

THEORY IN PUBLIC PROCUREMENT RESEARCH

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ABSTRACT. This paper examines the role of theory in public procurement research. Theoretical rigour is integral to management science, yet little is known on the extent and form of theory in public procurement. With the field starting to mature, addressing this issue is timely. From conducting a systematic literature review we find that 29 percent of articles are theoretically grounded, with the incidence of theory having increased in recent years. Economic, sociological, psychological, and management theories are all in evidence, but micro-economic theories predominate. Our findings also show that survey reporting and case studies account for almost half of all studies; procurement research is focused on organizational-level aspects more than regulatory-policy issues or public buyers; and studies to date have largely emanated from the North American and European regions. The contribution of this paper lies in clarifying the theoretical underpinnings of public procurement. Out of this we highlight the need for greater theoretical rigour, point to the under-use and even absence of theories that could have high validity and utility, and suggest a narrowing of research foci.

INTRODUCTION

Writing over a decade ago Thai (2001) drew attention to the academic neglect of public procurement. In spite of its centrality to public service delivery and its long history in public administration, public procurement resided on the periphery of management science. In the years since much has happened to redress this imbalance so that public procurement has moved closer to the mainstream. Its research remit continues to expand as scholars of management, public administration, finance, law, supply chain and logistics management, mathematics, and information technology apply themselves to the study of public procurement. In turn, this has opened up promising lines of inquiry on topics as diverse as e-procurement (Lee, 2010; McCue & Roman, 2012; Schapper et al., 2006), small suppliers (Flynn et al., 2014; Qiao et al., 2009; Withey, 2011), and buyer professionalization (McCue & Gianakis, 2001; McKeivitt et al., 2012; Prier et al., 2010). The progression of the public procurement field is just as evident outside academia. In political and policy arenas public procurement is now linked to concerns over economic growth, social inclusion, and environmental sustainability (Arrowsmith, 2010; McCrudden, 2007). In particular, pressures on public finances since the 2007 global financial crisis have forced a reappraisal of the role of public procurement, with

some arguing that it should be leveraged for domestic economic growth and job creation (Murray, 2009). Whatever perspective one takes, it is clear that the profile of public procurement is greater than at any time previously.

Central to the upward trajectory of public procurement has been two-way communication between research and practice. While there has been a regrettable trend in many disciplines to divorce themselves from the everyday concerns of business practitioners and privilege theoretical and methodological rigour over all else (Hambrick, 2007; Gunther McGrath, 2007), public procurement has made a virtue out of constructively engaging with practitioners and addressing their interests. Contemporary studies attest to an emergent nexus between academic research and issues of direct organizational and professional concern. Among recent examples of such practitioner-focused inquiry include a framework to support buyers in managing the challenges associated with e-procurement adoption and implementation (Roman, 2013), a model for quantifying the organizational benefits of migrating to e-procurement (Gardenal, 2013), and a tool for assessing the contribution that buyers make during the procurement of consultancy services (Schiele, 2005). Procurement professionals are also making an impact. Their insights on topics ranging from environmental impact assessments (Van Valkenburg & Nagelkerke, 2006) to procurement strategies in post-disaster situations (Atkinson & Sapat, 2012) are helping to disseminate best practice, stimulate debate, and inform scholarship. This intersection of research and practice is creating a solid platform on which public procurement can develop into the future.

Notwithstanding the undoubted progress that has been made in fostering a community of interest in public procurement research (Grimm & Thai, 2011), there are still areas that have yet to be fully addressed. In particular, the role of theory in public procurement research is deserving of greater attention. While it is clear that practitioner concerns have featured prominently, it is less clear as to what role theory has played in advancing our knowledge of purchasing in public sector contexts. This raises important questions over just how rigorous is public procurement research. Having answers to these questions is necessary if we are to make informed assessments of how far we have come and how far we still have to go to establish public procurement as a credible management sub-field. Where scholars have engaged with the question of theory, the recommendation is that we need more of it. In their discussion of public procurement policy Snider & Rendon (2008, p. 311) were

mindful to say that “...scholars have yet to give sufficient efforts to the sort of conceptual theorising about policy that will lead to ordering devices and approaches that can help researchers and students make sense of its complexity, uses and limitations.” Previous to this, Snider (2006) hinted at a tendency towards introspection in contemporary public procurement research and a failure to relate it to more overarching theoretical perspectives. Other contributors have also averred to the desirability of using theoretical lenses, as when McCue & Prier (2008, p. 2) called for more theory if “one wants to explain, predict, and understand behavior concerning the intent, purpose, and actual use of cooperatives in procurement.” Thus, while the role of theory has not been interrogated in any systematic fashion up to this point, there is reason to believe that practitioner relevance has taken precedence over theoretical rigour.

When deliberating on the role of theory in public procurement research, there are a number of factors worth bearing in mind. Firstly, the entry of public procurement into the academic ranks is a relatively recent occurrence (Matthews, 2005). The fact that public procurement was still spoken of by Prier et al., (2010) in terms of the “birth of profession” as recently as 2010 is further indication of its newness. Secondly, public procurement is said to suffer from definitional ambiguity and porous field boundaries, making the application of theory problematic in comparison to mature fields that operate within strict parameters (Prier & McCue, 2009). These caveats aside, we believe that an examination of the role of theory in public procurement research is warranted. It is our contention that public procurement is fast reaching the point at which diligent and judicious application of theory is required if momentum is to be maintained. Importantly, theoretical rigour need not come at the expense of practitioner relevance. If anything, the effect of more emphasis on theory is likely to be salutary. Dimitri (2013, p. 152) captured this sentiment best in stating that “...daily procurement design can benefit from the more robust theoretical findings, while practice can fruitfully feed academic research with new problems, suggestions and intuitions.” In this way the application of existing theories to current practitioner challenges has the potential to generate new insights and possible solutions to these same challenges, while research endeavor can generate the data for developing new concepts, models and even field-specific theories.

The purpose of this article is to examine the role that theory has played in public procurement research. In particular, it aims to answer the following research questions.

RQ1: What percentage of public procurement research is theoretically grounded?

RQ2: What are the main theories used in public procurement research?

Related to the theoretical underpinnings of any field are questions to do with its coherency and its trajectory. This led us to pose three additional research questions.

RQ3: What type of papers characterise public procurement research?

RQ4: What are the main research foci in public procurement?

RQ5: What geographical regions is public procurement research associated with?

To answer the five research questions we conducted a systematic review of articles published in the *Journal of Public Procurement*. This was done in order “...to map and to assess the existing intellectual territory” (Tranfield et al., 2003, p. 208). The review covered a 13 year time period and took in 172 articles, after exclusions were made. Our findings have important implications for public procurement scholarship, and are set out in greater detail in a later section. Before this, we examine the role of theory in management science. We then describe our methodology, paying particular attention to coding issues. The findings of the review are then reported, including the extent and form of theory in public procurement research, the type of papers that characterise public procurement research, the focus of public procurement research, and the geographic regions from which it emanates. In the last section we discuss the implications of our findings in respect of the emergence of public procurement as a research domain, as well as its future prospects.

THEORY IN MANAGEMENT

Theory is central to the scholarly credentials of any discipline. Within the public procurement field little is known of the role that theory has played to date. This situation stands in contrast to the related field of supply chain management wherein theory is widely debated (Ketchen & Hult, 2011, for example). Moreover, supply chain management has been subject to a number of systematic literature reviews of late, including Harland et al., (2006), Defee et al., (2010) and Chicksand et al., (2012). Coming out of these three reviews are insights, though not always consistent, on the extent to which theory

is used and the form that it takes. Harland et al., (2006) detected some signs of theoretical development in supply management; Defee et al., (2010) suggested the need for more theory and noted the desirability of constructing theory particular to supply chain and logistics management; and Chicksand et al., (2012) concluded that supply chain management is relatively under theorised, lacking in disciplinary coherence and still waiting for a dominant paradigm to emerge. Comparable evidence on the extent and form of theory use in public procurement is currently lacking. This is a gap that needs addressing, both to inform future research trajectories and to build on gains that have been made in the public procurement field over the last ten years (Grimm & Thai, 2011). Before doing so, we first make the case for why theory is integral to social scientific research, examine what is meant by theory, and critique the ascendancy of theory within management science.

Theory has undoubtedly assumed greater prominence as management science has matured, largely in consequence of decisions taken over fifty years ago to strengthen its scientific underpinnings (Bailey & Ford, 1996). Reviews of premier management journals have shown that the number of articles making a theoretical contribution, either through theory testing or theory building, increased steadily between 1963 and 2007 (Colquitt & Zapata-Phelan, 2007). Management-specific theories have proliferated over this same period and are now used alongside the more established psychological and economic theories for studying organizations and markets (Agarwal & Hoetker, 2007). These developments reflect a near universal consensus over the criticality of theory in management research. As researchers, theory enables us to organise our thoughts and knowledge, formalise our predictions, generate coherent explanations of real world phenomena, develop hypotheses, and integrate knowledge (Hambrick, 2007; Miller, 2007). That is, theory provides us with logical structures for explaining and predicting individual and social phenomena. It is how we make sense of, disaggregate, and rationalise the complex phenomena we are interested in revealing. Ultimately, theory leads us to a more comprehensive understanding of our phenomena of interest than would ever be possible in its absence.

In addition to strengthening the scientific foundations of management, theory has a contribution to make to organizational practice and management. In the ideal sense theories should have an acceptable degree of validity, by which is meant enabling understanding and prediction, and a corresponding degree of utility

for practitioners (Miner, 1984). As Van de Ven (1989, p. 486) remarked, good theory not only “advances knowledge in a scientific discipline” but also “guides research toward crucial questions, and enlightens the profession of management.” To the extent that they are based on empirical regularities, theories help managers to better understand their present circumstances and make predictions as to the outcome of likely future events (Christensen & Raynor, 2003; McGahan, 2007). Knowledge generated through academic investigations can be transformed into decision making tools for dealing with real world business problems. Pioneers in the field of management research envisaged the role of theory in just this way. Herbert Simon (1967) outlined several decades ago his belief that the success of business research and education depended on its ability to synthesise knowledge from scientific conceptions of management with insights from the real world of organization management. Put simply, theory fosters understanding not only in the academic realm but also in the everyday management of organizations.

The prominence of theory in management research has brought its own challenges, however, and uneasiness exists over what purpose and whose interest it now serves. A number of scholars have expressed concern with the privileging of theoretical sophistication over practical relevance. Hambrick (2007, p. 1351) criticised a “hyper-commitment to theory” within management research which stymies the emergence of interesting facts; Ghoshal (2005) opined that teaching, practice and knowledge integration have all suffered because of a fixation on scientism; and Gunther McGrath (2007) spoke of an identity crisis within management research that has resulted from subordinating practical relevance to theoretical purity. This “hyper-commitment to theory” is viewed by some as an impediment to progress. It led Miller (2007, p. 179) to complain of interesting and novel empirical findings being straitjacketed with a particular theory, linked to meretricious explanation, or couched dishonestly in explanations that were formulated post hoc. In a similar vein Tushman & O’Reilly (2007, p. 770) have argued that “self-imposed distance from the phenomena we study reduces the quality of our field’s research, undermines the external validity of our theories, and reduces the overall relevance of the data used to test theories.” In the eyes of many, we now have “too much of a good thing” when it comes to theory in management research (Hambrick, 2007, p. 1346) and have jettisoned “pragmatic science” in favour of “pedantic science” (Anderson et al., 2001).

A second major issue surrounding theory in management is its definition. An anomalous situation exists where consensus on the importance of theory is not matched by agreement on what we understand theory to be, or how it ought to be used. According to DiMaggio (1995), theory is variously understood as a set of covering laws that explain and predict social phenomena, as a detailed and plausible account of a social process, or as a form of enlightenment. While some scholars and schools of thought define theory by its ability to explain variance in a criterion of interest, others see theory in terms of detailed narratives and accounts (Colquitt & Zapata-Phelan, 2007). These different understandings of theory are not mutually exclusive, and many of the best theories incorporate elements from all three perspectives (DiMaggio, 1995). Irrespective of its precise definition, Whetten (1989) proposed that any theory contains four essential elements. Firstly, a theory must have variables, constructs, or concepts that explain the social phenomena of interest. Secondly, it must specify how these variables, constructs, or concepts are related to one another. After this, there must be a rationale associated with the selection of factors and their causal relationships. Finally, all theories should have contextual and temporal boundaries that set the limits of generalizability for its use. We can relate Whetten's (1989) disaggregation of the fundamental components of theory to our earlier articulation of it being a robust system capable of explaining and predicting individual and social phenomena.

Inverting what Whetten (1989) had to say on the constitution of a theory, Sutton & Staw (1995) reasoned that if agreement on a standard definition of theory is proving illusive, we can at least be clear on what theory is not. In their estimation references, data, variables, diagrams or hypotheses do not qualify as theory. Among their criticisms, they noted the all too frequent tendency of simply referencing an existing theory without any attempt to set out its causal logic, describing empirical regularities without proper explanation as to why they are occurring, listing concepts without justifying their causal connections, and creating diagrams without explicating the mechanisms believed to be at play. While concurring with Sutton & Staw's (1995) basic argument, Weick (1995) urged caution over what we discount as theory. For him theory is not just a finished product. It is equally a process, a work in progress. He reasoned that even if references, data, variables, diagrams and hypotheses are not theoretical of themselves, they are integral to the process of theory construction. In reporting data patterns, listing

variables or constructing diagrams – all activities that form part of the “interim struggle” of theory development - Weick (1995) surmised that researchers are oftentimes making their way towards some form of theoretical contribution, albeit tentatively and imperfectly. Evidently, discussion on the role of theory in management research raises as many questions as it answers. Different interpretations over what theory is and what purpose it should serve persist, with some schools of thought adhering to a standard scientific view and others preferring something bespoke to the social sciences. What is more, achieving consensus on these issues appears a long way off.

The issues raised in the preceding paragraphs are just as germane to public procurement. Like management generally, greater theoretical application can enable more scientific explanations of public sector purchasing (McCue & Prier, 2008; Snider & Rendon, 2008). The judicious use of theory can help to foster mutually reinforcing ties between academia and practitioners, thereby enhancing the utility of research outputs (Dimitri, 2013). At the same time, public procurement cannot escape many of the challenges associated with theory in management science. The diversity of the public procurement field, while beneficial in supporting the cross-pollination of ideas and perspectives, leaves it vulnerable to becoming too diffuse through the use of multiple theories, methodologies, and research foci. Pfeffer (1993) highlighted this very problem in relation to management research generally. How exactly do we “...embark on a more truly synergistic research enterprise, one in which we might perform work that is rigorous and relevance at once” (Gulati, 2007, p. 778) is also a challenge for public procurement researchers. Given that the pendulum in management science is said to have swung from too little theory to “compulsive and mindless theorizing” (Hirschman, 1970, p. 329), this is no easy undertaking. It requires, as Aram & Salipante (2003, p. 189) have stated, a “reasoned relationship between the particular and the general.” The next section describes the methodology used to examine the role of theory in public procurement research. Our primary objective was to determine the extent of theory use (RQ1) and what theories are used (RQ2). In addition, the type of papers that characterise public procurement research (RQ3), its main research foci (RQ4), and the geographic regions with which it is associated (RQ5) were also subject to investigation.

METHODOLOGY

To answer the five research questions we conducted a systematic review of public procurement research. Our approach was informed by best practice guidance offered by Tranfield et al., (2003) for planning, conducting, and reporting on a literature review. This covers such aspects as the development of a review protocol, considerations for the identification of research, and methods for the synthesis of data. In searching the field we limited our review to the *Journal of Public Procurement*. Reliance on one journal has its limitations. Principally, our approach meant that public procurement research published elsewhere is excluded from our analysis. Our reliance on one journal can be contrasted with three journals selected by Chicksand et al., (2012) and five journals selected by Defee et al., (2010) in their respective reviews of supply chain management. Against this, the *Journal of Public Procurement* is the only scholarly journal dedicated to public procurement research [1]. By comparison, there are a number of scholarly journals dedicated to supply chain management. Furthermore, the *Journal of Public Procurement* has established itself as the primary outlet for researchers interested in public sector purchasing and has become *the* centre of debate on myriad issues in the public procurement domain.

Our experience led us to believe that scholarship on public procurement is concentrated within the *Journal of Public Procurement* and that the quantity of articles appearing elsewhere is not substantial to the degree that it would significantly affect our findings. As such, we felt justified in limiting our review to *the Journal of Public Procurement* as it represents a reliable and comprehensive gauge of what has been researched over the last decade. We also noted that reviews based on the content of a single journal have been previously undertaken. For example, Taylor & Taylor (2009) performed a thematic analysis of operations management research using only the *International Journal of Operations and Production Management*. Our sample timeframe starts in 2001, the year in which the *Journal of Public Procurement* was launched, and ends in 2013 [2]. It takes in 13 years of public procurement research, encompassing the time period both before and after the global financial crisis of 2007. As is standard with literature reviews, we excluded editorials and president letters, symposium introductions, practitioner corner articles, U.S government reprints, and book reviews as these were deemed extraneous to the objectives of the research. This left 172 articles which were published in the *Journal of Public Procurement* between 2001 and 2013.

Each of the 172 articles constituted a unit of analysis. A system was employed (Table 1) to ensure that all 172 articles were analyzed in a comprehensive and transparent way, which is a hallmark of the systematic review procedure (Tranfield et al., 2003). To begin with, descriptive details for each paper were recorded. These included year of publication, volume number, article title, and author details. Each article was then tested against pre-specified criteria, discussed further on, to determine if it was theoretically grounded. Articles were coded zero if they were adjudged theoretical and one if non-theoretical. Where applicable, the actual theory employed was also recorded. A list of major theories was devised in advance of the coding process to allow easier identification, coding and categorisation of theoretical articles. This list, reproduced in Table 3, was compiled based on the authors' pre-existing knowledge of the field and from skimming a sample of papers from each publication year.

Table 1
System for Reviewing Articles

Title	Theoretical	Theory Code	Theory Group	Type of Paper	Level of Analysis	Region
Dispelling fear...	Yes	All Other	Psychology	Conceptual	Organizational	US
Design and build	No	n/a	n/a	Survey	Organizational	Europe
Public policy...	No	n/a	n/a	Survey	Organizational	US
An appraisal...	Yes	Institutional	Sociology	Survey	Macro	Africa
Best value....	No	n/a	n/a	Technical	Organizational	n/a
Unwritten ground...	Yes	Principal-Agent	Economics	Case study	Macro	Asia
A model...	No	n/a	n/a	Survey	Organizational	Europe
An empirical...	Yes	Principal Agent	Economics	Survey	Macro	Africa

As well as investigating theoretical content, our review sought to determine paper type, research focus, and geographic origin. Previous reviews in fields such as operations management have adopted similar lines of inquiry (Taylor & Taylor, 2009, for example). In the case of paper type, a list of seven categories and their definitions was compiled (Table 2). Again, this list was based on the authors' pre-existing knowledge of the field and from skimming

sample papers from each publication year. Each of the 172 articles was coded as conceptual, survey, case study, technical & simulation, policy & literature review, positional, or development of measurement tool. The research focus of each article was recorded verbatim at first. Thereafter, each article was assigned to one of three research categories: characteristics and motivations of public sector buyers; procurement as an organization-level phenomenon; and macro policy and regulatory issues. Finally, where applicable the regional focus of the article was identified and coded as one of: United States & Canada, Europe, Asia & Oceania, Africa, all other regions, and no geographical context.

TABLE 2
Pre-Specified List of Paper Types and their Definitions

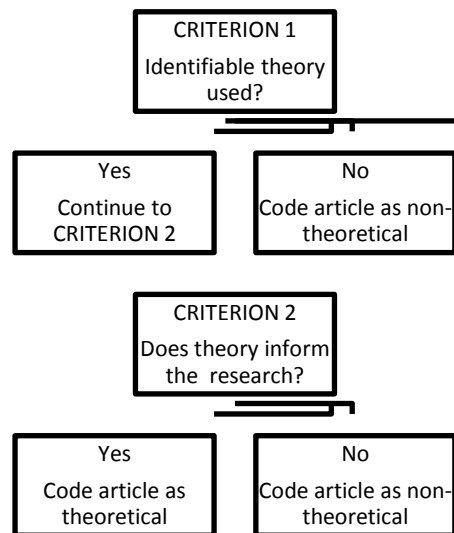
Paper Type	Description	Code
Survey	A paper that is based on the systematic examination of a particular topic and reports on its quantitative findings e.g. a survey of the professional skills and abilities of public sector buyers	1
Case study	A paper that focuses on a particular case or issue, using documentary evidence, interviews, quantitative data in reporting its results e.g. a case study of procurement reform in local authority organizations	2
Conceptual	A paper that focuses on concept development and/or makes a theoretical contribution (non-empirical)	3
Development of measurement tool	A paper that describes the development/application of a measurement tool in respect of an aspect of procurement e.g. an instrument that measures the impact of e-procurement on compliance with purchasing policies	4
Positional	A paper that offers an opinion on a particular issue or topic e.g. the pros and cons of set-asides for small and medium-sized enterprises (SMEs)	5
Policy & literature review	A paper that reviews a policy area associated with public procurement or that reviews literature relevant to a certain topic e.g. the growing use of environmental criteria in the selection of suppliers	6
Technical & simulation	A paper that deals with a technical problem or challenge e.g. optimising weighting criteria for tender evaluations/ A paper that simulates or mathematically models certain scenarios e.g. the effect of bundling contracts on bid prices	7

To test if an article was theoretical two criteria were applied (Figure 1). The first criterion stated that the article must include something approximating to the standard definition of theory, namely: a structure capable of explaining and predicting individual and social phenomena (Colquitt & Zapata-Phelan, 2007; Hambrick, 2007). For example, institutional theory explains how organizations come to resemble one another in their structural and behavioural characteristics by reference to the impact of institutional forces, and predicts the conditions under which this is more or less likely to happen (Meyer & Rowan, 1977; Meyer & Scott, 1983). Absent of having such a systemised structure capable of explaining and predicting individual and social phenomena, the article was not judged theoretical. While this point may seem obvious, it is nonetheless important as the conflation of concepts, frameworks, hypotheses, data and references with theory is a common mistake made by researchers (Sutton & Staw, 1995). An alternative approach would have been to count the number of times “theory” appears in the text body of the article, or if “theory” features in a section heading (Hambrick, 2007). For the former, the frequency of mentions could be taken as indicating if the article is theoretical in substance, with perhaps a minimum frequency threshold used to separate theoretical from non-theoretical articles. The presence of theory in a section heading is also suggestive of a theoretical article. However, as we show below, it is no guarantee that an article is theoretical in substance.

The second criterion stipulated that where a theory is specified within an article it must be used to frame the research. It is not sufficient for an article to superficially employ a particular theory, thereby purporting to be more scientific than it actually is. The use of this second criterion allowed for the exclusion of any article that only pays cursory reference to a theory or simply name-checks a theoretician. Hence, in the interests of producing a reliable indicator of theory in public procurement research there had to be a demonstrable link between the logic of a cited theory and the research content of the article. No definitive rule exists for making such a determination and the depth and sophistication of application can be expected to vary across published research. In addition, differences in theoretical application are to be expected on the basis that some articles will use theory to deduce hypotheses for empirical testing while others will seek to build on, or revise, a particular theory. But either way, the theory or theories that appeared in the article had to be used in a substantive way for it to be judged theoretical. A good

example of theoretical application is found in Thai (2001). He used general systems theory to explain how policy and regulatory forces impact procurement practices across the public sector and how these same practices, in turn, act back on political and policy calculations, resulting in a system defined by interaction and inter-dependence.

FIGURE 1
System for Coding Articles as Theoretical



Our chosen methodological approach had both advantages and disadvantages. It was not as objective, transparent or systematized as mechanically searching for “theory” in the text body or section headings of articles. Against this, we did proceed with a clear definition of theory and consistently applied this definition in testing whether a particular article was theoretical or not. Our approach also required two reviewers to scrutinise each of the 172 articles and to make their categorizations on this basis. This ensured that a reliable determination was made on the presence or absence of theory, and if this same theory had been applied to a satisfactory degree. An example is useful in demonstrating why our methodological approach proved more effective than mechanical content analysis. Among the reviewed articles was an investigation of “design and build” procurement strategies by Lesniak & Zima (2013). As part of their literature review, Lesniak & Zima included a section headed

“theoretical background”. However, closer inspection revealed that this section contained no theory. Had our approach solely relied on detecting the presence of “theory” or “theoretical” in section headings, Lesniak & Zima’s article, and others besides, would have been incorrectly recorded as theoretical.

The coding process proceeded in two stages. In the first stage each article was examined by two reviewers working independently of one another. Tranfield et al., (2003, p. 217) referred to this as the process of “double extraction”. Using two reviewers is a recommended strategy for improving the quality of qualitative research and helps to underpin the reliability of the review and its findings (Seale, 2000). Upon completion of the first stage the results of each reviewer were cross-compared. In over 90 percent of cases the reviewers independently arrived at the same determination on the presence of theory and the particular theory in question. The classification of paper type, research focus and geographic region resulted in few discrepancies as it involved coding according to a pre-specified list in the case of paper type and coding verbatim in the case of both research focus and geographic region.

In the second stage the two reviewers worked together and dealt with the small number of articles over which there were initial differences in coding decisions or where some element of uncertainty existed. In the former instance this involved deciding whether an article had met the two qualifying criteria for it to be judged theoretical. In other words, was there an identifiable theory and did the same theory frame the research study. In the latter instance it required identifying theories where they were not made explicit, a difficulty which Defee et al., (2010) also experienced. For example, Ntayi et al., (2011) described, explained and modelled the relationship between psychological wellness and organizational anomie to ethical procurement behaviour. Out of this we inferred self-determination theory, a meta-theory for framing motivational studies, even though Ntayi et al., (2011) did not explicitly refer to this theory. Similarly, Hommen & Rolfstam’s (2009) invocation of interactive learning and evolutionary perspectives on innovation processes led us to the conclusion that innovation theory was being used. Our two-stage approach resulted in the coding of 172 articles along a number of dimensions and the generation of a large dataset. Thereafter, a synthesis of the data was undertaken. The results from this are described in the next section.

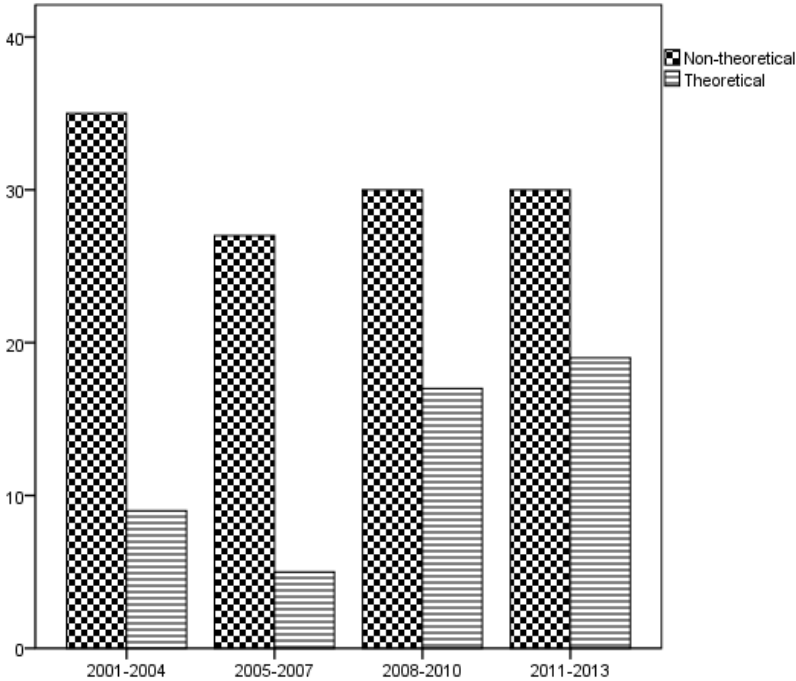
RESULTS

The first question involved determining the extent to which public procurement research is theoretically grounded. Out of analysing 172 articles published in the *Journal of Public Procurement* between 2001 and 2013, exactly 50 contained an identifiable theory that was used to frame the study or discussion. This translates to 29 percent of all reviewed articles. To further investigate the theoretical character of public procurement, we disaggregated research into four distinct time periods: 2001-2004, 2005-2007, 2008-2010, and 2011-2013. We then examined the incidence of theoretical articles in each period (Figure 2). Statistical testing using Pearson's Chi Square led to a rejection of the null hypothesis that theory use and time period were independent. Instead, we found a statistically significant relationship between the use of theory and the time period in which an article was published ($p < .05$). The strength of this association is low-moderate, as indicated by a Cramer's V of .21. More fine grained analysis revealed that theoretical articles were more prevalent in the two most recent time periods, 2008-2010 and 2011-2013. This reflects an upward trend in theory use in public procurement research. So while nine of the forty-four articles (20%) published between 2001 and 2004 and five of the thirty-two articles (15%) published between 2005 and 2007 were found to be theoretical, this rises to seventeen of forty-seven articles (36%) between 2008 and 2010 and nineteen of forty-nine articles (39%) between 2011 and 2013.

Having established that 29 percent of articles had a theoretical grounding, the second question investigated what theories were used. Our results, listed in Table 3, show that theory of auctions & competitive bidding is the most singularly used theory in public procurement. The next most used theory is principal-agency theory and, after this, transaction cost economic theory, contract theory and general systems theory. Seven of the fifty articles used a combination of theories. Among these were five articles that combined two theories; for example, Glock & Broens (2013) integrated organization behaviour theory with contingency theory. Two articles used four major theories; for example, Apte et al., (2011) used principal-agent theory, transaction cost economic theory, contract theory and supply chain management theory. Sixteen of the fifty theoretically grounded articles used theories that were not contained in our pre-specified list and were assigned to the "all other theories" category. Included here was a broad theoretical range, including theory of professions, theory

of leadership, social network theory, fuzzy set theory, theory of lean and theory of self-determination.

FIGURE 2
Theoretical Articles between 2001 and 2013



After identifying the most frequently used theories we turned our attention to the underlying disciplines on which public procurement research is based. For the purposes of this analysis each theory is said to have its antecedents in one of four distinct social scientific disciplines. These are economics, psychology, sociology and management. Each of the 50 theoretical articles was attributed to one of these four categories. In the case of articles using a combination of theories, attribution was made on the basis of the first listed theory appearing in the article.

TABLE 3
Individual Theories and their Frequency

Theory	Frequency
Theory of auctions and competitive bidding	8
Principal-agent theory	5
Contract theory	3
Transaction cost economic theory	3
General systems theory	3
Institutional theory	2
Organization behaviour theory	2
Supply chain management theory	1
Combination of theories	7
All other theories	16
Total	50

In the majority of cases the matching of an individual theory to one of the four foundational disciplines was a straightforward process. Theory of auctions and competitive markets, principal-agent theory and transaction cost theory are recognisable as economic theories. Leadership theory and self-determination theory belong to psychology. Social constructivism and institutional theory are sociological in character. Organization behaviour theory and supply chain management theory are associated with management. In the case of general systems theory, which is multi-disciplinary, we believe it is synonymous with the sociological discipline and coded it accordingly.

The results, which are contained in Table 4, show that economics has been the most prominent discipline informing public procurement research. It accounts for over half of theory-based articles. Twenty-eight of the fifty theoretically grounded articles (56%) have their antecedents in economic theory. Examples include theory of auctions and competitive bidding, principal-agent theory, transaction cost economic theory and contract theory. The sociology discipline accounts for nine of the theoretically grounded articles (18%), with examples including general systems theory, institutional theory and social constructivism. The management discipline also accounts for nine articles (18%), with organization behaviour theory, theory of innovation and theory of lean relevant here. Lastly, theories with a psychological basis were found in four articles (8%), and include theory of self-determination and leadership theory.

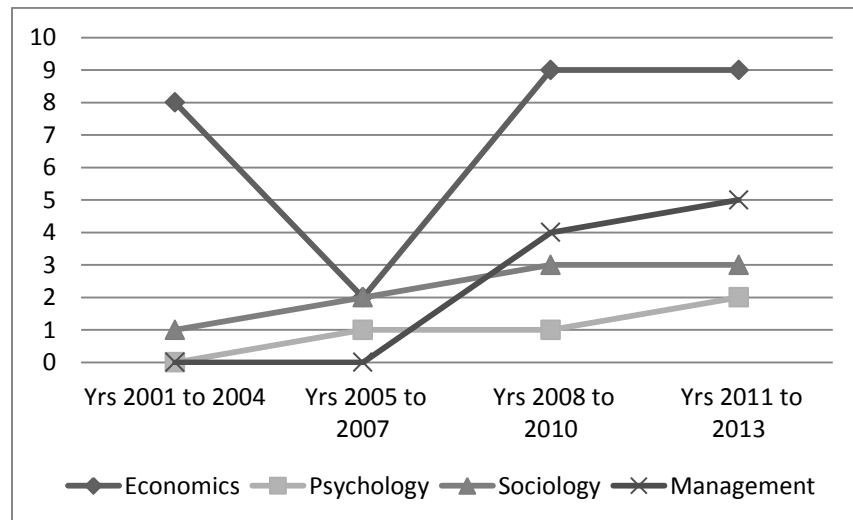
TABLE 4
Disciplinary Influences in Public Procurement Research

Discipline	Frequency	Percentage	Individual Theories
Economics	28	56%	Theory of auctions & competitive bidding Principal-agent theory Transaction cost economic theory (including in combination with other theories) Contract theory (including in combination with other theories) Fuzzy set theory Game theory (including in combination with other theories) Classic economic theory New institutional economic theory
Sociology	9	18%	Institutional theory General systems theory Social constructivism Social exchange theory Social network theory Theory of professions
Management	9	18%	Organization behaviour theory (including in combination with other theories) Supply chain management theory Healthcare management theory Organization learning theory Theory of innovation Theory of lean
Psychology	4	8%	Leadership theory Process theory (of trust) Theory of self-determination
Total	50	100%	

Further analysis of the impact of the four different disciplines on public procurement research over the last decade is revealing (Figure 3). It shows that economic-based theories were dominant between 2001 and 2004 before sharply decreasing in frequency between 2005 and 2007. They increased again between 2008 and 2010 and

this has continued right up to the most recent time period of 2011-2013. The pattern of use of sociological and psychological theories has remained relatively stable over the four time periods, with each discipline showing incremental increases. In contrast, management science theories were absent between 2001 and 2004 and again between 2005 and 2007. The number of articles using a management theory increased to four between 2008 and 2010 and reached five between 2011 and 2013. The situation is one in which economic theory still predominates but management theory is increasing in use.

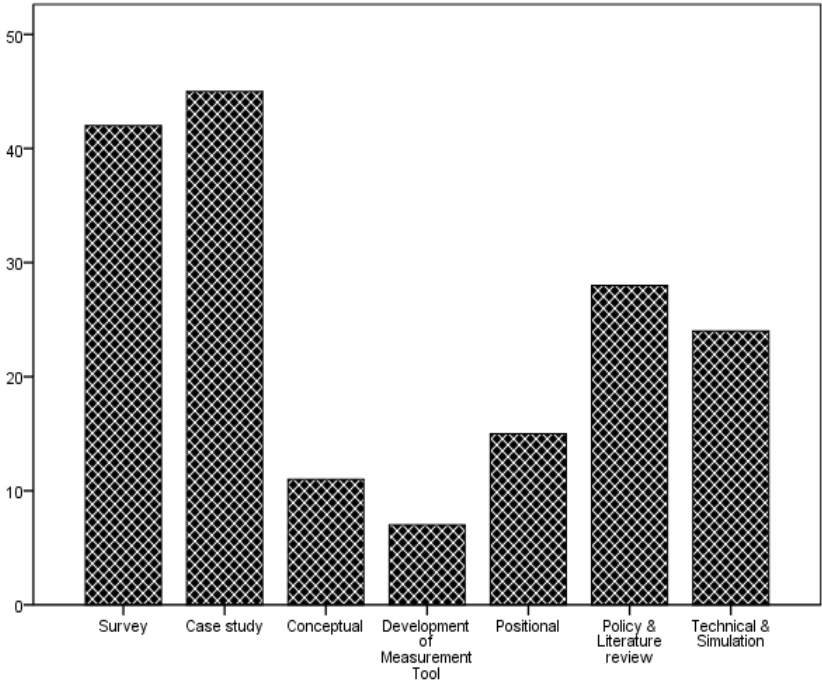
FIGURE 3
Disciplinary Influences between 2001 and 2013



The third question focused on paper type within public procurement research. By this is meant the form that each article assumed, whether survey, case study, policy & literature review, technical & simulation paper, positional paper, conceptual paper, or development of measurement tool. Each of the 172 articles was assigned to one of these seven categories. In instances where an article encompassed two or more of the above forms, categorisation is based on the dominant thrust of the article. To illustrate, in a literature review that incorporates interviews with subject matter experts, as is the case with Patil & Moleenar (2011), the article was coded as policy & literature review. The results, which are displayed in

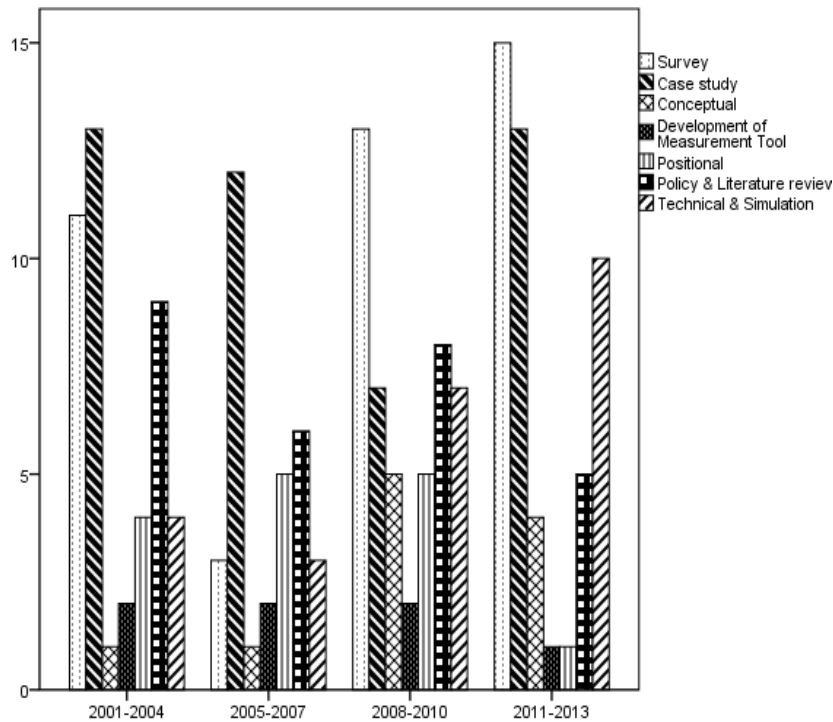
Figure 4 show that case studies are the most common paper type, closely followed by survey-based articles. Together, case studies and surveys accounted for half of all paper types (50.6%). Next are policy & literature reviews and then, in descending order, technical & simulation papers, positional papers, conceptual papers, and papers dedicated to the development of measurement tools. Additional analysis indicated a statistically significant relationship between paper type and the presence of theory ($p < .05$). Theoretically grounded articles were concentrated among conceptual, technical & simulation, case study, and survey paper types. All but one of the conceptual articles and approximately one out of every three technical & simulation, case study and survey articles were found to be theoretically grounded. Conversely, theory was found to be all but absent in policy & literature reviews, positional papers, and development of measurement tool papers. Only three of the twenty-eight policy & literature review papers employed a theoretical lens.

FIGURE 4
Paper Type in Public Procurement Research



Trends in paper type are discernible over time (Figure 5). Articles which report on survey data featured prominently over the time period as a whole. Between 2001 and 2004 there were eleven such articles, dropping to three in 2005-2007, and rising to thirteen and fifteen in the two subsequent time periods. A similar pattern is repeated with case studies. There were thirteen case study articles in 2001-2004, twelve in 2005-2007, seven in 2008-2010, and thirteen in 2011-2013. The number of conceptual papers increased in the two most recent time periods, going from just a single conceptual paper in each of the 2001-2004 and 2005-2007 periods to five papers in 2008-2010 and four in 2011-2013. A reversal of this trend applies to positional papers, which went from five in 2008-2010 to one in 2011-2013. Articles that review policy & literature are consistently present between 2001 and 2013. Technical & simulation papers show a strong increase, going from three in 2005-2007 to seven in 2008-2010 and ten in 2011-2013. Summarising, case studies and surveys have been the dominant paper types throughout the period under investigation, with policy & literature reviews maintaining a steady presence, and technical & simulation papers latterly increasing in frequency.

FIGURE 5
Trends in Paper Type between 2001 and 2013



Question four examined the focus of public procurement research. First, the topic of each of the 172 articles was recorded verbatim; for example, “the impact of e-procurement on organizational performance.” Next, articles were divided into one of three categories. The first category comprised research on the individual characteristics and motivations of public buyers (individual). The second category was made up of research that treats public procurement as an organizational process or that in some way relates to organizational decision making and organizational management (organizational). The third category consisted of regulatory and policy research in public procurement (macro perspective). The third category also included articles that discussed the development of the public procurement field. Results from this analysis are contained in Table 5. They show that research on the characteristics and behaviours of public buyers is low. Only 13 of the reviewed articles (7.5%) had a micro level of focus. Research that took a macro lens to public procurement is more common, with 55 articles (32%) falling into this category. This means that approximately 60% of research is oriented towards investigating the

organizational dimensions of public procurement. No significant change in research focus is discernible between the four time periods. To demonstrate, two articles focused on the individual characteristics of public buyers in 2001-2004 and this was repeated in 2011-2013; twenty-six articles assumed an organizational lens in 2001-2004 and thirty-two did likewise in 2011-2013; and there were sixteen articles that took a macro-level perspective in 2001-2004 and fifteen in 2011-2013.

Studies that assume an organizational level of analysis are diverse. They range from e-procurement impacts to sourcing suppliers and from designing procurement competitions to optimising tender evaluation systems. To assist our analysis and in the interests of clarity we broke down all articles with an organization-level focus into 11 sub-categories. These are also listed in Table 5. Research at the technology-procurement interface is the most prominent line of inquiry among all organization-focused public procurement studies. Issues surrounding contract administration, risk management, and contract performance collectively constitute the second major line of inquiry. After these, research foci are evenly spread among supplier management, organizational ramifications of contracting-out the provision of public services, configuration and management of the procurement function, costing & pricing models, and designing procurement competitions. To a lesser extent tender evaluation systems and sector-specific procurement strategies form research clusters. Logistics and project management have a marginal and singular presence respectively.

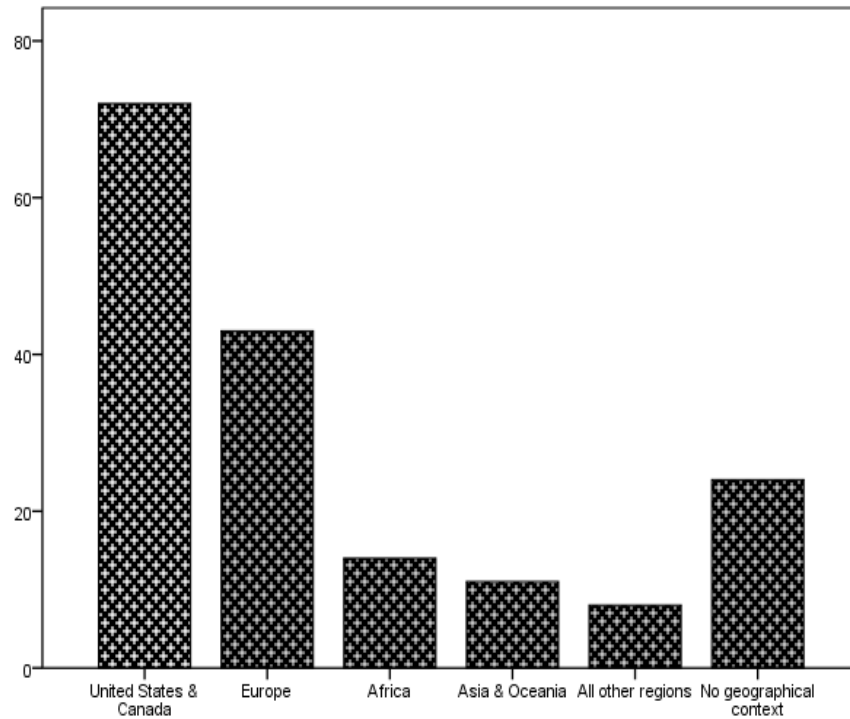
TABLE 5
Public Procurement Research Foci

	Frequency	Percentage
Individual (characteristics & motivations of public buyers)	13	7.5%
Organizational		
1. Technology-procurement interface	22	
2. Contract administration/risk management/ performance management	14	
3. Suppliers	10	
4. Contracting-out/outsourcing	10	
5. Organization/management of procurement function	10	

6. Costing & pricing models	10		
7. Procurement competition design	10		
8. Tender evaluation systems	7		
9. Sector-specific procurement strategies	7		
10. Logistics	3		
11. Project management	1		
Total		104	60.5%
Macro perspective (regulations & policies)		55	32%
Total		172	100%

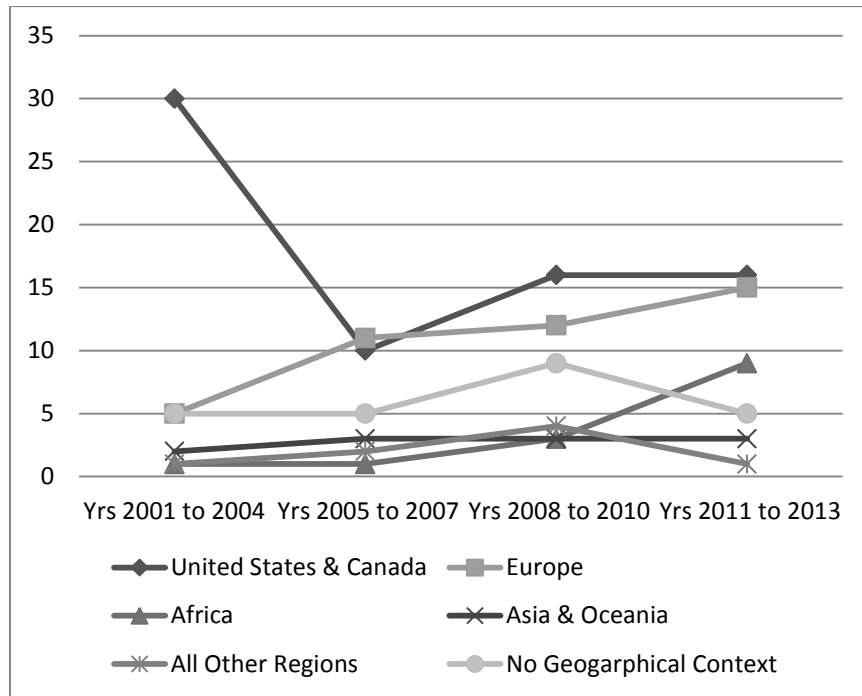
The fifth and final research question investigated the regional origins of public procurement research. Where applicable, the country or region referred to in the article was initially recorded. Eighty-six percent of the total number of articles was associated with some country or region. Individual countries or regions were grouped into five major regions of the world: United States & Canada, Europe (incl. Turkey), Africa, Asia & Oceania, and all other regions. As shown in Figure 6, the United States & Canada has been the primary source of public procurement research, accounting for seventy-two (42%) of the total number of articles. Europe has been the second most important region. It accounts for forty-three articles (25%). Africa comes third (8%), followed by Asia & Oceania (6%) and all other regions (4%). The latter includes Central & South America, Russia and inter-regional studies.

FIGURE 6
Regional Origins of Public Procurement Research



Additional analysis indicates that a gradual transition in the origins of public procurement research may be under way (Figure 7). United States & Canadian articles, while still dominant, have fallen from a high point of thirty between 2001 and 2004 to sixteen between 2011 and 2013. In contrast, articles originating in Europe have increased from five between 2001 and 2004 to fifteen between 2011 and 2013. Similarly, articles of African provenance have grown from just one between 2001 and 2004 to nine between 2011 and 2013. There is less change detectable in research from Asia & Oceania. Central & South America, Russia and the Middle East remain peripheral in terms of article contributions.

FIGURE 7
Regional Origins of Research between 2001 and 2013



DISCUSSION

This paper has sought to elucidate the role that theory has played in public procurement research in recent times. While theory is recognised as integral to disciplinary development in management science (Colquitt & Zapata-Phelan, 2007; DiMaggio, 1995; Hambrick, 2007; Whetten, 1989), little is known of its use in the public procurement field. With public procurement moving out of its formative phase, this gap in our knowledge is becoming less acceptable. As a research community we have reached the point at which evidence-based understandings of the extent and form of theory use are needed. The objective of the paper was to provide evidence and bring clarity to the question of theory's use in public procurement research. The results point to a relatively low level of theoretical application in public procurement research. Only 29 percent of reviewed articles were found to be theoretically grounded. To get a better sense of this figure it is instructive to compare the

extent of theorising in adjacent fields. In supply chain management the percentage of published research that is theoretical in form is estimated to be 37 percent by Chicksand et al., (2012) and 53 percent by Defee et al., (2010). Ostensibly, public procurement is under-theorised and has some way to go before it attains parity with supply chain management.

Before reading too much into these comparably higher figures, some caveats need to be introduced. Firstly, public procurement is not as established as supply chain management. Its acceptance as a management sub-field and its emergence as a profession are only recent occurrences (Matthews, 2005; Prier & McCue, 2009). It is to be expected that public procurement is less theoretically developed than supply chain management. Secondly, supply chain management is undergirded by a large and long established community of interest. The number of dedicated journals in the supply chain field can be taken as a proxy of its academic embeddedness. Again, it seems intuitive that the breadth and depth of supply chain management compared to public procurement should correlate with a higher incidence of theory. A third caveat centres on how theory is defined and measured. Depending on one's definition of theory, the results of a literature review can produce markedly different outcomes. Chicksand et al., (2012) made this same observation when noting the higher percentage figure of theoretically grounded articles reported by Defee et al., (2010) compared to their own. Thus, our determination that 29 percent of public procurement research is theoretically grounded is not strictly comparable with foregoing results on the extent of theory use in supply chain management or related fields.

Caveats aside, it is evident that most public procurement research is not theoretical; if by theoretical we mean the presence of a system that is capable of explaining and predicting individual and social phenomena. The challenge becomes one of increasing the number of theoretically grounded articles and striking a better balance between academic rigour and practitioner relevance. There are encouraging signs that this may be simply a matter of time, a matter of field maturation. Extrapolating from trends in our analysis, the frequency of theoretically grounded articles appears to be increasing with time. At the end of 2004 and 2007 theoretically grounded articles numbered 20 percent and 15 percent respectively. By 2010 this figure had reached 36 percent, and by 2013 it had climbed to 39 percent. If this upward trajectory is to continue apace, public procurement will strengthen its credentials and affirm its status as an important sub-field of management. It is important that

the continuation of this positive trend is not viewed as inevitable. As a research community we must guard against complacency and be proactive in consolidating the gains already made. It behoves all of us acting in various capacities – researchers, reviewers, editors - to seriously consider how theory can be deployed in ways that explicate our phenomena of interest. In the early, exploratory period of the public procurement field a laissez-faire attitude to theory may have been permissible. Now we are entering a phase where more diligence and rigour is both expected and required.

This leads us to contemplating what theories have been used in public procurement research. It also prompts us to reflect on what theories are notable by their omission. On the first point, we begin by acknowledging that public procurement is theoretically eclectic, reflective of input from across a diverse range of fields and disciplines. With different academic backgrounds come different theoretical perspectives, different methodological preferences, and different research interests. At the same time it is clear that theories belonging to the economics discipline, micro-economics specifically, have predominated. Micro-economic theories such as competitive auctions & bidding, principal-agent theory and transaction cost economic theory account for over half of all theoretical articles. Their prevalence signals a particular interpretation of public procurement: as a decision-making process that requires optimisation, as an impersonal and rule-bound transaction between two or more economic parties, and as something that is rational and amenable to quantification. While not all researchers will be comfortable with this interpretation or wish to adopt a micro-economic lens, the high incidence of articles using the same or similar micro-economic theories is helping to build a critical mass of knowledge. This is precisely what public procurement needs if further progress is to be made.

Theories that have their antecedents in sociology, psychology and management are also to be found. Their application is symbolic of other ways of seeing public procurement. Sociological and psychological lenses enable researchers to grapple with the human dimension of public procurement and address questions over the characteristics of public sector buyers and the factors that explain why they exhibit particular behaviours in response to organizational and environmental stimuli. Out of the four disciplines under which we categorise all listed theories, psychology is the least used. This corresponds to another finding, discussed below, that studies on public sector buyers themselves are comparably few. Sociological

theories appear in greater number and speak not only to the policy, governance and societal dimension of public procurement research but also to issues of organizational functioning and even public buyer characteristics. Management science theories have become more widely used in recent years. Whereas no management theory was detected for the first two time periods of our analysis, this had changed in the third and fourth periods so that management theory is now second only to economics. The utility of management theories can be seen, *inter alia*, in relation to the role and position of procurement within the organization. Indicative of its potential in this regard is the application of a theory of lean by Waterman & McCue (2012) and Schiele & McCue (2011) to explain efficiency imperatives in public sector purchasing. The observed preference for management theory in more recent years could be the result of a number of factors, including more management researchers engaging with public procurement or heightened awareness of the strategic potential of purchasing. Whatever the reasons, management theory is indispensable if we are to arrive at a more complete understanding of public procurement.

In the main, the theories identified throughout the review are as anticipated. More surprising are the theories, historical and contemporary, that do not feature at all, or that do so only to a limited degree. In the former group we note the absence of stakeholder theory as pioneered by Edward Freeman (1984), dynamic capabilities theory articulated by Teece, Pisano & Shuen (1997) and the much earlier bureaucratic management theory synonymous with Max Weber (1978). These by no means represent an exhaustive list of omitted theories, nor do we offer them as theoretical panaceas. Rather, we highlight them as among some of the more obvious omissions from public procurement scholarship to date. Taking just the first of these three examples, stakeholder theory lends itself to explaining why it is that public sector purchasing across jurisdictions increasingly concerns itself with accommodating small suppliers, fostering equality of opportunity and social cohesion, and safeguarding the natural environment. For public procurement research, the use of stakeholder theory would allow for a more forensic examination of how and under what circumstances various stakeholder interests are represented in national policies and organizational procurement practices.

The limited application of major theories is also noteworthy. Two, in particular, stand out for us. The first is supply chain management theory. It features only once in the 172 articles reviewed. Gianakis &

McCue (2012) used it to make sense of transformative procurement practices across four organizations. This is surprising given the overlap between procurement and supply chain management disciplines. The second is institutional theory. We identified only two instances of its application. Akenroye (2013) attempted to explain the emergence of social criteria in supplier selection decisions in terms of institutional forces bearing on organizations. Dickens-Johnson (2008) applied institutional theory's ideas on the structuration of organizational fields as a lens through which to understand public sector outsourcing trends. This is surprising as institutional theory has potential to inform public procurement research by explaining and predicting structural and behavioural isomorphism among organizations (Di Maggio & Powell, 1983), organizational avoidance of regulatory and policy pressures (Oliver, 1992), the institutionalization and deinstitutionalization of norms and operating standards (Hirsch, 1985), and the evolution of institutional fields (Hoffman, 1999). These are just two instances of theories that have yet to be fully exploited in public procurement research. There are many more besides. Greater awareness needs to be shown over how these theories can be deployed so as to enhance the validity and utility of public procurement research in the years ahead.

In addition to theory we examined three additional indicators of disciplinary development. The first of these related to paper type. Our findings reveal that case studies and surveys are dominant, with the frequency of both spiking in recent years. Similar patterns have been reported for operations management (Taylor & Taylor, 2009) and supply chain management (Chicksand et al., 2012). Policy & literature reviews, technical & simulation papers, positional papers, conceptual papers, and papers devoted to the development of measurement tools appear in order of descending frequency in our review. The range of paper types is testament to the catholic nature of public procurement research and its ability, up to this point, to accommodate plurality. Whether this is sustainable in the long-term is moot. Pfeffer (1993) has long argued that diversity and permissiveness in management research militates against its disciplinary development. Researchers in public procurement must also be alive to this potential pitfall. The finding that theory is clustered among conceptual, technical & simulation, case study and survey papers suggests that it is these which are deserving of greatest future attention. The corollary is paper types that do not use theory - policy & literature reviews, positional papers and development of measurement tools - should be deemphasised. As

the field grows these issues could act to resolve themselves whereby policy & literature reviews and positional papers are subsumed into empirical papers, as one possibility.

As with paper type, the focus of research in public procurement is arrayed from psychological motivators for public buyers lying at one end of the spectrum to international regulatory frameworks at the other. In their respective ways these individual and macro perspectives each constitute promising lines of inquiry and usefully serve as focal points for future research. The former is deserving of more attention than has been the case up to this point. While the public procurement field has received criticism over its ill-defined boundaries (Prier & McCue 2009), these two areas embody promising and clearly marked-out avenues for on-going inquiry. Between the individual buyer and the macro policy poles resides research that focuses on the organizational dimension to public procurement. If the aforementioned poles are relatively self-contained and coherent, the latter is less so. Accounting for 60 percent of all articles, it includes the procurement-technology interface, the design of procurement competitions, costing & pricing models, supplier engagement issues, and the structure and operation of purchasing departments, among other topics. It is at this organizational level that the diffuse nature of public procurement research is evident. It is also at this level that we see the various ways in which the foundational disciplines of economics, sociology, psychology and management are all brought to bear. Drawing on the work of Harland et al., (2006, p. 736), there is little evidence of an “explicit discipline debate” within public procurement. Instead, there are numerous lines of inquiry, some more productive than others. In the interests of coherency and disciplinary advancement, we suggest that the focus of future research is narrowed to fewer topics, preferably ones unique to our field. Promising lines for future inquiry include technology-procurement, contract management, and the design of procurement competitions and tender evaluation systems.

Finally, it is worth commenting on the geographic origins of public procurement research. There is no doubt that studies to date have originated mainly from the United States and Europe, with these two regions accounting for two out of every three articles reviewed. Public procurement is no different from management science in having a Western-centric character. Our trend analysis suggests that United States & Canadian input is plateauing while European and African input is rising. Looking into the future, we expect that contributions by academics and practitioners in developing countries will increase as

their economies grow and their systems of public administration and policy making evolve. At the same time, lesser developed regions stand to gain from the past experience, both good and bad, of countries and regions currently at the vanguard of public procurement. In this sense the more international the debate the better.

CONCLUSION

Our paper is a timely contribution to the debate on theory in public procurement. It also serves to complement previous field reviews, such as Thai's (2001) impressive history of public procurement policies and practices in the United States. It is not without its limitations, however. Firstly, our review is not exhaustive as we confine our search to a single journal. As a consequence, published research that appears in other scholarly outlets escapes our analysis. Future attempts at reviewing the theoretical base of public procurement may consider widening their search and take in three-five journals, as per Chicksand et al., (2012) and Defee et al., (2010), or even search a selection of the major academic databases so as to capture all published research. A word of warning, however; in embarking on such a task one should be mindful of the varied nomenclature that surrounds public procurement - public purchasing, public contracting, sourcing, procuring - and the difficulties this poses when undertaking any systematic literature review. Secondly, any theoretical review is immediately confronted with the quite vexing question of what is theory. We adhere to a standard and universally accepted definition of theory as a systemised structure capable of explaining and predicting individual and social phenomena (Colquitt & Zapata-Phelan, 2007; Hambrick, 2007). We acknowledge that in adhering to this definition we exclude what Weick (1995) has termed the "interim struggles" that go into making up a theory, such as the reporting of empirical patterns or the construction of frameworks and models. Future reviews may opt for a more malleable interpretation and definition of theory in which theoretical "works in progress" are included. Thirdly, methods to analyze the content of a large body of scholarly work are rarely flawless and invariably have some small degree of inaccuracy (Taylor & Taylor, 2009). Our review is no exception in this regard. Some articles had more than one research foci, which required us to make a judgement call on the dominant thrust of the article. Limitations notwithstanding, our paper is among the first to systematically analyze public procurement scholarship over the last decade.

The role of theory in public procurement research has gone largely unaddressed. Our aim in this paper was to determine the degree to which extant research is theoretically grounded and to shed light on what theories have been used to date. Our results indicate that the field is relatively under-theorised, but that this is beginning to change as more recent contributions attempt to anchor their studies in established theories. One may interpret the relatively low levels of theoretical application as akin to a liability of newness, and something that the field will surmount with age and experience. The same can be said of its numerous paper types and dispersed research foci, which may well start to coalesce with time. Significant strides have been made over the last decade in advancing the credentials of public procurement as a management sub-field. We are now reaching the point where it is necessary to push on if we are to transition from a “populist science” to a “pragmatic science” in which rigour and relevance are equally balanced (Anderson et al., 2001). The onus lies with all of us to make sure that ten-fifteen years from now we can look back at yet more miles covered on the road to disciplinary credibility.

NOTES

1. There are a number of other publications related to public procurement. However, these are either practitioner periodicals, such as *Government Procurement*, or focused on case law related to public procurement, such as *Public Procurement Law Review*, *Procurement Lawyer*, and *European Procurement and Public Private Partnership Law Review*.
2. Volume 13 (2013) of the *Journal of Public Procurement* was not available at the time of writing and is not included as part of our review and analysis.

REFERENCES

- Agarwal, R., & Hoetker, G. (2007). "A Faustian Bargain? The Growth of Management and its Relationship with Related Disciplines." *Academy of Management Journal*, 50 (6): 1304-1322.
- Akenroye, T.O. (2013). An Appraisal of the Use of Social Criteria in Public Procurement in Nigeria." *Journal of Public Procurement*, 13 (3): 364-397.
- Anderson, N., Herriot, P., & Hodgkinson, G.P. (2001). "The Practitioner-Researcher Divide in Industrial, Work and Organizational Psychology: Where Are We Now and Where Do We Go From Here?" *Journal of Occupational and Organizational Psychology*, 74 (4): 391-411.
- Apte, A., Apte, U.M., & Rendon, R.G. (2011). "Services Supply Chain in the United States Navy: An Empirical Study of Current Management Practices." *Journal of Public Procurement*, 11 (4): 538-562
- Aram. J.D., & Salipante, P.F. (2003). "Bridging Scholarship in Management: Epistemological Reflections." *British Journal of Management*, 14 (3): 189-205
- Arrowsmith, S. (2010). "Horizontal Policies in Public Procurement: A Taxonomy." *Journal of Public Procurement*, 10 (2): 149-186.
- Atkinson, C.L., & Sapat, A. K. (2012). "After Katrina: Comparisons of Post-Disaster Public Procurement Approaches and Outcomes in the New Orleans Area." *Journal of Public Procurement*, 12 (3): 356-385.
- Bailey, J., & Ford, C. (1996). "Management as Science Versus Management as Practice in Postgraduate Business Education." *Business Strategy Review*, 7 (4): 7-12.
- Chicksand, D., Watson, G., Walker, H., Randor, Z., & Johnson, R. (2012). Theoretical Perspectives in Purchasing and Supply Chain Management: An Analysis of the Literature." *Supply Chain Management: An International Journal*, 17 (4): 454-72.
- Christensen, C.M., & Raynor, M.E. (2003). "Why Hard-Nosed Executives Should Care About Management Theory." *Harvard Business Review*, 81 (9): 67-74.
- Colquitt, J.A., & Zapata-Phelan, C.P. (2007). "Trends in Theory Building and Theory Testing: A Five Decade Study of the Academy

of Management Journal.” *Academy of Management Journal*, 50 (6): 1281-1303

Defee, C., C. Williams, B., & Randall, S. (2010). “An Inventory of Theory in Logistics and SCM Research.” *The International Journal of Logistics Management*, 21 (3): 404-489.

Dickens Johnson, M. (2008). “Current Trends of Outsourcing Practice in Government and Business: Causes, Case studies and Logic.” *Journal of Public Procurement*, 8 (2): 248-268.

DiMaggio, P.J. (1995). “Comments On What Theory is Not.” *Administrative Science Quarterly*, 40 (3): 391-397.

DiMaggio, P.J., & Powell, W. (1983). “The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields.” *American Sociological Review*, 48: 147-160.

Dimitri, N. (2013). “Best Value for Money in Procurement.” *Journal of Public Procurement*, 13 (2): 149-175.

Flynn, A., McKeivitt, D., & Davis, P. (2013). “The Impact of Size on Small and Medium-sized Enterprise Public Sector Tendering.” *International Small Business Journal*. [Online].

Freeman, R.F. (1984). *Strategic Management: A Stakeholder Approach*. London, UK: Pitman.

Gardenal, F. (2013). “A Model to Measure E-Procurement Impacts on Organizational Performance.” *Journal of Public Procurement*, 13 (2): 215-242.

Ghoshal, S. (2005). “Bad Management Theories are Destroying Good Management Practices.” *Academy of Management Learning and Education*, 4 (1): 75-91.

Gianakis, G., & McCue, C. (2012). Supply Management Concepts in Local Government: Four Case Studies. *Journal of Public Procurement* 12 (1): 109-141.

Glock, C.H., & Broens, M.G. (2013). “Size and Structure in the Purchasing Function: Evidence from German Municipalities.” *Journal of Public Procurement*, 13 (1): 1-38

Gulati, R. (2007). “Tent Poles, Tribalism, and Boundary Spanning: The Rigor-Relevance Debate in Management Research.” *Academy of Management Journal*, 50 (4): 775-782.

- Gunther McGrath, R. (2007). "No Longer a Stepchild: How the Management Field Can Come into its Own." *Academy of Management Journal*, 50 (6): 1365-1378.
- Grimm, R., & Thai, K.V. (2011). "Editorial: 10th Anniversary Celebration". *Journal of Public Procurement*, 11(1): i-iv
- Hambrick, D. (2007). "The Field of Management's Devotion to Theory: Too Much of a Good Thing?" *Academy of Management Journal*, 50 (6): 1346-1352.
- Harland, C.M., Walker, H., Phillips, W.E., Caldwell, N.D., Johnsen, T.E., Knight, L.A., & Zheng, J. (2006). "Supply Management: Is it a Discipline?" *International Journal of Relations and Production Management*, 26 (7): 730-753.
- Hirsch, P.M. (1985). "From Ambushes to Golden Parachutes: Corporate Takeovers as an Instance of Cultural Framing and Institutional Integration." *American Journal of Sociology*, 91 (4):800-837.
- Hirschman, A.O. (1970). "The Search for Paradigms as a Hindrance to Understanding." *World Politics*, 22 (3): 329-343.
- Hoffman, A. (1999). "Institutional Evolution and Change: Environmentalism and the U.S. Chemical Industry." *Academy of Management Journal*, 42 (4): 351-71.
- Hommen, L., & Rofstam, M. (2009). "Public Procurement and Innovation: Towards a Taxonomy." *Journal of Public Procurement*, 9 (1): 17-56.
- Ketchen, D., & Hult, G.T. M. (2011). "Building Theory about Supply Chain Management: Some Tools from the Organizational Sciences." *Journal of Supply Chain Management*, 47 (2): 12-18.
- Lee, M J. (2010). "An Exploratory Study on the Mature Level Evaluation of E-Procurement Systems." *Journal of Public Procurement*, 10 (3): 405-427.
- Lesniak, A., & Zima, K. (2013). "Design and Build Procurements in the Polish Public Sector." *Journal of Public Procurement*, 13 (3): 315-336.
- Matthews, D. (2005). "Strategic Procurement in the Public Sector: A Mask for Financial and Administrative Policy." *Journal of Public Procurement*, 5 (3): 388-399.

- McCrudden, C. (2007). *Buying Social Justice: Equality, Government Procurement and Legal Change.* Oxford, UK: Oxford University Press.
- McCue, C., & Gianakis, G. (2001). "Public Purchasing: Who's Minding the Store?" *Journal of Public Procurement*, 1 (1): 71-95.
- McCue, C., & Prier, E. (2008). "Using Agency Theory to Model Cooperative Public Purchasing." *Journal of Public Procurement*, 8 (1): 1-35.
- McCue, C., & A, Roman. (2012). "E-Procurement. Myth or Reality?" *Journal of Public Procurement*, 12 (2): 189-220.
- McGahan, A.M. (2007). "Academic Research that Matters to Managers: On Zebras, Dogs, Lemmings, Hammers, and Turnips." *Academy of Management Journal*, 50 (4): 748-753.
- McKevitt, D., Davis, P., Woldring, R., Smith, K., Flynn, A., & McEvoy, E. (2012). "An Exploration of Management Competencies in Public Sector Procurement." *Journal of Public Procurement*, 12 (3): 333-355
- Meyer. J., & Rowan, B. (1977). "Institutionalized Organizations: Formal Structure as Myth and Ceremony." *American Journal of Sociology*, 83 (2): 340-363.
- Meyer. J., & Scott, R. (1983). *Organizational Environments: Ritual and Rationality.* Beverly Hills, CA: Sage Publications.
- Miner, J.B. (1984). "The Validity and Utility of Theories in an Emerging Organizational Science." *Academy of Management Review*, 9 (2): 296-306.
- Miller, D. (2007). "Paradigm Prison, or in Praise of A-theoretic Research." *Strategic Organization*, 5 (2): 177-184.
- Murray, G. (2009). "Public Procurement Strategy for Accelerating the Economic Recovery." *Supply Chain Management: An International Journal*, 14 (6): 429-434.
- Ntayi, J.M., Ahiauzu, A., & Eyaa, S. (2011). "Psychological Climate, Catharsis, Organizational Anomie, Psychological Wellness and Ethical Procurement Behavior in Uganda's Public Sector." *Journal of Public Procurement*, 11 (1): 1-32.
- Oliver, C. (1992). "The Antecedents of Deinstitutionalization." *Organization Studies*, 13 (4): 563-588.

- Patil, S.S., & Molenaar, K.R. (2011). "Risks Associated with Performance Specifications in Highway Infrastructure Procurement." *Journal of Public Procurement*, 11 (4): 482-508
- Pfeffer, J. (1993). "Barriers to the Advance of Organizational Science: Paradigm Development as a Dependent Variable." *Academy of Management Review*, 18 (4): 599-620.
- Prier, E., & McCue, C. (2009). "The Implications of a Muddled Definition of Public Procurement." *Journal of Public Procurement*, 9 (3/4): 326-370.
- Prier, E., McCue, C., & Behara, R. (2010). "The Value of Certification in Public Procurement: The Birth of a Profession." *Journal of Public Procurement*, 10 (4): 512-540
- Qiao, Y., Thai, K.V., & Cummings, G. (2009). "State and Local Procurement Preferences: A Survey." *Journal of Public Procurement*, 9 (3/4): 371-410.
- Roman, A.V. (2013). "Public Policy and Financial Management through E-Procurement: A Practice-Oriented Normative Model for Maximising Transformative Impacts." *Journal of Public Procurement*, 13 (3): 337-363
- Schapper, P., Veiga, J., Malta, V., & Gilbert, D. (2006). "An Analytical Framework for the Management and Reform of Public Procurement." *Journal of Public Procurement*, 6 (1): 1-26.
- Schiele, J.J. (2005). "Improving Organizational Effectiveness through Meaningful Involvement of Municipal Purchasing Departments – Case Studies from Ontario, Canada." *Journal of Public Procurement*, 5(2): 145-163.
- Schiele, J.J., & McCue, C. (2011). "Lean Thinking and its Implications for Public Procurement: Moving Forward with Assessment and Implementation." *Journal of Public Procurement*, 11 (2): 206-239.
- Seale, C. (2000). *The Quality of Qualitative Research*. London, UK: Sage Publications.
- Simon, H.A. (1967). "The Business School: A Problem in Organizational Design." *Journal of Management Studies*, 4 (1): 1-16.
- Snider, K.F. (2006). "Procurement Leadership: From Means to Ends." *Journal of Public Procurement*, 6 (3): 274-294.

- Snider, K.F., & Rendon, R. G. (2008). "Public Procurement Policy: Implications for Theory and Practice." *Journal of Public Procurement*, 8 (3): 310-333.
- Sutton, R. I., & Staw. B.M. (1995). "What Theory is Not." *Administrative Science Quarterly*, 40 (3): 371-384.
- Taylor, A., & Taylor, M. (2009). "Operations Management Research: Contemporary Themes, Trends and Potential Future Directions." *International Journal of Operations and Production Management*, 29 (12): 1316-1340
- Teece, D.J., Pisano, G., & Shuen, A. (1997). "Dynamic Capabilities and Strategic Management." *Strategic Management Journal*, 18 (7): 509-533.
- Thai, K.V. (2001). "Public Procurement Re-Examined." *Journal of Public Procurement*, 1 (1): 9-50.
- Tranfield, D., Denyer, D., & Smart, P. (2003). "Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review." *British Journal of Management*, 14 (3): 207-222.
- Tushman, M., & O'Reilly, C. (2007). "Research and Relevance: Implications of Pasteur's Quadrant for Doctoral Programs and Faculty Development." *Academy of Management Journal*, 50 (4): 769-774.
- Van Valkenburg, M., & M.C.J. Nagelkerke. (2006). Interweaving Planning Procedures for Environmental Impact Assessment for High Level Infrastructure with Public Procurement Procedures." *Journal of Public Procurement*, 6 (3): 250-273.
- Van de Ven, A.H. (1989). "Nothing is Quite So Practical as a Good Theory." *Academy of Management Review*, 14 (4): 486-489.
- Waterman, J., & McCue, C. (2012). "Lean Thinking within Public Sector Purchasing Department: The Case of the UK Public Service." *Journal of Public Procurement*, 12 (4): 505-527.
- Weber, M. (1978). *Economy and Society*. University of California Press, Ca.
- Weick, K.E. (1995). "What Theory is Not, Theorizing Is." *Administrative Science Quarterly*, 40 (3): 385-390.
- Whetten, D.A. (1989). "What Constitutes a Theoretical Contribution?" *Academy of Management Review*, 14 (4): 490-49.

Withey, J. J. (2011). "Small Manufacturing Businesses: Their Interest in Securing Contracts from Public Agencies." *Journal of Public Procurement*, 11 (3): 388-402.