## METHODOLOGY IN ACCOUNTING RESEARCH:

A critique of taxonomy

By

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ABSTRACT: In this paper, I argue that the current taxonomy of methodology in accounting research is conceptually inadequate. Drawing from the social sciences, of which accounting is a part, I propose a classification scheme to address this problem. The central theme of this framework is that methodology is not just a single decision in the research process but a series of decisions at the level research purpose, strategy, method and paradigm. My contention is that methodology surveys, several of them recently released will be more fruitful if undertaken at each of these methodology decision levels i.e. strategy should be compared with strategy, method with method and paradigm with paradigm. In essence, a classification scheme that compares (say) an archival or survey method with an experiment is inconsistent with this framework. The framework also points to the need for researchers not only to be aware of but also to be open minded about the diverse methodologies for conducting and evaluating accounting research as well as their strengths and limitations. Ultimately, the selection of research methodology should be driven primarily by the research question: a theory-testing research requires a theory-testing methodology, a theory-generating research requires and theory-generating methodology.

Key words: empirical research, method and methodology, research design, research methodology, research model, taxonomy of methodology.

#### METHODOLOGY IN ACCOUNTING RESEARCH:

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Overturning the null leads to fame

Where empirical work is the game.

But classes of such

Won't be worth very much

If taxonomy's viewed with disdain.

- Johnson (1972: 64)

## 1. INTRODUCTION

A number of academics have devoted substantial time and effort to surveying trends in research methodology in the field of accounting. For example, Oler et al (2010) examined articles published in nine accounting journals, some of them as old as 48 years, and assigned them one by one to different categories of "methodology". This is consistent with the methodical ways of accountants. It is in the nature of accountants to want to monitor trends - trends in key accounting ratios, trends in budget performance, trends in research methodology etc. Through a survey, we can know which methodology is in vogue and we can then proceed to analyze its contributions to our knowledge relative to others. Coyne et al (2010), Stephens et al (2011) and Pickerd et al (2011) have also recently ranked accounting faculty and research programs by topic and methodology using methodology surveys. As laudable as these efforts are, one is surprised about the

lack of debate among accounting academics as to whether the existing taxonomy correctly represents the logic of what they do in their research endeavours.

A key finding from various surveys that is corroborated by journal editors' annual reports and which for quite some time has been generating ripples within the academic arm of the profession, is that accounting research is dominated by the archival/statistical "methodology" (Searcy & Mentzer 2003; Lukka & Kasanen 1996; Kachelmeier 2009; Bouillon and Ravenscroft 2010; Coyne et al 2010; Oler et al 2010; Stephens et al 2011). Oler et al (2010) suggest that, while the adoption of the archival<sup>2</sup> "methodology" has grown significantly over decades, from the 1960s to the 2000s, the use of other "methodologies", such as experiment, field study and survey have declined. The methodology surveys have tended to focus on top academic journals in accounting with high Social Science Citation Index (SSCI); hence the classifications may be taken as the mainstream view in academic accounting. Nevertheless, several questions remain unanswered regarding the conceptual basis for comparing (say) archival or statistical 'methodology' with laboratory experiment and survey 'methodology' with field studies. Are experimenters precluded from using archival data? Is statistics not a tool for analysing experimental data? If we claim that field studies are underrepresented in journal publications and we separate survey from field research, where else do we look to as the probable reason for this underrepresentation? Is survey not an instrument for collecting data in field research?

<sup>&</sup>lt;sup>2</sup> The word 'archival' is used in the methodology surveys to mean numerical data obtained from data repositories (Oler et al 2010; Coyne et al 2010; Stephens et al 2010) as well as "studies in which the researchers, or another third party, collected the research data and in which the data have objective amounts such as net income, sales, fees, etc" (Coyne et al 2010; 634). Archival research has also been referred to as capital market research (Kachelmeier 2009; Oler et al 2010; Bouillon & Ravenscroft 2010). The definitions thus exclude biographical work in accounting (e.g. Whittington & Zeff 2001) and similar writings in the journals of accounting history which rely almost exclusive on textual archives.

Criticisms range from accounting research being labeled as monolingual in a multilingual world (Chua 1996) to being described as intolerant of other perspectives, irresponsive to the needs of practicing accountants and having little impact on related fields (Reiter & Williams 2002). According to Chua (1996), although the language of numbers as reflected in the empirical/calculative tradition is extremely powerful at overcoming cultural and linguistic boundaries, it is inherently capable of decontexualising the sociocultural and political aspects of the debates represented by these numbers when exclusively or improperly used. Its dominance in accounting graduate education, she argues is due to "(i) the power of inscriptions, (ii) contradictions in post-modernity, and (iii) the perceived 'success' of allied professionals" (Chua 1996: 129). Reiter & Williams (2002) measured impact in terms of the extent to which empirical research as published in top accounting journals is cited in top journals of finance and economics. Based on their analysis of 553 articles published in 1990-91, they found that "economics cites itself most, then finance to a very modest extent and accounting virtually not at all" (Reiter & Williams 2002: 588). In other words, accounting imports more than it exports theories and this, the authors attribute to the parochial approach to the question of methodology in accounting research.

Also, Arnold (2009) has attributed the failure of accounting academics to anticipate the recent global financial crisis, a crisis partly linked to fair value accounting and that triggered capital adequacy issues among financial institutions, to the over-emphasis on the archival "methodology", in that the mass of off-balance transactions that fuelled the crisis was not archived in any publicly available database. Arnold has found support in Kaplan (2011) who criticized his academic colleagues for spending so much time

investigating how fair value impact on capital market without understanding how fair value is determined. Kaplan was actually speaking in the context of the underrepresentation of field research in accounting journal publications.

The discussion so far has thrown up three important issues. The first is the conceptual inadequacy of the current taxonomy of research methodology. The second is the perceived narrowness of methodology in accounting research. Critics insist that mainstream accounting research has focused almost exclusively on the archival methodology. But, is there in the real sense something called archival methodology? And if there is, what are its distinctive evaluative criteria? The third issue is the perceived irrelevance of accounting research or doubts about the usefulness of such research to the practical accounting problems. Although this paper focuses primarily on taxonomy, the three problems are interrelated. The rest of the paper is divided into four parts. In part 2, I discuss the nature and forms of research. In part 3, I explain certain basic terms and concepts in research methodology and then present the current classifications of methodology in accounting research. Finally, in part 4, I propose a framework for classifying empirical methodologies in accounting research.

#### 2. NATURE AND FORMS OF RESEARCH

What is research? Why research? And what forms of research do researchers undertake? These questions are important because there is the continuing tendency to confuse forms of research with research methodology. Secondly, the selection of research methodology is to a great extent determined by the form and purpose of research. Thirdly, these questions are at the centre of the controversy surrounding the perceived irrelevance of accounting research to the practical problems faced by accountants. Miller (1977: 46) argues that it is the perception of accounting research as a monolithic activity "in its thrust, methodology and impact" – "pressing toward a single well-defined and mutually accepted goal" - that fuels the unreasonable expectation from researchers. This feeling of crisis is however not restricted to accounting, for one expert in the field of organizational science had also observed that as "research methods and techniques have become more sophisticated, they have also become increasingly less useful for solving the practical problems that members of organizations face" (Susman and Evered 1978: 582). Yet research projects defer in terms of their approach, the immediacy of their impact on accounting practice, their appeal to academics and practitioners and their channels of publication.

Research according to Kinney (1986: 339) is "the development and testing of new theories of 'how the world works' or refutation of widely held existing theories". It is a "careful or diligent search; studious inquiry or examination; *especially*: investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws" (Merriam-Webster online dictionary). These two definitions reveal that research, including accounting research is (i) both an activity and a process (ii) based on pure logic or examination of facts/data; and (ii) aimed at generating new theories, refuting or revising existing theories and practical application of theories. In essence the

central aim of research is "theory" <sup>3</sup> (Zimmerman 2001). Empirical research seeks to understand and explain natural phenomena by collecting and analyzing data or facts. The fruit of empirical research is empirical theory but empirical science theory emerges only from empirical science<sup>4</sup> research. An empirical research is a scientific research if and only if it fulfils the canons of scientific inquiry<sup>5</sup>. In accounting literature, the term "empirical research" is sometimes narrowly conceptualized as the application of statistical/mathematical techniques to test theories, based on numerical data<sup>6</sup>.

Miller (1977) suggests a classification accounting research into three forms: basic, applied and usable research. A basic or pure research is an empirical or non-empirical research carried out without any specific practical use in view. It does not have to solve any practical problems but only needs to "(i) discover a new problem or (ii) develop a new theoretical approach to solve previously known problems" (Miller 1977: 44). An

<sup>&</sup>lt;sup>3</sup>Theories are conjectures, expressed in words or in mathematical terms that help in understanding, explaining and predicting natural phenomena. They are "nets cast to catch what we call 'the world': to rationalise, to explain and to master it" (Popper, 1959: 37-38).

<sup>&</sup>lt;sup>4</sup> It is difficult to define precisely what science is, except by reference to its goal (Popper 1959; Kerlinger & Lee 2000). The goal of science according to Popper (1965) is to formulate and test hypothesis. He uses the term 'falsification' rather than 'verification' to distinguish between empirical and logical sciences. A theory of logical science, mathematics for example can be verified or proved *quod erat demonstrandum* (Q.E.D) within itself and without reference to the external world but it cannot be empirically falsified. Popper specifies three criteria that an empirical science theory must satisfy. First, it must be synthetic, meaning that it must express some general laws. Second, it must not be metaphysical i.e. it must represent a natural phenomenon. Third, it must be testable.

<sup>&</sup>lt;sup>5</sup> These canons of scientific inquiry are the core of Kerlinger & Lee's (2000: 14) conception of science as a "systematic, controlled, empirical, amoral, public and critical investigation of natural phenomena.....guided by theory and hypothesis about the presumed relations among such phenomena". It is systematic and controlled because it is ordered, disciplined, rigorous and designed in such a way as to eliminate alternative explanations [The word 'rigorous' is used here not in the context of mathematical and statistical techniques but in terms of what Largay (2001: 71) referred to as "thoughtful, well-articulated arguments and logic, and appropriately designed examples, experiments and tests"]. It is amoral because the conclusion is judged by its reliability and validity not by the personal beliefs and values of the researcher. It is public and critical because it has to be peer reviewed to gain the respect of the scientific community.

<sup>&</sup>lt;sup>6</sup> For example, in their survey of methodology in accounting research, Lukka and Kasanem (1996: 759) adopted a definition of empirical research as one that is "explicitly based on primary non-literary data collected for the study in question, covering market-based analyses, questionnaire surveys, case and field studies and laboratory experiments...".

applied research tests solutions to problems and generates theory from current practices, with a view to eventually solving practical problems, though the impact on practice may not be immediate. The third category described as "usable" or "practical" research does not involve expanding or testing knowledge but rather it identifies and disseminates information from basic and applied research that is of immediate value to accounting practice. This classification of accounting research not only broadens the definition of research and expectations from researchers, it also has implications on the design and evaluation of research. It further suggests that all policy initiatives to encourage accounting practitioners to read and transfer research findings to practice (Leisenring & Todd, 1994; Gordon & Porter 2009) should proceed from the premise that some research publications are not intended for practitioners in the short or medium term horizon.

A form of applied research is action research (Avison et al 1999). The term "action research" was coined by Kurt Lewin to describe a form of research involving collaboration between social scientists and practitioners in an attempt to understand a social problem, in his own case the problem of minorities in the United States. The concept has subsequently been expanded in various disciplines (see for example Susman & Evered 1978 and Kaplan 1998). The purpose of action research is both to generate theory and to diagnose and proffer solutions to the specific problems of organizations. In such a situation "research that produces nothing but books will not suffice" (Lewin 1946:35). In accounting, action research often takes the form of academics, consulting for organizations. In Liu and Pan (2007), a study described as action research, the researcher-consultants successfully developed an Activity-Based Costing (ABC) system for a large Chinese manufacturing company but no explicit theory was tested or generated.

Baskerville (1999: 13) attempts to draw a distinction between consultancy and action research by stating that "consultants are usually paid to dictate experienced, reliable solutions based on their independent review" and that "action researchers act out of scientific interest to help the organization itself to learn by formulating a series of experimental solutions based on an evolving, untested theory". Kaplan (1998) however argues in favor of some kind of compensation if action researchers are to be taken seriously by the organizations they are engaged with. Nevertheless, this line of distinction is rather blurred and the question of objectivity in the research process remains an open one, as it is with all participatory forms of researcher has to meet squarely is that he confuses his role as a scientist with his role as a human, social, political and ultimately a religious being, that he ceases to do objective research as he becomes entangled with the world of values". Furthermore, organizations have distinct objectives that they are set up to accomplish, which are not necessarily synchronous with the scientific pursuit of action researchers.

In the field of accounting, phrases such as 'positive research'<sup>7</sup>, 'capital market research' and 'behavioral research' are used to describe forms of research (See for example Oler et al, 2010). The term "positive" or "positivism" originated from philosophy and had been used in economics since Friedman (1953) cited in Kothari (2001) and Christenson (1983). Watts & Zimmerman (1990) use the term "Positive" as a 'label' or 'trademark' to

<sup>&</sup>lt;sup>7</sup> In their paper, Oler et al (2010: 636) classify "archival, experimental, and field study methodologies" as examples of positive research.

identify a form research that focuses on explaining and predicting accounting practice, as distinct from normative research that is prescriptive. Capital market and behavioral accounting research are two of the branches of positive research. Capital market research draws on microeconomic models to test hypotheses about the reaction of securities markets to the release of accounting information (Kothari 2001). Behavioral research studies the behavior of accountants and how non-accountants are influenced by accounting information (Hofstedt & Kinard 1970). Another branch of positive research is agency theory research which studies the problem of information asymmetry and moral hazard in a principal-agent relationship using the economic theory of contracting. In economics, contracting theory dates back to Coase (1937).

A further way of looking at forms of research is through the academic / practitioner lens (Boehm 1980). The distinction between the two is neither about whether the researcher is an academic or a practitioner nor about whether the research is basic, applied or usable; it is about the research model. In other words, academics can undertake usable/practical research just in the same way as practitioners can undertake basic research. Boehm (1980) states that academic research is distinguished by its traditional, structured, natural science model (Appendix Figure 1). It starts by the researcher selecting an area for investigation, reviewing previous studies in the area and using theory from within or outside the field to formulate testable propositions/hypotheses. The researcher then proceeds to design the study, execute the design and analyze the results, ending in a confirmation or rejection of hypothesis. If the hypothesis is confirmed, it remains so tentatively. If the hypothesis is falsified, the researcher develops alternative explanations that may require further analysis or reformulation of the hypothesis.

The practitioner research model (Appendix Figure 2) is not as straightforward as the academic form as exemplified in the numerous stages and multiple interactions among stages of the research process. For example, in the practitioner research model, the focus is on analyzing organizational context/restraint as against reviewing previous research, and on formulating trial solutions rather than hypothesis. However, both models include the research design phase. This paper addresses the design phase of a research, for both the practitioner and academic models.

#### 3. METHOD AND METHODOLOGY

The terms "method" and "methodology" are often used interchangeably. Blaikie (1993: 7) observes the tendency in the literature "to use one when the other is more appropriate" just in the same way as philosophers (e.g. Popper 1965) use the phrase "scientific method" when in fact they mean "methodology". 'Method' is the technique or procedure used to gather and analyse data related to a research question or hypothesis (Blaikie 1993; de Vaus 2001; Bryman 2008; Yin 2009). 'Methodology' is "how research should or does proceed" and it includes "discussions of how theories are generated and tested – what kind of logic is used, what criteria they have to satisfy, what theories look like and how particular theoretical perspectives can be related to particular research problems" (Blaikie 1993: 7). In other words, 'method' is an integral part of 'methodology' and is subsidiary to it.

A related phrase that is used synonymously with "research methodology" is "research design". In fact, Buckley et al (1976) defines one in terms of the other when they refer to research methodology as "the strategy or architectural design by which the researcher maps out an approach to problem-finding or problem-solving". Their framework, one of the early attempts to classify methodology in accounting research, consists of six parts, which are summarized into three broad groups:

- (i) Research problem. The authors propose several methods of identifying researchable problems.
- (ii) Research strategy. They identify four research strategies consisting of nine domains: Empirical (Case, Field, Laboratory experiment), analytic (internal logic), archival (primary, secondary and physical) and opinion (individual and group).
- (iii) Research technique: methods of collecting and analyzing data.

A research design according to Yin (2009: 26) is a "logical plan for getting from *here* to *there*, where *here* may be defined as the initial set of questions to be answered, and *there* is (sic) some set of conclusions (answers) about these questions". It "deals with the logical problem and not the logistical problem" of research (Yin 2009: 27). Between *here* and *there* are important decisions about the research approach, the nature of data to collect, how to analyze data and how to interpret the results in order to ensure than the conclusion addresses the research question. The logical problem is how to ensure the validity of the research findings; the logistical problem is the problem of technique – how data is collected and analyzed. A research design is therefore different from a work plan, which simply lists the activities to be undertaken in the research process and the time

frame for each. It is futuristic, amenable to changes as research progresses and its success or failure assessable in terms of the extent to which the research objective is achieved. It is the basis for evaluating research conclusions.

Suppose for example we want to study the effect of cultural differences on auditors' risk perception and assessment and that we have chosen two countries A and B as our research sites. There are several ways to collect our research data. We may decide to interview auditors in both countries (an interview technique) or review the past audit planning work papers of auditors (an archival technique) or administer hypothetical risk assessment tests (a test and measurement technique). These are the techniques or methods of data collection and each of them is valid under different research strategies. The most critical decision (a strategy decision) is how to eliminate as much of the differences as possible between the research subjects/participants in order to minimize alternative explanations to our research conclusions. In order to address the differences, we may need to enlist only participants with similar years of audit experience, accounting education and audit position in (say) a 'Big 4' international public accounting in both countries. The validity of our conclusion in this research will be judged primarily not by the data collection and analysis techniques but by the strength of our strategy and the logical connection between that strategy and the data collection and analysis techniques. This is why I think the persistent reference to "archival methodology" in accounting research is a misnomer. Embedded in the various journal articles classified as "archival" are research strategies, data collection and analysis techniques as well as philosophical perspectives, the totality of which constitutes a methodology.

The current classifications of research methodology in accounting are presented in Table 1. In total, there are roughly twenty "methodologies": Analytical, Archival, Behavioral, Capital market, Case study, Content analysis, Discussions, Economic modeling, Empirical, Ethnography, Experiment, Field study, Internal logic, Normative, Opinion, Review, Simulation, Statistical, Survey and Theoretical. What we find here is essentially a conflation of empirical (e.g. experiment and case study) and non-empirical (e.g. internal logic and analytical) research strategies; a motley of research strategy (e.g. ethnography and experiment) and data collection (e.g. archival and survey) and analysis (e.g. statistical and content analysis) methods. As de Vaus (2001: 9) correctly pointed out, "failing to distinguish between design and method leads to poor evaluation of designs" in that "the designs are often evaluated against the strengths and weaknesses of the method rather than their ability to draw relatively unambiguous conclusions or to select between rival plausible hypotheses".

At best, the concept of research design used in these classifications is very limited and confusing. Of course social researchers can do surveys and conduct experiments, but surveys are particular methods of data collection and analysis, and the experiment is about selecting groups and timing data collection. Similarly, secondary analysis is mainly about sources of data, observation is mainly about data collection, and content analysis is mainly about coding......hence the first problem with these classifications is that each type of resign design deals with some elements but none deal with them all (Blaikie 2000: 41)

## TABLE 1

Classifications of methodology in accounting research						
udy "Main Methodologies "						
Buckley et al (1976)	Archival / Lab. Experiment / Analytical / Field study / Case study / Opinion /					
Carnaghan et al (1994)	General empirical / Capital market / Behavioral / Analytical & Economic modeling / Discussions /					
Lukka & Kasanen (1996)	Statistical / Lab. Experiment / Field experiment / Case / Case & Statistical /					
Searcy & Mentzer (2003)	Archival / Experiment / Internal logic / Survey / Case / Field study / Content analysis / Ethnography/					
Kachelmeier (2009)	Empirical – archival / Experiment / Analytical / Field & case study / Survey /					
Bouillon &Ravenscroft (2010)	Archival / Experiment / Simulation / Internal logic / Surveys / Cases /					
Salterio (2010)	Archival / Experiment / Analytical / Empirical / Case study / Field study /					
Pickerd et al (2011) Coyne et al (2010) & Stephen et al (2011)	Archival / Experiment / Analytical /					
Oler et al (2010)	Archival / Experiment / Field study / Review / Survey / Theoretical / Normative /					

Although methodology surveys and journal editors' annual reports are potentially useful for monitoring trends in research methodologies, this potential is greatly undermined by the absence of a common classification framework. The convoluted classifications are also partly implicated in the never-ending acrimonious and divisive debate on the methodology of "mainstream (archival) accounting" when in fact we are not comparing "apple" with "apple". Furthermore, since some of the methodology surveys are equally used in ranking accounting research programs, the quality and decision usefulness of certain aspects of such rankings are questionable in the face of methodology classification schemes that are not well grounded, conceptually. Finally, the current state of taxonomy of methodology in accounting research is difficult if not impossible to teach.

#### 4. FRAMEWORK FOR RESEARCH METHODOLOGY

I had earlier identified the two broad classifications of research: empirical and nonempirical. In this section of the paper, I propose a framework for classifying empirical research methodology in accounting. This framework will not eliminate but is expected to minimize the confusion inherent in the current methodology classifications. A broad overview of this framework is presented in Figure 1 below. A more detailed version of the process in Figure 1 is presented in Table 2.



Figure 1 shows that the primary determinant of methodology is the research question. A research question points to the overall purpose of the research, which may be exploratory, descriptive or explanatory. A new field of inquiry typically starts with exploratory studies to find out facts, generate theory and suggest opportunities for future research. This means that an exploratory study may not have a research question (Zimmerman 2001). As the field matures, it becomes descriptive, explanatory and predictive. Nevertheless, a new field may begin by borrowing and testing theories from related fields<sup>8</sup>. In the same way as exploratory studies generate theories, so also do explanatory studies, through theory testing (Zimmerman 2001).

In the proposed framework, a research design/methodology comprises the

- (i) Research approach/strategy;
- (ii) Research method (data collection and analysis techniques); and
- (iii) Philosophical world view underpinning the design.

Although not explicitly indicated in Figure 2 or Table 2, a research must also address the validity question in the context of the strategy and method. However, this is not directly discussed in this paper.

<sup>&</sup>lt;sup>8</sup> As Zimmerman (2001: 423) observed, "the empirical evidence from the last 40 years indicates that with few exceptions, most accounting research innovations have their conceptual roots in economics". "Positive" research in accounting, including agency and transaction cost theories had its roots in economics. Also behavioral accounting research is grounded in psychology.

TABLE 2: EMPIRICAL RESEARCH METHODOLOGY FRAMEWORK											
Purpose		Exploratory			Descriptive						Explanatory
a	n			NON-EXPERIMENTAL							
:h / Strategy		EXPERI	EXPERIMENTAL		Long	itudin	al			Cross-Sectional	
					F	ield-E	Based				
		Quantitative		Qualitative					/ 2	Quantitative	
										hes	Field & non-
	oai	t 、	÷		λu					oac gies	field Based
	ppr	ien	leni		hec	>	ics			opr iteβ	
	A م	orat irim	ielo	dγ	ed t	hde	eut	ک		d Al Stra	
	arc	abc xpe	r F xpe	stu	nde	JBC	นอเ	apł	_	ixe	
ses		Ц	ш	ase	rou	hne	ern	ogr	the	Σ	
I	ž			ö	Ū	Et	H	Bi	Ó		
	2										
ive	golo	Positivism									
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srsp				Interpretivism				natism	POSILIVISIII		
tical pe	Ер										
			Constructionism				ragr				
ore	ogy	Objectivism					P	Objectivism			
The	tol										
	ō										
	s										
method	lysi		Thematic analysis				d ds				
	ana	Stati					ixe tho	Statistical			
	ata	Anal	Contont analysis				Me Me	Analysis			
	Ő			Content analysis							
ch	c		Survey o	luesti	onnai	re (m	ail, fao	ce-to-	face	, web-ba	sed)
seal	ctio	Interview survey (face-to-face, telephone)									
Re	olle	Secondary/archival (e.g. Compustat & CRSP)									
	00		Test & measurement								
	ata	Seminar / Focus group									
				Direct observation / participation							

<sup>&</sup>lt;sup>9</sup> In the social sciences, the common classifications are: experimental and non-experimental designs (Kerlinger & Lee 2000); experimental, longitudinal, cross-sectional and case study designs (de Vaus 2001); quantitative, qualitative and mixed-method designs (Robson 2002; Bryman 2008; Creswell 2009). Within the qualitative strategy are included ethnography, grounded theory, hermeneutics, biography and case study (Patton 2002; Robson 2002).

<sup>&</sup>lt;sup>10</sup> Specific techniques include descriptive analysis, analysis of variance, factor analysis, regression analysis, time series and structural equation.

#### **RESEARCH STRATEGY**

Research strategy in the framework is broadly characterized by:

- (i) Extent of control on the independent variable: experimental and nonexperimental research;
- (ii) Relationship between the researcher and the research participants: field-based and non-field based;
- (iii) Time dimension: longitudinal or cross-sectional; and
- (iv) Form of data: qualitative or quantitative

In general, any research strategy may be deployed to achieve on or more of the exploratory, descriptive and explanatory purposes of research. In this framework, a research strategy is independent of the method of data collection but not of the form of data. Brief descriptions of different strategies and examples of journal articles where they have been applied are presented in Table 4.

The tendency in literature is to classify quantitative research as deductive and qualitative research as inductive. In the framework, I have deliberately excluded the inductive/deductive distinction. I assume that this is already ingrained in the research purpose.

#### Experimental strategy

In their survey of journal articles published in six accounting journals between 1960 and 2007, Oler et al (2010) reported that the experimental strategy was prominent in the 1960s up to the 1980s and then declined thereafter. A methodological analysis of 2,392 doctoral theses approved during 1970-2006 in the United States (Bouillon & Ravenscroft 2010) also showed a trend consistent with that reported by Oler et al. The decline in experimental research since the 1980s was the result of increase in the use of quantitative archival data from data repositories (Oler et al 2010) but may also be attributed to the spate of criticisms that greeted earlier experimental research (Ashton 1982). In a survey of 11 leading accounting journals covering 1990-2009, Coyne et al (2010) revealed that much of the experimental research activities were in the sub-fields of auditing and accounting information systems.

A classical or "True" experiment is characterized by the following attributes (AAA 1973; de Vaus 2001; Kerlinger & Lee 2000):

- (i) Experimental group and the control group. The two groups are the same in all respects except with regard to the variable/s being investigated.
- (ii) Randomization i.e. research subjects are randomly (but not haphazardly) assigned to groups.
- (iii) Manipulation of the dependent variable/s
- (iv) Pre- and post-intervention/treatment measurements.

A quasi-experiment is an experiment that misses some of the attributes of a "true" experiment, more specifically the randomization requirement. In Table 2, I identify two

forms of experiments: (i) laboratory and (ii) field experiment; each of these may take the form of "true" or quasi-experiment.

#### Non-experimental strategy

A non-experimental research may be field or non-field based. In a survey of articles published in 14 accounting journals during the period 1981-2004, to identify trends in field-based research, Merchant & Van der Stede (2006: 118) correctly define field research as those that "involve the in-depth study of real-world phenomena through direct contact with the organizational participants". The authors found that the use of field-based research was indeed growing but that the growth was restricted to management accounting. This point they justified by the fact that 82% of the 318 articles published during the period was from the management accounting sub-discipline. The problem with Merchant & Van der Stede (2006) is that they understated the extent of field-based research as qualitative research, a position earlier taken by Atkinson & Shaffir (1998: 42) who categorize field research as a form of "ethnography and qualitative research". Contrary to these views, a non-experimental research as shown in Table 2 may be field or non-field-based, longitudinal or cross-sectional; quantitative, qualitative or mixed. A list of common contrasts between qualitative and quantitative research is presented in Table

3.

(Adapted from Bryman, 2008, p.393)				
Quantitative	Qualitative			
Numerical, hard, reliable data	Textual, rich, deep data			
Quantitative research places a high premium on data such as financial/capital market data, which they believe are objective and analyze them using statistical / mathematical techniques.	Qualitative research relies on textual data. Qualitative researchers claim that their contextual approach and prolonged involvement in the research process engender rich, deep data. The researcher analyses data by searching for themes and patterns across the data set.			
Artificial settings	Natural settings			
Quantitative researchers operate in contrived settings e.g. they use proxies such as students and mathematical models for experimental management research.	Qualitative research is generally field-based, in that it takes place in the real life settings of participants such as in communities and business organizations.			
Point of view of researcher	Points of view of participants			
The researcher is in the driving seat and the sets of concern (e.g. the independent and dependent variables) which he brings to an investigation structures the investigation.	The researcher gives voice to the research participants, not in the sense of an activist but in the sense of an open-minded, keen observer and listener, deriving meaning from context.			
Researcher distant	Researcher close			
In pursuit of objectivity, a quantitative researcher may complete an entire research project by analyzing archival market data sets without speaking to the market participants.	The researcher is out there face-to-face, engaging with the participants during the research process using primary data collection techniques (e.g. interview, direct observation/participation).			
Theory testing	Theory construction			
Quantitative research is mainly directed at hypothesis testing. The researcher examines theory, formulates research questions, derives and tests hypotheses.	Qualitative research focuses on theory construction/discovery. The researcher is therefore theoretically sensitive. S/he is quick to recognize themes and patterns across a qualitative data set.			

## Table 3: Common contrasts between quantitative and qualitative research strategies

Research strategy	Description	Examples in accounting
Lab. Experiment	Experiment that operates in a contrived setting and that uses human participants other than the real subjects e.g. accounting students as proxies for practicing accountants.	King & Wallin (1995); Waller et al (1999); Allee et al (2007); Hodder et al (2008); Magilke et al (2009); Wang (2010); Hales et al (2011).
Field Experiment	This form of experiment takes place in real-life organizational settings and uses real subjects (e.g. auditors working in public accounting firms) rather than their proxies.	Wilks & Zimbelman (2004); O'Donnell & Schultz (2005); Allee et al (2007); Parsons (2007); Holder- Webb & Sharma (2010); Hunton and Gold (2010).
Longitudinal	In a longitudinal strategy, the researcher collects data relating to several past (retrospective) or future (prospective) time points either from the same sample (as in panel studies) or from similar samples (as in trend studies) with the goal of measuring change over the interval/s of time and causality among variables. The prospective strategy is commonly found in medical research and takes longer time to complete and generate publications than retrospective strategy. Accounting research that uses archival capital market data is a form of longitudinal retrospective strategy.	Banker et al (1996) ; Ely & Waymire (1999); Buhr & Freedman (2001); Elder & Allen (2003) ; Abeysekere & Guthrie (2005) ; Velez et al (2008).
Cross sectional	The cross sectional strategy involves data collection at just one time point. Therefore, it can only measure differences between groups based on their existing attributes rather than change over periods. Since it has no time dimension, it may be useful in establishing correlation but not in drawing causal inferences. However, since correlation is the basis for causality, the results of a cross sectional research may form the basis for a more rigorous research strategy to establish or dispel causal relationship among variables.	O'Keefe et al (1994); Wilmshurst (1999); Dwyer et al (2000); Neu et al (2006); Wahlstrom (2006); Clarkson et al (2008); O'Connor et al (2011).
Mixed Strategies	A non-experimental research strategy that uses a mix of quantitative and qualitative approaches to answer a research question.	Ashkanasy & Holmes (1995); Malina & Selto (2004); Wouters &

# Table 4: Research strategies in accounting

Research strategy	Description	Examples in accounting
		Wilderom (2008); Kalagnanam & Lindsay (1998); O'Connor et al (2011)
Case study	Case study is an empirical, in depth inquiry about a contemporary phenomenon (individual, organizational, social and political) in its real-life setting (Yin 2009). As a research strategy it is not "linked to a particular type of evidence or method of data collection, either" (Yin 1981: 59).	Anderson (1995); Radcliffe et al (2001); Perera et al (2003); Velez et al (2008); Curtis & Turley (2007).
Ethnography	Ethnography involves the researcher immersing himself/herself into a group over a prolonged period with the aim of describing and interpreting the culture and social structure of the group (Robson 2002). Though a separate qualitative strategy, it can be used alone or with other strategies such as case study or grounded theory.	Ahrens (1997); Davie (2003); Wickramasinghe & Hopper (2005); Ahrens & Mollona (2007); Efferin & Hopper (2007); Komori (2008).
Grounded theory	Grounded Theory (GT) is a theory discovery field research strategy (Glaser & Strauss 1967). Though different versions currently exist, GT in its pure, classical sense precludes the researcher from being influenced by existing theories prior to field work. Theory must be 'grounded' in data and the researcher must be theoretically sensitive to recognize categories, patterns and themes as they emerge from data.	Gibbins et al (1990); Barker (1998); Parker (2002); Tillman & Goddard (2008);
Hermeneutics	Hermeneutics is the "art and science of interpretation" of texts, conversations and interactions between and among people (Robson 2002: 196).	Oakes et al (1994); Rikhardson & Kraemmergaard (2006); Spence (2007); Nath (2010)
Biography	A branch of accounting history, biography tells the story of actors (living or dead, well know and not well known) on the development of the accounting discipline and practice (Lee 2002). It may also be regarded as a kind of case study where the individual being studies is the Case (Robson 2002). The strategy relies mostly on interviews and archival documents and to some extent observation.	Zeff (1982; 2002); Whittington & Zeff (2001).

#### **RESEARCH METHOD**

This comprises data collection and analysis methods.

Table 2 shows six methods of collecting data: survey questionnaire, interview survey, test and measurement, direct observation/participation, focus group/seminars and archival. These may be grouped broadly into two: those that require some form of interaction between the researcher and the research participants (primary method) and those that do not (secondary method). The primary methods of data collection include survey questionnaire, interview survey, test and measurement, direct observation/participation and focus group/seminars. The secondary method is archival i.e. the use of data collected by previous researchers, individuals or organizations – whether organized into data repositories such as Compustat, EDGAR, CRSP, IBES, and NAARS or not.

The methods of data collection may also be classified into numerical (quantitative) or textual (qualitative). Survey questionnaire and archival data are generally regarded as quantitative while interview, seminars/focus group and direct observation/participation are regarded as qualitative. However, archival data may be qualitative or quantitative; indeed, any of the data collection techniques, alone or in combination with others may be structured to generate quantitative or qualitative data. A survey questionnaire may generate textual data by including open-ended questions, and an interview may generate numerical data by asking the right questions from the respondents. Furthermore, Table 2 shows that any method of data collection or combination of methods may be applied to any research strategy as long as it is consistent with the strategy and the nature of the

research question. For example, in O'Connor et al (2011), the researchers use three methods (archival, survey and *post hoc* interviews) to collect/gather data, which they analyzed using statistical and content analysis techniques. Also, in Allee et al (2007), the researchers used archival data for experimental simulation.

Several methodology surveys (e.g. Oler et al 2009) point to the fact that the archival method is the commonest technique for data collection in accounting research, particularly in financial accounting. The archival method is perceived to be more objective and given that the researcher has no contact with the research participants, it is also seen as unobtrusive and non-reactive. Another advantage is that it saves significant time and cost since the researcher only needs to focus on data analysis. Furthermore, the research based on archival data can be readily replicated. It seems to me however that what drives the increasing use of archival data in accounting research is not so much about the passion of researchers for secondary data or the statistical/econometric tools associated with it but a combination of the positive attributes highlighted above, the perception by academics that research based on other methods are not favored in journal publications and the fear by academics that their tenure is at risk if they do not publish. Merchant (2010:119) is more explicit about this:

Given the current state of affairs, what should researchers whose interests fall in non-mainstream areas do? I suggest there are three options. One is to go mainstream. Use economic theories and models and find large databases on which to test them. For the most part, that is the option that I have chosen. Most of my research now starts with the acquisition of an archival database. I try to use the databases to test and refine models that are at least partly economics-based. My days as a survey and field researcher seem to be largely over. A second option is to go to a lower-ranked school, one that does not value solely publications in "top-3" journals. With the passing of time, most non-mainstream professors will actually have to take this option, as they will not be getting tenure at the topranked business schools. A third possibility is to make an academic career outside the United States. If I were starting my career now, that is probably what I would do.

But archival data are not without shortcomings. The quality of archival data depends to a large extent on the integrity of the method used to generate the data sets initially and is affected by any subsequent changes in the data structure within the archive. Since archival data is about the past, it also means that research focusing primarily on it may not address critical issues of the moment. Furthermore, the archival method neither account for unrecorded events (e.g. off balance sheet transactions) nor for major economic and historical events during each period covered by the data and is at best a crude proxy for the behaviors of accountants and non-accountants in the production, dissemination and use of accounting information.

Questionnaire and interview surveys are held with great suspicion in accounting research and their use is discouraged particularly in financial accounting research. This stance however ignores the accuracy with which surveys are used in other social research fields including the successes recorded in large scale crime surveys in the Australia, Canada, UK and US where archival (crime survey) data sets are being mined for research purposes by academics from diverse fields. In other words, it might be the case that accounting researchers are not sufficiently skilled in designing and administering surveys, and that they are not skilled because they are not trained in that area. Indeed, what we refer to as survey biases are an inherent part of human behaviors, which social sciences, including accounting seeks to understand. In accounting practice, decisions about asset depreciation, provision for losses and contingencies, estimation of fair value, pension accounting etc all involve professional judgment or biases of some sort and these biases find their way directly or indirectly into the archival capital market data. Paraphrasing Beard (1934), Mautz (1963:323) wrote:

If accounting is to be a social science, it must also accept responsibility for value judgments.....a social scientist may attempt the impersonal, disinterested viewpoint of a physical scientist, but the truth is that his data include value judgments and for him to ignore such considerations is to ignore important aspects of his data.

Although methodology surveys have typically focused on the archival method, other methods i.e. interviews (e.g. Gibbins et al, 1990; Barker et al, 1998; Radcliffe et al, 2001; Neu et al, 2006; Komori, 2008), direct observation/participation (e.g. Ahrens, 1997; Ahrens & Mollona, 2007; Efferin & Hopper, 2007), simulated test of research subjects (e.g. King & Wallin, 1995; Waller et al 1999; Hodder et al, 2008; Hales, 2011) and psychometric test (Dwyer et al, 2000) are all being used for research purposes, though the extent of their use has not been determined. In the same way, since methodology surveys are typically not undertaken at the level of (data analysis) method, we do not know the extent to which statistics is used for data analysis in accounting research relative to techniques such as content analysis (Buhr & Freedman 2001; Abeysekera & Guthrie 2005; Clarkson et al 2008) and thematic analysis (Frazier et al 1984; Gibbins et al 1990; Neu et al 2006).

#### THEORETICAL PERSPECTIVE

The term "theoretical perspective" is used here to mean the philosophical assumptions that a researcher makes about reality (ontology) and how we gain an understanding of this social reality (epistemology). It has also been referred to as "philosophical worldview" i.e. "the basic set of beliefs that guide action" (Creswell 2009) or "paradigm" that emphasizes "the commonality of perspective which binds the work of a group of theorists together in such a way that they can be usefully regarded as approaching social theory within the bounds of the same problem." (Burrell & Morgan 1979: 23).

"Positivism" or "positivists" affirm the existence of social reality outside the consciousness of the researcher. The economic and business decision making processes, and the way investors use financial statements in arriving at decisions are examples of these social realities. The positivist-objectivist paradigm seeks to uncover truth by establishing and testing relations among variables using quantitative methods of data collection and analysis. It is the natural science, value-free approach to inquiry. The purpose is to explain and predict observed phenomena by testing hypothesis. Its standard for assessing research is internal and external validity of methodology and research conclusions.

At the opposite end of "positivism" is "interpretivism". The "interpretivists" seek to explore the world and discover its complex network of subjective meanings and contexts. To the interpretivist, there is no objective world but a world that is socially constructed (constructivist ontology). Therefore, the goal of the researcher operating within this paradigm is to be able to decipher empirical patterns or regularities. Interpretivism focuses on qualitative research strategies and methods that involve contacts with the research subjects/participants (Blaikie 1993). The standard for assessing research is "trustworthiness and authenticity" (Bryman 2008: 377).

If researcher strategies and methods can be mixed, is it equally possible to mix theoretical perspectives? This is a contentious debate within the mixed-method movement. Nevertheless, "pragmatism" or "what works" has been suggested as the paradigm behind the combination of qualitative and quantitative approaches (Robson 2002: 43).

#### CONCLUSION

In this paper, I have demonstrated that the current classifications of methodology in accounting research are conceptually inadequate. I then propose a framework to address the problem. In the framework, I argue that research methodology is a decision process that starts with defining the purpose of a research, followed by the research strategy and the data collection and analysis techniques; and that research strategy is shaped by the researcher's philosophical perspective. The framework helps not only in structuring research but also in shaping future surveys of trends in methodology in accounting research. Methodology surveys will be more fruitful if each of these elements is separately addressed, for example by comparing archival method with other methods of data collection and not with experimental strategy.

Zimmermann (2001) suggests that certain accounting sub-fields are preponderantly descriptive, while others have advanced into the explanatory zone, generating and testing theories. This is a testable proposition and researchers may wish to establish the extent to which accounting research in various sub-fields is exploratory, descriptive or explanatory.

This paper has further shown the need for researchers not only to be aware of but also to be open minded about the diverse methodologies for conducting and evaluating research as well as their strengths and limitations. Ultimately, the selection of research methodology should be driven primarily by the research question: a theory-testing research requires a theory-testing methodology, a theory-generating research requires and theory-generating methodology.

## APPENDIX



Figure 1: Academic research process [Adapted from Boehm (1980)]



Figure 2: Practitioner research process [Adapted from Boehm (1980)]

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