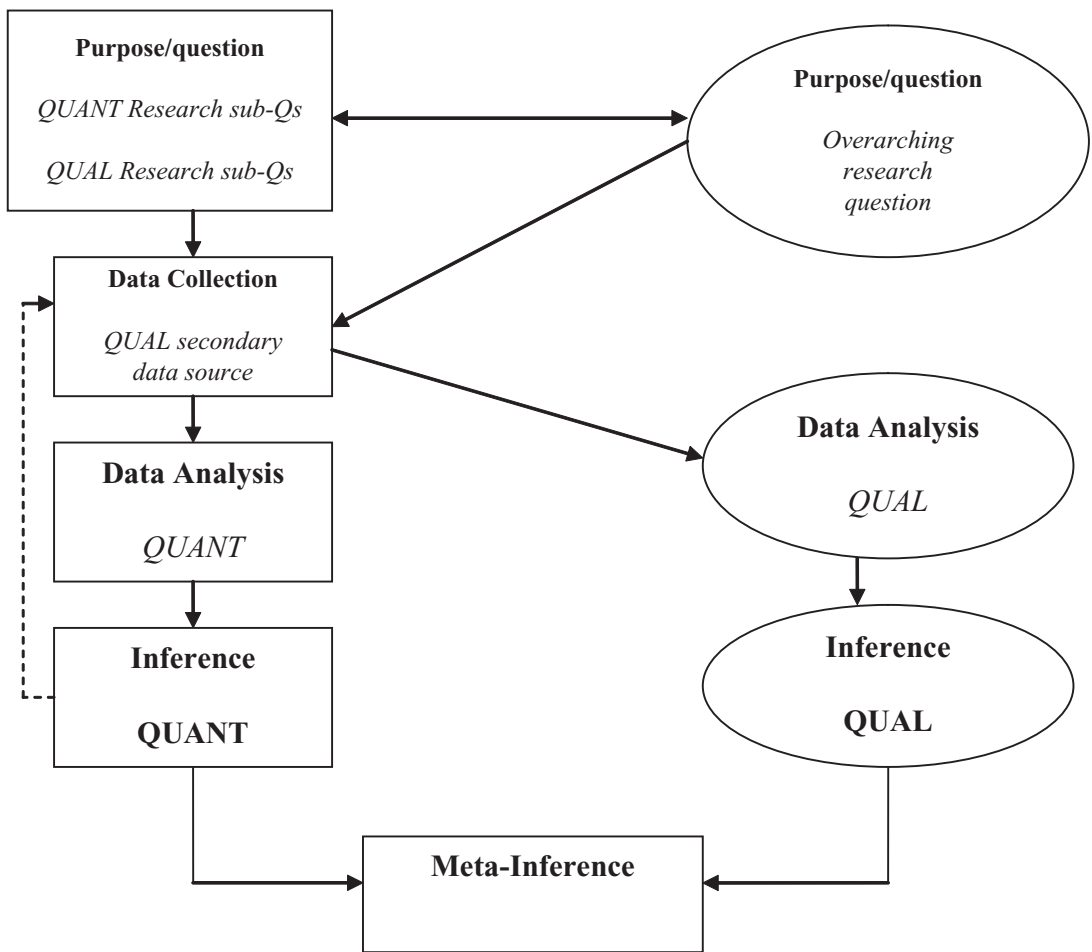


FIGURE 1: MULTISTRAND CONVERSION MIXED MODEL DESIGN. SOURCE: ADAPTED FROM TASHAKKORI AND TEDDLIE (2003, p. 689).

sub-questions. Inferences are obtained for both strands of data collection and analysis. A meta-inference is achieved that attends to the overarching research question.

METHODOLOGY

Data collection and sample

The data collection method employed in this research is a systematic review involving the content analysis of conference papers. The research analysed qualitative data both quantitatively and qualitatively. The sampling technique utilised was purposive or judgemental sampling, whereby specialised selected sample elements have been chosen by the researcher

as they represent the target population. The sample includes 281 refereed papers across 16 conference themes from the 21st ANZAM Conference, 2007 (refer to Table 1 for a list of the conference themes). Papers were reviewed using *a priori* coding system. Data was collected from each refereed paper and included conference stream, demographic data, research design, and methods used.

Quantitative analysis of the qualitative data

As per the multistrand conversion mixed model research design employed for this study, the qualitative data is quantised through a process of quantitative analysis. Papers were reviewed using a coding

TABLE 1: DATASET OF THE STUDY

Conference theme/Stream	Conceptual	QUAL	QUANT	Mixed methods	Total
1. Critical Management Studies	4	3	0	0	7
2. Entrepreneurship and Small Business	3	4	5	2	15
3. Gender and Diversity in Organisations	4	6	6	1	17
4. Human Resource Management and Development	13	13	9	1	36
5. International Management	3	2	2	0	7
6. Knowledge Management and Intellectual Capital	9	3	8	3	23
7. Management Education and Development	1	5	4	8	18
8. Marketing and Communication	3	2	6	3	14
9. Networks, Clusters, Collaboration and Social Capital	10	3	8	0	21
10. Organisational Change	3	4	8	1	16
11. Organisational Behaviour	10	18	9	1	37
12. Public Sector and Non-profit	3	3	5	1	12
13. Research Methods	1	2	1	4	8
14. Strategic Management	9	1	4	1	15
15. Sustainability and Social Issues in Management	6	3	9	0	18
16. Technology, Quality and Operations Management	1	8	6	2	17
Total	83 (30%)	79 (28%)	90 (32%)	28 (10%)	281 (100%)

Source: Cameron (2008).

system replicated from the Hurmerinta-Peltomaki and Nummela (2006) study. The categories for research paper type included: conceptual; quantitative; qualitative; and mixed method. Coding decisions for what constituted each paper type followed the protocol outlined by the Hurmerinta-Peltomaki and Nummela (2006). Conceptual papers included general themes, literature reviews, and conceptual/analytical papers without empirical data. Some papers reported on an empirical study/ies that the author/s had not conducted themselves, and these were also included in the conceptual paper category. Quantitative papers were judged to be so if they were in numerical form and analysis was based only on this data. Qualitative papers were

considered to be those with data mainly in textual form and where the data was analysed by employing qualitative techniques. Mixed method studies were categorised as such if the same researcher/s was involved in both qualitative and quantitative phases. The use of mixed methods need to be expressed within the paper, or at least the reader needed to be able to infer it.

Further analysis of those papers considered to be mixed methods followed. Each of the 28 mixed method studies were evaluated according to the classification tool designed by the Hurmerinta-Peltomaki and Nummela (2006, p. 446) study and depicted in Figure 2. The classification involves labelling a study with one letter (A or C), two letters

		Data Analysis	
		Qualitative	Quantitative
Data Collection	Qualitative	A	B
	Quantitative	C	D

FIGURE 2: CLASSIFICATION TOOL OR MIXED METHODS STUDIES.
SOURCE: HURMERINTA-PELTOMAKI AND NUMMELA (2006).

(AB, AC, AD, BC, BD, CD), three letters (ABC, ABD, ACD, BCD), or four letters (ABCD). Please note that the types A and D were not included as these do not represent a mixed method study. Descriptions of these classifications are listed in Table 3. Numerical codes for each paper/article were entered into SPSS statistical software.

Qualitative analysis of the qualitative data

The full qualitative analysis involved a content analysis of the 28 mixed method papers identified in the previous quantitative analysis by utilising qualitative analysis techniques and NVivo 8 software. These qualitative data analysis techniques included thematic textual analysis. Themes identified in the qualitative analysis were derived from the literature on quality in mixed methods research and addressed in the qualitative research sub-questions (data analysis integration; rationale; research design and; the priority dimension). Both manifest (visible surface content) and latent (underlying and implicit meaning) coding were employed to initially investigate whether certain phrases/terms were explicitly utilised and then to explore the context of the phrase/term and/or to determine implicit content and meaning. This strengthens the final result of the analysis. The qualitative data analysis of a sub-set of five of the 28 identified mixed methods papers is presented.

Limitations

It must be noted that limitations exist in attempting to compare different forms of academic

literature. Conference papers and journal articles are very different in terms of length, review processes, and academic rigour. Added to this is the differences in publication years and time spans. The year of publication of the ANZAM conference papers (2007) and the systematic reviews of discipline specific business and management journal articles referred to in the review of literature, are disparate in terms of sample size and chronological time spans. Secondly, the analysis in this study was focused on the mixed method papers. A fuller analysis of all empirical studies (quantitative, qualitative, and mixed method) would have provided a broader methodological scan of the management research from within the sample. Quality criteria for the single method or monomethod quantitative and qualitative research could also be applied to these studies as a means of comparison. Future research is planned for discipline clusters of management/business research as represented by discipline specific journals for 2004–2008 to combat some of these limitations and expand the scope of the research.

FINDINGS AND DISCUSSION

The structure of the presentation of the findings and discussion will reflect the structure of the multistrand conversion mixed model research design employed. Findings from Strand 1 will precede the findings from Strand 2. The research sub-questions and inferences for each strand will be discussed before presenting the meta-inferences.

Strand 1: Findings and discussion

The quantitative data analysis employed for the qualitative data utilised descriptive and univariate statistics. Table 1 depicts the frequency distribution of research paper types across the 16 conference streams. Quantitative papers represented just under one third of the papers (32%), followed by conceptual papers (30%). Qualitative papers represented 28% of the papers and mixed methods represented 10%. Papers were categorised as either conceptual or empirical (qualitative, quantitative, and mixed methods). This process identified a total

of 197 papers with an empirical research design. Of these empirical studies 28 (14%) utilised a mixed method. From Table 1 it can be concluded that the number of single method studies exceeded those utilising mixed methods. Four research streams did not have any mixed methods (MM) papers:

- Critical Management Studies ($n = 7$)
- International Management ($n = 7$)
- Networks, Clusters, Collaboration, and Social Capital ($n = 21$)
- Sustainability and Social Issues in Management ($n = 18$).

The streams with the most mixed methods papers were:

- Management Education and Development (MM = 8; $n = 18$)
- Research Methods (MM = 4; $n = 8$).

Table 2 plots the frequencies of the identified mixed methods papers across a classification system for mixed methods studies. The large majority of mixed method type papers were in the AD classification ($n = 22$ or 78%). This classification analyses qualitative data qualitatively and analyses quantitative data quantitatively.

Responses to the Strand 1 quantitative research sub-questions will be addressed before presenting the Strand 1 inference.

Strand 1: Quantitative sub-questions

RQ2: What is the frequency of use of mixed methods within management based research?

Of the 197 conference papers with an empirical research design, 14% ($n = 28$) utilised a mixed method as compared to 46% ($n = 90$) quantitative

TABLE 2: MIXED METHODS STUDIES ACCORDING TO CLASSIFICATION

Code	Description	Number of studies in the analysis
B	Qualitative data analysed quantitatively	0
C	Quantitative data analysed qualitatively	0
AB	Qualitative data analysed qualitatively and quantitatively	2
AC	Qualitative and quantitative data, both analysed qualitatively	1
AD	Qualitative data analysed qualitatively, quantitative data analysed quantitatively	23
BC	Qualitative data analysed quantitatively, quantitative data analysed qualitatively	0
BD	Qualitative and quantitative data, both analysed quantitatively	1
CD	Quantitative data analysed qualitatively and quantitatively	0
ABC	Qualitative and quantitative data, both analysed qualitatively, qualitative data also analysed quantitatively	0
ABD	Qualitative and quantitative data, both analysed quantitatively, qualitative data also analysed qualitatively	1
ACD	Qualitative and quantitative data, both analysed qualitatively, quantitative data also analysed quantitatively	0
BCD	Qualitative and quantitative data, both analysed quantitatively, quantitative data also analysed qualitatively	0
ABCD	Qualitative and quantitative data, both analysed concurrently with qualitative and quantitative research methods	0
Total		28

Source: Cameron (2008).

papers and 40% ($n = 79$) qualitative papers (40%). It can be concluded that the number of single method studies (86% of empirical studies) exceeded those utilising mixed methods (14% of empirical studies). Mixed methods papers represented 10% of all conference papers with a relatively even mix of quantitative and qualitative papers along with conceptual papers.

RQ3: What evidence exists to measure the acceptance level of mixed methods in management based research?

The evidence produced for the previous research sub-question (RQ2) and the systematic reviews referred to in the literature review point to a possible minimal acceptance of mixed methods across business and management fields. The two conference streams that contained the most number of mixed methods studies were the Management Education and Development (MM = 8, $n = 18$) and Research Methods streams (MM = 4, $n = 8$). These results points to the early stages of minimal acceptance. Further evidence needs to be collected in order to make a more informed judgement and response to this question.

RQ4: What levels of integration of data collection and analysis is being achieved in management based mixed methods research?

The question of the level of integration of data collection and analysis in mixed methods research is described as:

... how far do mixed methods researchers analyze, interpret, and write up their research in such a way that the quantitative and qualitative components are mutually illuminating? This is what is meant in this article by 'genuinely integrate.' It involves the question of whether the components of a mixed methods investigation are related to each other or whether they are either totally or largely independent of each other ... the degree to which researchers link their quantitative and their qualitative findings in the course of analyzing and writing up their findings. (Bryman, 2007, p. 8)

The classification system utilised in this study (Table 2) is a very useful tool for evaluating levels of integration in mixed methods studies. The findings indicate that the most popular form of mixed methods research is the AD classification. Just under three quarters ($n = 23$ or 82%) of the mixed methods studies utilised this form of mixed method research. The AD classification of mixed method research study is that which uses qualitative data analysed qualitatively and quantitative data analysed quantitatively. Five of the 28 mixed methods studies identified in this study indicated alternate classifications. The AD classification is one which displays no integration of data analysis as the qualitative data is analysed qualitatively and the quantitative data is analysed quantitatively. This maintains a separation between the two data sets. In the other five classifications utilised there is a level of integration of the data analysis.

Strand 1: Quantitative inference

The results of the quantitative analysis of the qualitative data in Strand 1 of the research demonstrates mixed methods is being utilised in business and management research. The most frequent types of papers in the sample being quantitative (32%), followed by conceptual (30%), qualitative (28%), and mixed methods (10%). Unlike the studies reported by Bazeley (2008), Molina-Azorin (2009), and Hanson and Grimmer (2005) for discipline specific journals, quantitative approaches were not as dominant and in fact there was a relatively even spread across the conceptual, quantitative and qualitative papers for the sample. These findings prompt further questions: Does this have something to do with preferences for reporting and publishing quantitative research over other types of studies? Does this create a tendency by those engaging in mixed methods studies to only report the quantitative part of their studies in the hope this raises the chances of journal publication?

In terms of acceptance levels there is a slight indication that business and management fields are beginning to utilise and accept mixed

methods. The rates of mixed methods in the Hurmerinta-Peltomaki and Nummela (2006) and Molina-Azorin (2009) study were at 17% of empirical articles as compared to 14% of empirical papers in this study. The fact mixed methods is being presented in conference streams where management education and research methods are being discussed also indicates this tendency towards minimal acceptance. Given the scope and breadth of business and management fields this assertion needs to be made cautiously. For certain discipline fields there is a strong paradigmatic stance towards quantitative approaches. The findings also point to an over reliance of mixed methods research types that maintain the quantitative qualitative divide and the non use of more integrated mixed method designs. This has direct implications for building the research capacity of business and management researchers and points to the need for the inclusion of mixed methods in higher degree research training curricula.

Strand 2: Findings and discussion

Due to the length limitations of this paper the full qualitative analysis for all 28 mixed methods papers is not possible. A summary of key findings is presented as follows. Of the 28 mixed methods papers, five did state that they chose to use both quantitative and qualitative methods, however no paper explicitly stated a rationale or purpose for utilising mixed methods. The majority of the identified mixed methods papers did not address specific quality criteria for reporting mixed methods. Only one paper explicitly used mixed methods terminology, literature and authorities when discussing research design.

The full qualitative analysis of a sub-set of five of the mixed methods papers is presented in Table 3. The mixed methods papers were predominantly the AD classification ($n = 23$) however there were five papers which were not (AC, BD, ABD, and two AB papers) four of these papers plus one of the AD classified papers has been chosen for the mixed methods sub-set.

Responses to the Strand 2 qualitative research sub-questions will be addressed before presenting the Strand 2 inference.

Strand 2: Qualitative sub-questions

RQ5: Do those utilising mixed methods in management based research explicitly state a rationale or purpose for undertaking mixed methods?

Of the total number of identified mixed methods papers ($n = 28$) not one of these papers explicitly stated a rationale or purpose for mixing methods however, five of these papers did state that they were using a combination of both quantitative and quantitative methods.

RQ6: Do those utilising mixed methods in management based research utilise a mixed methods typology or research design?

For the 28 papers identified in this study as using mixed methods only one paper actually referred to the mixed methods literature and utilised a mixed methods research design.

RQ7: What priority is being given to qualitative and quantitative data in management based mixed methods research?

The findings have highlighted how difficult it is to try to determine the priority given to either qualitative or quantitative data in the mixed method papers. This is due in part, to the variety of methods used, the variety of method combinations and sequencing of methods and, the diverse approaches to implementation and sequencing. Nonetheless, it is mainly due to the fact most papers do not articulate or make the priority or sequencing transparent. This is a major component of good quality research reporting and a frequent criticism of published mixed methods studies.

Strand 2: Qualitative inference

Qualitative analysis was undertaken for all identified mixed methods papers and the full

TABLE 3: SUB-SET OF MIXED METHODS PAPERS

Paper ID	Classification	Research design, methods and analysis
Paper AB(1) Entrepreneurship & Small Business Stream	Qualitative data analysed qualitatively and quantitatively	<p><i>Research design:</i> Not explicitly stated.</p> <p>Refereed to as an 'evaluation project' in the abstract.</p> <p><i>Rationale:</i> Not articulated.</p> <p><i>Priority:</i> Unclear/not stated.</p> <p><i>Sequence:</i> QUAL + QUAL + [QUALI + QUANT]</p> <p>Methods: heading 'Evaluation methods'</p> <p>Reflective journals and student questionnaire.</p> <p>Analysis: Tally system for negative and positive comments from within reflective journals.</p> <p>Textual analysis on student questionnaires.</p> <p>Staff interviews and weekly logs.</p>
Paper AC(1) Organisational Behaviour Stream	Qualitative and quantitative data, both analysed qualitatively	<p><i>Research design:</i> Triangulated research design with four stages – explicitly stated.</p> <p><i>Rationale:</i> Not articulated.</p> <p><i>Priority:</i> Unclear/not stated.</p> <p><i>Sequence:</i> QUAL → QUANT → QUAL → QUAL</p> <p>Methods: Four Stages</p> <ol style="list-style-type: none"> 1. Focus groups 2. Survey 3. Semi structured interviews 4. Unstructured interviews. <p>Analysis: Qualitative analysis of both qualitative and quantitative data. Thematic review: six themes identified. Textual analysis with no statistical information provided.</p>
Paper BD(1) Management Education and Development Stream	Qualitative and quantitative data, both analysed quantitatively	<p><i>Research design:</i> 'A combined qualitative and quantitative research methodology was employed' – explicitly stated.</p> <p><i>Rationale:</i> Not articulated.</p> <p><i>Priority:</i> Two quantitative instruments seemed to have more results reported than the qualitative observational instrument.</p> <p><i>Sequence:</i> QUAL → QUANT + QUANT</p> <p>Methods: Observation using an observational tool (EIBCA), followed by 2 quantitative instruments (LBQ and EISAQ).</p> <p>Analysis: Cronbach Alpha co-efficient, use of SPSS version 11.0, MANOVA and ANOVA.</p> <p>A total of 10 tables were included in the paper all with numerical statistics.</p>

(continued)

TABLE 3: CONTINUED

Paper ID	Classification	Research design, methods and analysis
Paper ABD(1) Organisational Change Stream	Qualitative and quantitative data, both analysed quantitatively, qualitative data also analysed qualitatively	<p><i>Research design:</i> Mixed methodology case study with four stages - explicitly stated.</p> <p><i>Rationale:</i> Not articulated- implied.</p> <p><i>Priority:</i> Unclear/not stated.</p> <p><i>Sequence:</i> QUAL → QUAL → QUAL → QUANT</p> <p>Methods: Four stages</p> <ol style="list-style-type: none"> 1. Literature review 2. Secondary data examined both quantitatively & qualitatively 3. Semi-structured interviews 4. Survey-quantitative. <p>Analysis: Methodology was presented for a proposed research study yet to be undertaken.</p>
Paper AD(7) Research Methods Stream	Qualitative data analysed qualitatively, quantitative data analysed quantitatively	<p><i>Research design:</i> Sequential mixed model research design – explicitly stated.</p> <p><i>Rationale:</i> Not articulated.</p> <p><i>Priority:</i> Unclear/not stated.</p> <p><i>Sequence:</i> QUANT + (qual) → [QUANT + QUAL]</p> <p>Methods: Two Phases:</p> <ol style="list-style-type: none"> 1. Survey and focus groups 2. Mixed method evaluation. <p>Analysis: Quantitative data analysed quantitatively and qualitative data analysed qualitatively – details of analysis not given.</p>

qualitative analysis was presented on five of the mixed methods papers. The findings point to a lack of acknowledgement of the growing body of mixed methods literature and lack of attention to the quality criteria for reporting mixed methods. This needs to be explored further. Is it a result of a lack of training in mixed methods? Perhaps it reflects the recent emergence of mixed methods as a third methodological movement and trends over time may give a better indication of the maturity of the movement as reflected in its future utilisation in business and management research. The diversity of approaches in the prioritising and sequencing and implementation

of data in the mixed methods papers is something that can be analysed further through the development of a framework for denoting this aspect of mixed methods studies. Nonetheless, no matter what paradigmatic stance, research design, sampling method(s) and analysis undertaken, the quality of research reporting is a universal issue. Good reporting of any research needs to provide arguments for methodological choices and descriptions of methodological methods and procedures (sampling, methods, sequencing, priority, data analysis techniques, limitations, and ethics). This is an area of major concern.

META-INFERENCE

The meta-inferences reached for this study are best discussed through reference to the overarching research question:

RQ1: What evidence exists to gauge the **use, quality and acceptance levels** of mixed methods research within management based research?

The results of this research indicate that mixed methods is being utilised in business and management research. It appears to be more common in certain discipline streams (management education and development and research methods) however these findings need to be tempered with the fact that certain business and management fields have strong quantitative traditions, as noted earlier. Mixed methods is beginning to be discussed and utilised within management publications (*Administrative Science Quarterly; Information Technology, Learning and Performance Journal; Strategic Management Journal; International Business Review; Journal of International Business Studies; Journal of World Business; and Management International Review*) and forums (ANZAM, 2007 conference). It would appear that the acceptance of mixed methods across business and management disciplines is approaching the minimal level of acceptance, as described by Creswell and Plano Clark (2007). Further evidence needs to be collected and future research is planned through an international multidisciplinary team focusing on specific business and management disciplines.

The issue of quality in mixed methods studies is a concern. The lack of explicit rationales for using a combination of methods and the lack of acknowledgement of mixed methods literature and its theoretical and methodological foundations maybe indicative of the contemporary nature of the mixed methods movement and the relatively early stage of its evolution. However, there is a growing danger that those who utilise mixed methods without at least acknowledging this body of work will be found deficient. This

deficiency is applicable to research students, early career researchers, established researchers and journal editors and reviewers alike. It has particular relevance to those charged with the responsibility for research training within their respective institutions of higher education. Utilising mixed methods without presenting a rationale or acknowledging a significant body of research and methodological development will not be something that is tolerated in the future. This has direct implications for building the research capacity of business and management researchers and points to the need for specific mixed methods research training and the inclusion of mixed methods in higher degree research training curricula.

Undertaking mixed methods provides researchers with opportunities but also involves risks and challenges. These challenges relate to resources, research method skill sets, technical and computing tools and expertise and the politics of paradigms and publishing. Molina-Azorin (2009, p. 55) makes the following practical and applied points in reference to considerations for novice researchers first embarking on a mixed method study:

Novice researchers must know that mixed methods research requires more resources and time than studies that use only a single method. In addition, mixed methods research requires that researchers develop a broader set of skills regarding both types of research (quantitative and qualitative). However, knowledge about mixed methods research can stimulate a researcher to define and analyse innovative problems and research questions.

Teddlie and Tashakkori (2003, p. 45) referred to the need for mixed methods researchers to be 'methodologically bilingual': skilled in both quantitative and qualitative research methods. The mixed methods movement has advanced very quickly since this statement was made and it is

asserted here that those embarking upon mixed methods research need to be *methodologically trilingual*. Not only do they need strong grounding in their chosen quantitative and qualitative methodologies and associated paradigms but they also need to be cognisant, knowledgeable and fluent in the theoretical foundations of mixed methods, the specific mixed method methodological issues (research designs and typologies, mixed methods sampling, data priority, implementation and integration) and the quality frameworks that have been developed for mixed methods.

There are two standout publications which provide a comprehensive starting point for guiding both new and experienced researchers into the theoretical foundations and practicalities needed for embarking on a mixed methods study (Creswell & Plano Clark, 2007; Tashakkori & Teddlie, 2003). This, in addition to the growing number of mixed methods research texts (and research text chapters) and journals specifically dedicated to mixed methods (*Journal of Mixed Methods Research*; *International Journal of Multiple Research Approaches*; *International Journal of Mixed Methods in Applied Business and Policy Research*) provide the theoretical foundations and literature from which mixed methods research training could be developed. Several mixed methods courses are currently available in a number of universities in the US for specific disciplines and mixed methods capacity building has been undertaken by the Economic and Social Research Council (ESRC), the funding body for doctoral training in the UK.

CONCLUSION

This study has utilised a mixed methods approach for the stated purpose of achieving a more complete, illustrated and enhanced response to the overarching research question posited. The study adopted a multistrand mixed model research design and the sample, data collection and analysis for each strand has been documented. Integration has been achieved at the conceptualisation and inference stages. Limitations between

comparing various forms of academic publications were noted, as was the lack of comparative data from the monomethod studies in the sample (pure quantitative and pure qualitative papers). The study has provided greater insights into the phenomenon being studied than would a single method or monomethod study. As a result a more complete picture has emerged with the qualitative data analysis illustrating and enhancing the quantitative data analysis of the qualitative data. Mixed methods is being utilised across business and management disciplines and appears to be entering a minimal level of acceptance. However, the quality of the mixed methods studies as represented in the sample, is a point of concern. Further evidence needs to be collected and future research is planned for discipline clusters of business/management research through an international multidiscipline research team. The focus will be on the following disciplines: human resource development; human resource management; operations management; marketing and project management.

Business and management schools will need to acknowledge the growing imperatives for mixed methods research training and capacity building through the introduction of workshops, seminars, special interest groups and courses in mixed methods. This in itself will present challenges of a fierce and entrenched paradigmatic nature and the more general challenges that surround the introduction of change and innovation (sciences very familiar to business and management disciplines). Creswell et al. (2003, p. 629) acknowledge the many dilemmas and challenges faced by what they refer to as the 'first generation' of faculty that master and teach mixed methods research. This paper calls to those 'first generation' faculty within the business and management fields to begin to take opportunities for instigating change and innovation in relation to the building of mixed methods research capacity within their respective schools/faculties, through professional linkages and academic memberships and associated forums.

It is important for individuals who accept the challenge of teaching a mixed methods course to recognize that the study and teaching of mixed methods is unfamiliar territory to most faculty. ... As new and more complicated designs are introduced into the literature, we need to know how best to teach these designs and how students can practice them to effectively become good mixed methods researchers. (Creswell et al., 2003, p. 633)

In addition to these challenges and imperatives is the need to educate traditional monomethod researchers on the quality and methodological frameworks being developed within mixed methods so that the supervision, mentoring and reviewing of research within the business research community is balanced, expansive, and inclusive. The increasing use of web 2.0 and information communication technologies in data collection and analysis, the growth in diverse forms of interdisciplinary research and the rise of mixed methods are heralding a new era in research skill sets and mindsets. The business and management researcher of the future will need to be much better equipped to: conduct; report; publish; teach; supervise; mentor; lead; review; edit; and examine research in this new era.

In conclusion the research makes the following four key recommendations. Firstly, the introduction of training activities and courses to build mixed methods research capacity. Secondly, the active encouragement of multimethod and multidisciplinary research teams which have the potential to create innovation synergies ready for the challenges of tackling large and complex management research problems and phenomenon. Thirdly, changes to academic promotion and reward structures that encapsulate methodological bilingualism and trilingualism. And finally, the development of more inclusive journal editorial policies that explicitly encourage the use of mixed methods and balanced reporting of both the quantitative and qualitative data from mixed methods studies along with quality

criteria frameworks for reporting mixed methods studies.

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Received 30 September 2010 Accepted 16 October 2010

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