**An Essay on the Rigor and Relevance Debate in Organizational Mixed-Methods Research**

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**Abstract**

Over the past few years interest in mixed-methods research in organization studies has grown rapidly. Yet the issue of rigor and relevance in this respect has received little attention. Rigor and relevance are two interrelated aspects of a scientific research which respectively represent theoretical and practical significance of the study. Hence they are critical dimensions of research design and conduct both in applied sciences such as social science and multidisciplinary fields such as organizational study. Although debate on these aspects in qualitative and quantitative research has received remarkable attention but the mixed-methods approach seems to be relatively underemphasized or at best being addressed inconclusively. Therefore, this essay aims to address this deficiency by incorporating methodological issues into mixed-methods approach from the perspective of organizational studies. The intention of this essay is to address the question of ‘how can studies applying mixed-methods design be seen rigorous and relevant?’ To this end, instances from exemplary research will be illustrated and discussed. Subsequently an integrative methodological approach in the form of a practical framework will be presented.

# Introduction

Bridging rigor and relevance has become a major issue in academic literature. However this field of inquiry still remains largely ambiguous .Considering this deficiency, this essay aims to contribute to this issue by extending rigor-relevance debate to the mixed-methods research from organizational and management perspective. It is assumed that this approach would provide valuable insights into design and conduct of mixed-methods research as an increasingly significant methodology. It is, thus, the intention of this essay to help researchers produce research that is both theoretically rigorous and practically relevant for applied social sciences such as organization and management. This essay builds upon a review and analysis of past debates on rigor and relevance and its synthesis with the design of mixed-methods research. It is then accompanied by a number of exemplar studies in order to illustrate how certain aspects f this debate has been employed in prior research.

More specifically, there is a substantial body of literature discussing how a research can satisfy both requirements of being methodologically rigorous and practically relevant (Brewer,1985; Shrivastava, 1987; Palmer, Dick, and Freiburger, 2009;Nicolai, Schulz, and Göbel, 2011). This debate tends to remain unsettled due to a number of issues: Firstly, majority of research addresses problems in literature which are not informed by practical problems (Daft and Lewin, 2008). Secondly, academic researchers basically have tendencies to pay attention to theoretical rather practical side of their research. Thirdly, journals have either traditionally focused on promoting rigorous research or promoting relevant research and thus causing a gap between theory and practice and finally there has been little collaboration between academicians and practitioners (Bartunek,2011).Simply, cross-pollination of research between university and industry. On the same ground, it can be argued that research that is theoretically useful is largely assumed to be practically under-focused and vice versa (Learmonth, Lockett, and Dowd, 2012). However, at the same time there is a growing belief in this notion that, research that is not informing practice is an anachronism (Biggs, and Büchler, 2007).

 Recently there has been a surge of attempts to reconcile these issues and alleviate the tension between developing research that is simultaneously rigorous and relevant (Church, 2011; Small, 2005; Nicolai, Schulz, and Göbel, 2011). This expansive body of literature shows that rigor and relevance aspects of both qualitative and quantitative methods have been receiving a considerable deal of attention. However, mixed-methods research appears to be underemphasized. We argue that due to the increasing interest in mixed-methods design time is ripe for addressing rigor and relevance in mixed-methods research. We hence attempt to contribute to this gap by this study. This intention is driven by two rationales: first, a mixed-methods research employs both qualitative and quantitative research techniques, each of which has different implications for rigor-relevance debate and secondly, mixed-methods research is being increasingly used by scholars. It must be noted that the scope of our study is limited to the organizational research. However, we hope our analysis spawn generalizable insights into this debate. We believe that the current study can serve as an early effort to enhance understanding, design and conduct of more effective mixed-methods research.

Towards this end this essay is organized as follows. We begin by an overview of what rigor and relevance debate has recorded over the past few years. We then proceed by discussing what generally mixed-methods research is and why rigor-relevance debate matters in design and conduct of a mixed-methods research. The essay is then concluded by proposing some implications for research design based on a simple guideline for novice researchers.

# Rigor and Relevance

Social science has generally been regarded as an applied discipline which provides a tremendous deal of insights into economics, business and management, psychology, politics and many other fields of research (Kuper and Kuper,2005). This role necessitates researchers to produce knowledge that is both scientifically testable and reliable and practically relevant for those who apply it. The first part refers to rigor of the research and the second is generally concerned with relevance. In language of rigor-relevance research a good research is characterized by being good to theory and good for practice. However, there are three distinctive areas of contention. First, some scholars prioritize relevance over rigor by asserting that that being good for practice is more important than being good for theory. On the contrary, some argue that bad theory is harmful for practice. So rigor must be given the priority and finally there is a growing group of scholars who argue that, there must be a balance between rigor and relevance (Thomas et al. 2011). This is the intention of the present study to follow the last fashion simply because we believe that, a research must simultaneously inform practice and advance theory. Although the description of what rigor and relevance mean seem to be simple and short but they carry very complicated meanings which have confused both scholars and practitioners for years. The confusion is caused basically by enduring questions such as “what is a scientific testable research?” or “how can we ensure that this research is useful for practitioners? As noted, the former question captures the essence of rigor and the later relevance.

Literature shows that scholars have tried to address the first question by using what is generally known as “philosophy of refutation” (Popper,1989). According to Popper, a scientific research must be refutable or simply testable. This implies that a scientific research must follow transparent and clear procedures and explanations which allow others to retest its claims. Furthermore, a research becomes re-testable when it addresses a general population. Therefore refutability requires reliability of methods in a research and also its generalizability. This dogma has led to a notion that equates rigor with refutability. To be refutable a research must be reliable and valid. Reliability refers to consistent and systematic variance of a measure by which the phenomenon of interest is analyzed (Schwab, 2005). Therefore, a measure is reliable when it shows consistency in results. Reliability is a necessary component of refutability but it is not sufficient because it does not show whether results reflect what we want to measure. In other words, it does not demonstrate the accuracy of results (Schwab, 2005). The accuracy of results can be assessed through validity. Validity addresses whether results capture what has been conceptually defined and meant to capture. Put simply, it shows whether data collected show a true picture of what is being studied (McNeill, and Chapman,2005).

Given this brief explanation, it is perceivable that type and method of data collection influence reliability and validity because the nature of data and subsequent analytical methods in qualitative research is different from quantitative. As a result, reliability and validity have been addressed differently in qualitative and quantitative studies (Gibbert, and Ruigrok, 2010; Dubé, and Paré, 2003). This difference can be attributed to the underlying philosophical orientation of these two types of research (McNeill, and Chapman, 2005). Accordingly the view of reality (i.e. phenomenon of interest) and methods of describing it determine why reliability and validity in quantitative studies are different from qualitative ones. It is not within the scope and primary intention of this study to engage in this philosophical debate. However, for the sake of our flow of thoughts a brief comparison between quantitative philosophy (positivism) and qualitative (naturalism or post-positivism) is illustrated below (table1).

Table 1: philosophies in social science

|  |  |  |
| --- | --- | --- |
|  | **Positivism** | **Post-Positivism ( Naturalism)** |
| **Philosophical Logic** | reality is single, tangible and independent of the researcher | realities are multiple, constructed and its constriction is impacted by the researcher ( observer)  |
| **Primary Design**  | Constancy across time and space, study of samples and populations, It is generalizable.Reality is not context-specific.Representativeness of sample to the population.  | Different realities shape across time and space, non-generalizability as different Interoperations of a reality exist. Reality is context-specific.Researcher reflexivity as a central part of reality.  |
| **Data Collection and Analysis** | Deduction using mathematics and analysis. | Induction using interpretations of patterns.  |
| **Inference ( Causality)** | Real causes can be assessed and distinguished from effects. Mechanistic causality. | Causes and their context form simultaneously and are mutually dependent so their can not be separated and distinguished. Humanistic interpretive causality.  |

**Source: Lincoln and Guba, (2000)**

Having considered these two philosophical orientations, scholars in quantitative research have suggested that singularity of social reality in quantitative studies requires statistical assessment of reliability and validity however multiplicity of social reality in qualitative studies necessitates interpretive power of researcher ,as a mediator between reality and research results, in showing reliability and validity (Easterby-Smith, Golden-Biddle, and Locke, 2008;Easterby-Smith, Thorpe, and Jackson, 2008). As a result, in addition to the traditional aspects of reliability and validity defined and used in quantitative research such as internal and external validity and measurement reliability, scholars have debated qualitative-based indicators of reliability and validity that are deemed necessary for qualitative studies following its pluralistic view of social reality and interpretive role of the researcher (Yin, 2003; Riege, 2003). For instance, it has been argued that a rigorous qualitative research must not only comply with traditional criteria of validity and reliability but also it has to be: (1) transparent, (2) trustworthy, (3) authentic, (4) transferable, (5) confirmable and (6) dependable (Riege, 2003).

Accordingly, transparency refers to clarity in describing the research process. In other words, researchers are required to provide their audience with a thorough description of the steps taken in conducting their research. Hence, technically transparency accomplishes two main things. First, “if others want to replicate the research to see whether they achieve similar results, they can. Second, it enables readers to assess whether the method chosen was the most appropriate for answering the chosen research question” (Saumure and Given, 2008:795). Trustworthiness refers to the competences of the researcher in collecting and analyzing data and hence can be tested by verification and validation procedures of research from design to conduct (Patton, 2002:570). This shows that, trustworthiness is always open-ended and negotiable (Seale, 1999).

Given the overarching nature of trustworthiness, it is most likely to be properly attained by assuring transferability, credibility, dependability, and confirm-ability (Given and Saumure, 2008:895). Amis, and Silk, (2008) endorse this approach and state that, trustworthiness is incumbent upon the actions and commitment of the researcher. In this sense, trustworthiness of a research is demonstrated in a set of actions including member checking and prolonged field engagement (credibility of the researcher), provision of detailed descriptions of findings to allow creation and dissemination of various insights (transferability), documenting of detailed explanations of methods and tools (dependability) and finally provision of a reflexive self-critical account to expose inherent biases (confirm-ability) (Amis, and Silk, 2008:464). These four criteria of trustworthiness are key factors in an interpretive research (Lincoln and Guba, 1985) and the detailed description and explanation of methods in this chapter are aimed to enable this research to attain trustworthiness.

Authenticity in a qualitative research shows its genuineness and credibility (Guba and Lincoln 2005). Authenticity generally involves in shifting away from concerns about the reliability and validity of research to concerns about research that is worthwhile and thinking about its impact on the community (James, 2008:145). In this context, a qualitative research must be fair which means it must provide equal access of participants to the research inquiry to avoid bias (Guba and Lincoln 2005:195). This fairness is attained in this study by providing a symmetrical cluster of open and strong relationships with all interviewees and making them sure that they can get summary of results as previously addressed in the ethical considerations and data collection sections. Other aspects of authenticity in qualitative research are its ontological and educative dimensions (Guba and Lincoln 2005:200). An authentic research must provide grounding for a better understanding of social context as well as appreciation of other’s viewpoints through its process (James, 2008:145). This research creates this atmosphere by adopting a two-way communicative channel with participants and embracing an open dialogue approach before, during and after interviews as well as sharing of the findings and research analyses with both “the enterprise connect” and the participants. Having explained different dimensions of rigor in quantitative and qualitative research it can be concluded that assessment of research rigor depends on its philosophical doctrine (Riege, 2003).

Relevance, on the other hand, is a general concept that refers to the practical significance or of a research (Nicolai and Seidl, 2010). A relevant research is found valuable and useful for practitioners and stakeholders on the research project. Practitioners are broadly defined as all those who make recommendations about people in organizational setting or assist those who do so . Stakeholders are also policy makers and, of course, society at large (Aguinis, et al. 2010). Since any research project has its own primary stakeholders including a particular group of practitioners defined by the context of the research (Aguinis et al. 2010). In accordance with this notion, Nicolai and Seidl, (2010) argue that relevance must be addressed through the lens of decision makers as primary practitioners. They further describe relevance as: “any kind of knowledge would be considered ‘relevant’ to management practice to the extent that it makes some kind of difference to decision making — whatever that difference might be. Hence, the term ‘relevance’ as such does not imply a particular kind of difference; the difference that particular scientific knowledge might make to management practice might even be the same that certain religious beliefs or cultural norms might make” (page,1263). In addition, they propose three types of relevance: (1) Instrumental relevance which shows how the research can be used by practitioners as a schema to enhance understanding, developing categories or as a recipe or technological rule for optimizing policies and informing decisions or as a device to make more effective predictions. (2) Conceptual relevance which can be used a linguistic means, metaphors or concepts to enhance thinking, communication and decision making or as tools to uncover contingencies or causal relationships which improve perception and understating of side-effects respectively and finally, legitimative relevance which serves as a device to credentialize or as a rhetoric device to expedite diffusion of knowledge amongst practitioners.

Table 2: types of Relevance and their relations with rigor

|  |  |  |
| --- | --- | --- |
| **Instrumental Relevance** | **Conceptual Relevance** | **Legitimative Relevance**  |
| **Relation With Rigor** | mostly a strong trade-off | no trade-off but compatibility | initially compatibility and later trade-off |

We reason that, relevance of a research can be basically judged through its contributions to these areas as perceived by the specific stakeholders of the research. This argument forms the foundation upon which we develop our arguments for the relevance in organization and management mixed-methods research.

# A Glance at the Realm of Organizational Mixed-Methods Design

## Arriving at a definition for Organizational mixed-Methods Research

Organizations are complexly coordinated social systems (Noteboom,2009). This complex coordination implies that organizations have multiple purpose and goals for which they need to coordinate numerous activities (Simon, and March, 1958). Social system indicates that organizations are socially constructed entities that are influenced by and influence societies (Noteboom,2009). The purpose of any organization is to achieve its goals by coordinating people it is comprised of (Simon, and March, 1958). Research in organizations mostly concerns with how organizations achieve their goals. Organizations attempt to achieve their goals in order to survive and grow effectively (Simon, and March, 1958). Scholars in organization science have particularly sought to understand how people contribute to the survival and growth of their organizations (Easterby-smith, et al. 2008; Gill, and Johnson, 2002). In sum following this line of reasoning we define organizational research as any inquiry about formation, survival and growth of organizations. Its domain involves field such as how organizations are formed in entrepreneurship, how they change and grow in strategic management and what role people play in these phenomena in organizational behavior, design and finally how organizations impact societies and are impacted by societies within the discipline of sociology and organizational anthropology. This definition is consistent with the multidisciplinary, vast and rich nature of organizational research.

Given the above nature of organizational research, scholars can employ a wide variety of research techniques to advance understanding of organizations. Qualitative and quantitative designs have been predominant schools (Brewerton, Milward,2001;Gill, and Johnson,2002). However, a growing interest in mixed-methods is noticeable (Molina-Azorin,2011a,b). Mixed-methods design is a specific class of methods that purports to generate rich insights into organizations by synthesizing qualitative and quantitative approaches and creating a synergistic model of knowledge creation (Tashakkori, and Teddlie, 2010). Accordingly we define organizations mixed-methods research as inquiries about organizations (formation, survival, change, evolution, growth and death) using mixed-methods design. This study intends to explain how researchers can design and conduct mixed-methods studies which are both rigor theoretically for scholars and relevant to practice and valuable to practitioners.

## Overview of mixed-methods research design

Mixed-methods or multi-method research is a type of research design which uses both quantitative and qualitative methods of data collection and analysis purposefully. According to Andrew, and Halcomb, (2009) mixed-methods research is a form of inquiry that can be seen as both methods and methodology; as a methodology it is premised on the philosophical assumptions of pragmatism that guides directions of data collection, analysis and mix and as a method it involves techniques of collecting and analyzing both quantitative and qualitative data. The significance of this design is reflected in its logic that, qualitative and quantitative methods of data collection and analysis are viewed as complementary rather than as rival camps (Jick,1979;Creswell,2009). In other words, a mixed-methods research has advantages of both qualitative and quantitative mono-method designs such as ability to simultaneously provide generalize-ability and context-rich specificity (Hesse-Biber, 2010) while providing a synergistic findings which generate in-depth insights into generalize-able findings (Tashakkori, and Teddlie, 2010).

Mixed-methods design is increasingly used in different disciplines such as nursing (e.g. Doyle et al. 2009;Andrew, and Halcomb, 2009), psychology (e.g. Dures et al. 2011) social science (e.g. Onwuegbuzie, and Collins, 2007;Tashakkori, and Teddlie, 2010) ,accounting (e.g. Brown, and Brignall, 2007; Loo, and Lowe, 2011)and organization studies (e.g. Migiro, and Magangi, 2011;Molina-Azorin,2011a,b). This surge can be attributed to the abilities of this design in generating a better understanding of research problems (Molina-Azorin, 2011a). It is in particular important for situations where little or no prior work on the constructs and processes under investigation is available therefore a mixed or hybrid use of qualitative and quantitative data can enhance understanding of the phenomenon (Edmonson and McManus, 2007). Aguinis et al. (2009) endorse this notion and state that further research using mixed approached in organization and management is warranted due to its potential to create a richer picture of the organizations .However, despite these merits a mixed-methods research requires a careful conduct as it goes beyond a simple mix of a qualitative and quantitative studies (Creswell,2009; Tashakkori, and Teddlie, 2010). Therefore we overview its conduct and explain further its operationalization in the context of this study.

# How a mixed-methods design is generally conducted

The process of conducting a research based on a mixed-methods design is more complicated, timely and costly compared to mono-methods research (Creswell, 2009; Molina-Azorin, 2011a, b). Two key choices are to be made purposefully in a mixed-methods research to manage these difficulties; first the collection of timing of data collection as concurrently or sequentially and second is the priority given to the qualitative and quantitative parts in analysis, mix and interpretation of data which can be skewed towards either of qualitative or quantitative phases or being equal (Creswell, 2009;Andrew and Halcomb,2009).

These choices influence methods of data collection, analysis, integration and interpretation by which qualitative and quantitative data complement each other to provide a bigger picture of the research problem. For instance a qualitative-dominated design is in essence exploratory and a quantitative-dominated is explanatory ([Johnson, Onwuegbuzie, & Turner, 2007](#_ENREF_4)). The below table schematically illustrates different types of mixed-methods design.

Table 3: typology of mixed-methods research

|  |
| --- |
| **time** |
|  | **Concurrent (Simultaneous Collection of Data** | **Sequential**  |
| **Priority** | qualitative dominant | QUAL+ quan | * qualitative phase first: QUAL-quan
* quantitative first: quan-QUAL
 |
| quantitative dominant | QUAN+qual | * qualitative phase first: qual-QUAN
* quantitative phase first: QUAN-qual
 |
| pure mixed or equal priority  | QUAL+QUAN orQUAN+QUAL | QUAL-QUAN orQUAN-QUAL |

 To explain these choices, firstly an overview of the research paradigm and philosophical underpinnings of the mixed-methods design is given. This approach is consistent with the suggestions of Easterby-Smith et al. (2008) and Creswell, (2009) in which it is argued that, understanding of research philosophy inform the proper selection and conduct of the design of the research.

## Philosophy in Mixed-Methods

Mixed-methods research is based on the pragmatism philosophy (Creswell,2009). In this view the underlying presupposition is that, instead of methods the research problem is most important for researchers and thus they use all approaches to explore and explain it (Creswell,2009). Further, pragmatism has been increasingly receiving attention in organization and management research due to its potential to inform practice-centered perspective of the research (Brandi and Elkjaer,2008:170). Main assumptions of a pragmatic research design are (Creswell,2009):

1. Pragmatism is not committed to any system of philosophy. This applies to mixed-methods research in those assumptions when using and engaging in different methods.
2. Individual researchers have a freedom of choice of methods, techniques and procedures that best meet the needs and purpose of the research problem.
3. Pragmatism does not see the world as an absolute unity. So mixed-methods researchers can look to different approaches for collecting and analyzing data rather subscribing to only one (i.e. mono-method design).
4. Truth is not based in a strict dualism of mind and reality so mixed-methods research based on pragmatism use both qualitative and quantitative methods to provide the best understanding of a research topic.

So in mixed-methods research, pragmatism opens doors to multiple methods, worldviews and different assumptions about data collection and analysis. It has been even argued that pragmatism represents a new paradigm which not only explains epistemology, ontology and axiology but also enables use of mixed-methods (quantitative and qualitative data collection and analysis) (Morgan,2007;Feilzer,2010). In this regard, Morgan, (2007) argues that through a pragmatic approach a research can mix induction and deduction to make inferences, and see the social reality from a different lens (i.e. inter-subjectivity) and generate findings with are transferable as being both generalizable and context rich. Within this view a mixed-methods is able to synergize qualitative and quantitative findings in order to create a richer pictured of a phenomenon.

Table 4: mixed-methods paradigm

|  |  |  |
| --- | --- | --- |
| **Qualitative Approach** | **Quantitative Approach** | **Pragmatic Approach**  |
| **Connection Of Theory And Data** | Induction | Deduction | Abduction or inductive and deductive mix |
| **Relationship To Research Process** | Subjectivity | Objectivity | Inter-Subjectivity  |
| **Inference From Data** | Context | Generality | Transferability |

**Source: Morgan (2007), Page71**

# Rigor and Relevance in Organizational Mixed-Methods Research

## Rigorous and relevant mixed-method research

Rigor must be basically seen from a vantage point which takes two key aspects of a research; methodological and theoretical (Palmer et al. 2009).Methodological rigor refers to the systematic collection and analysis of data whereas theoretical rigor is about development and/or evaluation of new theoretical ideas (Hambrick, 2007). Both of these two types derive relevance as they are based on systematic collection and analysis of empirical data (Palmer et al. 2009). Furthermore, as Saumure and Given, (2008:795) assert, there are a number of features which show the rigor of a qualitative research including transparency, or credibility, or dependability, comparativeness, and for quantitative research the validity and reliability. These criteria were explained previously. So unlike mono-methods research, in a mixed-method organizational research rigor can be achieved by a careful and systematic attention to validity, reliability in both qualitative and quantitative sections regardless of their order and dominance. In other words, a mixed-methods study can be deemed rigorous only when it is (1) qualitatively rigorous and (2) quantitatively rigorous. This consistency assures its methodological and theoretical rigor.

So, design of a rigorous mixed-methods research goes beyond simple collection of qualitative and quantitative data. The researchers must take a number of issues into considerations: (1) quantitative data and analysis must comply with criteria of reliability and validity in quantitative design. (2) Qualitative data and analysis must meet criteria of a rigorous qualitative study (transparency, credibility, etc.) (3) These two sets of criteria imply extra time, broader methodological knowledge and extra effort. (4) Extra effort, time and knowledge necessitate planning and commitment. (5) When planning is managed and required commitment was made a mixed-methods research would yield theoretically robust knowledge. In addition, it also is mostly likely to render practically relevant knowledge.

It mixed methods design it can be enhanced through reflexivity. reflexivity is broadly referred to the epistemological reflexivity of the research in which the researchers are required to ask questions of their methodological decision making and are encouraged to think about epistemological decisions regarding the research and its findings(Dowling, 2008:747). The significance of reflexivity is mainly resulted from the abductive reasoning (move between quantitative and qualitative analysis of data) and pragmatism paradigm of mixed-methods in which notion of social reality is complex and knowledge-creation methods are sophisticated. So, the researcher must be reflexive epistemologically in order to reinforce and justify the reliability and validly of findings. To do so, the underlying assumptions of pragmatism and its methodological framework must be kept consistently throughout data collection and analysis processes by the researcher in order to avoid epistemological deviation. Adoption of this method is enhanced by keeping a journal to assist understanding of prior assumptions, beliefs, and attitudes (ibid).

In addition, it must be noted that, achieving reflexivity is not a straightforward endeavor as it requires consistent examination of procedures at each stage of the research process based on the methodology adopted (Dowling, 2006; Mauthner, and Doucet, 2003;Dowling, 2008:748).So, to assure the reflexivity of the research, researcher can frame a summary of research methods in prior studies across both qualitative and quantitative approaches to firm a personal journal for employing paradigmatic view and ran a constant checking of all process involved in data collection and analysis. This summary in addition to the journal of assumptions provided a framework for maximizing reflexivity of the research.

Therefore when a mixed-methods research is theoretically and methodologically rigorous the researcher can maximize the relevance of the research through reflexive methods as explained. It leads us to a simple approach towards generation of relevant knowledge.

## Relevance

As noted earlier, rigorous research brings about relevant findings (Palmer, et al. 2009). This indicates the extent to which research material and procedures pertain to what people actually do in the real context (Brodsky, and Welsh, 2008:18). We pointed out that reflexivity would enhance this process. Relevancy of a mixed-methods research from this view can further promote the dissemination of successful practices (Lee, 1999). In addition, as noted earlier the mixed-methods approach employs pragmatism which embraces the realist doctrine and assumes that reality does exist. So, on the one hand a relevant research must show how it has been built upon available theories through methodological and theoretical relevance (Brodsky, and Welsh, 2008:18) which correspond with theoretical and methodological rigor (Palmer, et al. 2009) and on the other hand, demonstrates how it bridges the gap between the theory and the stakeholders of the research in its specific context (Starkey, and Madan, 2001). It is methodologically evident that, the former type of relevance is attained through rigor aspects of the research as previously elaborated.

However, the latter type of relevance can be achieved through a set of techniques including: 1) fine tuning reciprocal expectations (Visconti, 2010) in which research participants (executives and employees) are assured to be given a summary of research findings and also asked to provide feedbacks and suggestions on the research openly and freely (as discussed in chapter one in ethical considerations of the research) and chapters four and six on data collection and consent forms. 2) Provision of intensive and easy-to-understand argumentations in order to narrow the theory-practice complexity gap in further studies and finally, 3) presentation of findings and analysis in regional as well as intentional conferences to panel of practitioners and academicians. These two last techniques are adopted based on this note that “relative irrelevance stems from the failure to generate useful research and the failure to effectively transmit useful research to the field’s constituencies (Palmer, Dick, and Freiburger, 2009:265).

To conclude, relevance is attained when results are disseminated to and assimilated by research stakeholders. It requires a close relationship between the researcher and his or her audiences (Visconti, 2010). Having considered the above explanations, in what follows a schematic guideline for rigor and relevance in organizational mixed-method is presented. The purpose of this model is to summarize our discussions on how novice researchers interested in mixed-methods designs can design and conduct studies which are theoretically robust ( rigorous) and practically relevant.

**Relevance**

**Rigor**

**Dissemination of results**

**Assimilation of results**

**Data Collection**

**Data Analysis, synthesis**

Quantitative section

Reliability, validity and additional criteria (transparency, authenticity, etc.)

Quantitative section

Statistical Reliability

Statistical Validity

Relationships with audiences

Reciprocity

Easy to understand arguments

Proactive publications

Figure 1: a schematic models of rigor-relevance debate in mixed-methods

We hope our models can inform as a simple instruction for novice researchers and enhance their understanding of rigor and relevance in mixed-methods design. Accordingly it is perceivable that our suggestions as summarized in the illustration are not limited to concurrent or sequential, and qualitatively or quantitatively dominated mixed-methods design. We consequently, encourage mixed-methods studies in different areas of organizational research as a vast and expanding realm. Furthermore, it can be assumed that rigor and relevance can be bridged and indeed mixed-methods design on the basis of a pragmatist view can serve as a fruitful ground for harvesting studies which are both rigorous and relevant providing adequate preparation, and a careful planning of time, effort and commitment by researchers.

# Concluding Remarks

This study attempted to contribute to the debate on the rigor-relevance schism in social science and particularly mixed-methods design. An overview of rigor and relevance literature was offered and some suggestions for mixed-methods design were developed. Accordingly mixed-methods research in organization and management was analyzed and finally several implications for researchers were presented.

# References

Aguinis, H., Pierce, C. A., Bosco, F. A., & Muslin, I. S. (2009). First Decade of Organizational Research Methods Trends in Design, Measurement, and Data-Analysis Topics organizational Research Methods, 12(1), 69-112.

Aguinis, H., Werner, S., Abbott, J. A. L., Angert, C., Park, J. H., & Kohlhausen, D. (2010). Customer-Centric Science: Reporting Significant Research Results With Rigor, Relevance, and Practical Impact in Mind organizational Research Methods, 13(3), 515-539

Amis, J. M., & Silk, M. L. (2008). Understanding quality: The Philosophy and Politics of Quality in Qualitative Organizational Research. Organizational Research Methods, , 11(3), 456-480.

Bartunek, J. M. (2011). What Has Happened to Mode 2? BRITISH JOURNAL OF MANAGEMENT, 22(3), 555-558.

Biggs, M. A. R., & Büchler, D. (2007). Rigor and Practice-based Research. Design Issues, 23(3), 62-69.

Brewer, M. B. (1985). Experimental Research and Social Policy: Must It Be Rigor versus Relevance? Journal of Social Issues, 41(4), 159-176.

Brewerton, P., & Millward, L. (2001). Organizational Research Methods: A Guide For Students And Researchers. Thousand Oaks, Ca: Sage.

Caracelli, V. J., & Greene, J. C. (1993). Data Analysis Strategies for Mixed-Method Evaluation Designs. Educational Evaluation and Policy Analysis, 15(2), 195-207.

Church, A. H. (2011). Bridging the gap between the science and practice of psychology in organizations: state of the practice reflections. Journal of Business and Psychology, 25(2), 125- 128.

Daft, R. L., & Lewin, A. Y. (2008). Rigor and Relevance in Organization Studies: Idea Migration and Academic Journal Evolution. Organization Science, 19(1), 177-183.

Dowling, M. (2008). Reflexivity. In L. M. Given (Ed.), The SAGE Encyclopedia of qualitative research methods (Vol. 1&2, pp. 747-748). Thousand Oaks, CA: Sage.

Dubé, L., & Paré, G. (2003). Rigor in Information Systems Positivist Case Research: Current Practices, Trends, and Recommendations. MIS Quarterly, 27(4), 597-636.

Easterby-Smith, M., Golden-Biddle, K., & Locke, K. (2008). Working With Pluralism Determining Quality in Qualitative Research. Organizational Research Methods, 11(3), 419-429.

Easterby-Smith, M., Thorpe, R., & Jackson, P. (2008). Management Research. London: Sage.

Gelade, G. A. (2006). But what does it mean in practice? The Journal of Occupational and Organizational Psychology from a practitioner perspective. Journal of Occupational and Organizational Psychology, 79, 153-160

Gibbert, M., & Ruigrok, W. (2010). The ‘‘What’’ and ‘‘How’’ of Case Study Rigor: Three Strategies Based on Published Work. Organizational Research Methods 13(4), 710-737.

Gill, J., & Johnson, P. (2002). Research Methods for Managers: Third Edition. London: Sage.

Given, L. M., & Saumure, K. (2008). Trustworthiness. In L. M. Given (Ed.), The SAGE Encyclopedia of qualitative research methods (Vol. 1&2, pp. 895-896). Thousands Oaks, CA: Sage.

Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. Educational Evaluation and Policy Analysis, 11, 255-274.

Guba, E., & Lincoln, Y. S. (2005). Paradigmatic controversies, contradictions & emerging confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), The Sage Handbook of Qualitative Research (3 ed., pp. 191-216). Thousand Oaks CA: Sage.

Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a Definition of Mixed Methods Research. Journal of Mixed Methods Research, 1(2), 112-133

Kuper, A., & Kuper, J. (Eds.). (2005). The Social Science Encyclopedia (2 ed. Vol. 1,2). London: Routledge.

Learmonth, M., Lockett, A., & Dowd, K. (2012). Promoting Scholarship that Matters: The Uselessness of Useful Research and the Usefulness of Useless Research. British Journal of Management, 23(1), 35-44.

Lincoln, Y. S., & Guba, E. G. (1985). Naturalistic inquiry. Beverly Hills, CA.: Sage.

Lincoln, Y. S., & Guba, E., G. (2000). Paradigmatic controversies, contradictions and emerging confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), Handbook of Qualitative Research (2 ed., pp. 163-188). Thousand Oaks, CA: Sage

March, J. G., & Simon, H. A. (1958). Organizations. New York: Wiley.

McNeill, P., & Chapman, S. (2005). Research Methods (3 ed.). Madison Ave, New York, NY: Routledge.

Nicolai, A. T., Schulz, A.-C., & Göbel, M. (2011). Between Sweet Harmony and a Clash of Cultures: Does a Joint Academic–Practitioner Review Reconcile Rigor and Relevance? The Journal of Applied Behavioral Science, 47(1), 53-75.

Nicolai, A. T., Schulz, A.-C., & Göbel, M. (2011). Between Sweet Harmony and a Clash of Cultures: Does a Joint Academic–Practitioner Review Reconcile Rigor and Relevance? .The Journal of Applied Behavioral Science, 47(1), 53-75.

Nicolai, A., & Seidl, D. (2010). That's Relevant! Different Forms of Practical Relevance in Management Science. Organization studies, 31(9&10), 1257–1285.

Noteboom, B. (2009). A cognitive theory of the firm: learning, Governance and dynamic capabilities. Massachusetts: Edward Elgar Publishing.

Palmer, D., Dick, B., & Freiburger, N. (2009). Rigor and Relevance in Organization Studies. Journal of Management Inquiry, 18(4), 265-272.

Popper, K. R. (1989). Conjectures and refutations: The growth of scientific knowledge (5 ed.). London: Routledge.

Riege, A. M. (2003). Validity and reliability test in case study research: a literature review with "hands-on" applications for each research phase. Qualitative Market Research: An International Journal 6(2), 75-86.

Saumure, K., & Given, L. M. (2008). Rigor in Qualitative Research In L. M. Given (Ed.), The SAGE Encyclopedia of qualitative research methods (Vol. 1&2, pp. 795-796). Thousands Oaks, CA: Sage.

Schwab, D. P. (2005). Research Methods for Organizational Studies (2 ed.). New Jersey: Lawrence Erlbaum.

Shrivastava, P. (1987). Rigor And Practical Usefulness Of Research In Strategic Management. Strategic Management Journal, 8, 77-92.

Small, S. A. (2005). Bridging Research and Practice in the Family and Human Sciences Family Relations, 54(2), 320-334.

Tashakkori, A., & Teddlie, C. (2010). Handbook of mixed methods in social and behavioral research (3rd ed.). Thousand Oaks, CA: Sage

Thomas, R. W., Defee, C. C., Randall, W. S., & Williams, B. (2011). Assessing the managerial relevance of contemporary supply chain management research. International Journal of Physical Distribution & Logistics Management, 41(7), 655-667

Visconti, L. M. (2010). Ethnographic Case Study (ECS): Abductive modeling of ethnography and improving the relevance in business marketing research. Industrial Marketing Management, 39, 25–39.

Yin, R. K. (2003). Case Study Research: Design and Methods (3 ed.). London: Sage Publications.