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Deconstructing Scholarship:

An Analysis of Research Methods Citations in the Organizational Sciences

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Abstract

Understanding the variety of different ways in which citations contribute to scholarly writing is an important part of the tacit knowledge possessed by experienced researchers. There is, however, little published work to help novice researchers develop this aspect of their craft. In order to address this issue we present a framework of citation usage derived from inductive analysis of a selection of published papers, and emphasize its relevance for research methods topics. This framework provides a template for structuring citation usage in academic research and a useful developmental tool for novice researchers.

Few would argue that one of the essential components in the repertoire of a scholar in the field of management and organization is the ability to draw upon literatures from diverse social-scientific sources to underpin methodological choices and to construct theoretically-based arguments that are clear, logical and internally consistent. Evidence of concern for rigour in relation to the acknowledgement and critical appraisal of prior published work is widespread. For example, most research teaching programmes and texts allocate substantial space to the provision of advice on finding and using literature. Books on writing for academic publication (for example Huff, 1999) and, more specifically, on working with literature (for example, Hart, 1998) offer much hard-won advice on this essential aspect of the work of a scholar. Further, some seasoned editors of leading journals have taken the trouble to explain the close relationship between good theorizing and success in publication (for example Daft, 1985; Stewart, 2002; Whetten, 1989).

Because literature is used in different ways for different purposes, there can be no single approach or format for what is often vaguely called a 'literature review'. As teachers of research students we are aware that effective and appropriate use of literature can be one of the most difficult aspects of scholarship to develop. Our experience shows that some newcomers to academia form an impression that academic writers strive to achieve an impression of scholarship by being as wordy and obscure as possible. Yet novice researchers must learn that in good quality academic writing the reverse is true, since only by using the clearest and most direct language can authors succeed in putting across to an international audience a complex argument. In addition to complexity of argument, a further layer of complication unique to the academic style comes from the need to make clear and appropriate links to existing literature. Such links provide a variety of information to other scholars,

including establishing precisely and specifically the writer's position in relation to that of other authors in their field. Those who seek to enter an academic discourse must immerse themselves in journals, books and databases to identify research gaps, pin down theoretical frameworks and justify the selection of research methodologies and variables. Through the study of exemplary writing they are able to develop an understanding of the relationship between the purpose of a particular research paper and the structural characteristics embodied in its paragraphs, sentences and citations. They gain knowledge of the variety of ways in which references contribute to arguments, thereby learning to use literature to construct their own arguments. For those who already possess the tacit and experiential knowledge of scholarly citation it is easy to forget just how difficult that knowledge is to acquire.

In this paper we take the individual citation as the unit of analysis to describe citation usage in a variety of empirical and theoretical papers published in high quality journals in the organizational sciences. Our primary aim has been to produce a framework of citation usage that sets out as clearly as possible the variety of reasons why authors cite the work of others, and how citation usage shifts as the structure of a particular article unfolds. Our intention is that this framework may be used by doctoral students and other novice researchers to help them understand how experienced writers craft their work, and to help them learn how to transfer qualities of scholarly writing into their own work. Because of the focus of Organizational Research Methods we place special emphasis on those aspects of our research and its findings related to citations involving research methods issues.

In the following sections we provide an overview of literature on writing academic papers, and describe the analytical process of our study. We present in table form four aspects of our results: (1) the framework, consisting of a classification of 25 citation purposes

arranged over the three main components of typical empirical papers (theoretical background; research methods; results and discussion); (2) examples of each of the eight citation purposes that relate to research methods; (3) an analysis of the citations relating to research methods issues in each of the papers in our study sample; (4) the key structural elements of one of the papers revealed by the citation analysis. We discuss the implications of our findings for researchers and offer a guide to using the approach with classes of students.

Using Citations

The literature on the writing of academic papers and the use of citations falls into three broad groups. The first is concerned with the challenge of creating literature reviews and synthesising prior research (for example Baker, 2000). The interest of the second group is in the production of high quality academic papers (for example Bem, 2002). The third undertakes critiques of a particular work (for example Kilduff 1993).

In the main, references to citation usage are concerned with writing etiquette relating to format and the use of parentheses (Bem 2002; Carter 1987). However in some of these accounts we can discern three practices involving the use of citations in academic writing. The first practice is that citations are used as a form of shorthand or code which allows the author to connect their paper with existing studies (Carter, 1987). This raises the question of whether or not the citation is being used in a way which accurately reflects the content of the cited paper. As a reader we are required to trust the author in terms of whether or not work cited has been read and understood. Baker (2000) advises his readers to be careful about making such assumptions; invariably, in his view, the author has neither read nor understood the cited work. He makes the point that to avoid compounding citation errors authors should only cite texts which they themselves have read.

The second practice is that citations are used selectively or partially in a way that serves to strengthen the positioning of the paper in which they appear. This could be within the overall framing of the work or in specific aspects of methodology. In his deconstruction of March and Simon's (1958) seminal text Organizations Kilduff (1993) suggests that prior research cited in the text was positioned in a way that was inconsistent with the characteristics of the original work, the purpose being to create the impression of a gap in the literature within which March and Simon could position their work. With regard to the selection of methodological approaches Yin, Bingham & Heald (1976) note that citations concerning prior uses of methodology are made very specifically to compare methodological details, for example the use of particular kinds of variables, whereas the overall research design may be very different to that in the cited research. This can create a potentially misleading impression of similarity whereas in reality the two papers may have many fundamental differences.

The third practice is that citations are used only to support a clear explanation of the research approach or theoretical position; they are in no way substitutes for providing such accounts. In his review of 111 papers which were rejected from Academy of Management Journal or Administrative Science Quarterly, Daft (1985) notes that one of the problems regarding inadequate descriptions of theory and method was that authors would simply provide a list of citations as justification, without a clear explanation as to why the particular approach was appropriate to the author's situation. In other words, although explanation is often improved by their use, citations in themselves are not sufficient.

Method

Because of the lack of existing frameworks derived from systematic research into citation usage we chose to follow an inductive process, using 'data-driven generalization'

(Langley, 1999: 708), to build a list of citation categories from scratch. This process worked as follows. Having selected the first published article for analysis, we examined sequentially each of its individual citations, applying the question, 'what is the author's purpose in using this citation?' Each citation was assigned a descriptive category according to its purpose, consisting of a leading verb followed by a subject. Each category was given a shorthand code indicating the leading verb, whether the citation related to theory (T), methods (M) or results (R), and a distinguishing number. Four examples of codes and categories are (1) AckT1: Acknowledge the source of an idea or concept; (2) AdvM3: Advocate variables or measures; (3) EstT4: Establish the absence or shortcomings of existing theory; (4) ClaR3: Claim that a study's results extend knowledge. Following the constant comparison method of analysis described by Glaser and Strauss (1967) each citation was compared with others already categorised. Following the inductive categorization logic common to this style of analysis each citation was either allocated to an existing category, with or without modification of that category, or assigned to a new category. Our aim was to produce a list of categories representing the variety of citation purposes that would be parsimonious enough to be comprehensible and memorable as a whole, and at the same time detailed enough to be useful as a guide to understanding how the combination of different types of citation usage underpin the structure of a research paper.

Working as a team of two our approach was to choose an article, analyze it individually, and then come together to discuss and agree the categorization of the purpose of each citation in the article and thus to develop the generalized list of codes and categories. We then selected the next paper in the sequence. The process of development of the list of categories was iterative, with some categories reconceptualized or divided or combined with other categories. As papers in the sequence gave rise to modifications to the list of categories

earlier analyses were revisited. We analyzed a total of six papers selected from a range of high-quality journals. The order in which we studied the articles, the logic applied to their selection, and the development of the 25 categories was as follows:

Paper 1: Elsbach and Kramer (2003) is a qualitative study of how movie industry decision-makers judged creative potential in others. The paper was chosen as our starting point because it was a typical high-quality article that followed the classic structure of a published field study of organizational phenomena: introduction, theoretical background, method, results, and discussion.

As an example of our analysis, consider the purpose of Elsbach and Kramer's citation of Kasof in the following sentence:

> 'A more recent and fruitful approach, therefore, has been to use social judgement theory and research to understand the process of creativity assessment (Kasof, 1995a).' (Elsbach and Kramer, 2003: 284)

The authors are drawing on the prior work of Kasof to support their advocacy of the use of social judgement theory as a basis for studying creativity assessment. We categorized this citation 'Advocate a theory or theoretical concept (AdvT1)'.

This paper's citations represent 12 of the 25 categories in the final version of the list of categories (Table 1).

Paper 2: Green, Welsh & Dehler (2003) was selected for being a quantitative study published in the same journal as Paper 1. Final analysis of Paper 2 resulted in the addition of six new categories to Table 1 (AckM1, AdvM2, EstT1, EstR1, InfM1, and ExpR1). Some of these

new categories arose from the quantitative nature of the study. Others were revealed as citations were used in different ways to support the authors' arguments.

Paper 3: Danneels (2002) is published in Strategic Management Journal, a different American journal. This paper added four new categories to Table 1 (AckT1, AdvM4, DefT1 and IllT1).

Paper 4: Townley, Cooper & Oakes (2003) is published in a European journal. Two new categories (EstT3 and ExpT1) were added.

Paper 5: Wang & von Tunzelmann (2000) is a conceptual paper rather than the report of a field study. No new categories were added.

Paper 6: As a check for the soundness of our analysis we analysed Hitt, Bierman, Shimizu & Kochhar (2001), a different quantitative study from Academy of Management Journal. One new category (AdvM3)was added.

Results

The final list of codes and categories is shown in Table 1. The rows relate to the verbs that describe the authors' purpose (advocate, define, illustrate, and so forth). The columns represent three distinct components of a typical theoretically-informed empirical study: theoretical background, method, results and discussion.

Insert Table 1 about here

In Table 2 we illustrate our categorization with examples of each category that relates to citations involving research methods issues. A full list of examples relating to all categories is available on request.

Insert Table 2 about here

To enable the reader to see in detail our approach, and to examine the structure of the research methods sections of the sources that informed our generalized results, we include in Table 3 the analysis of research methods citations from each of the six papers..

Insert Table 3 about here

We have described our analysis of six published studies, and presented our results as a framework of categories that shows the range of purposes for which citations are used in scholarly publication. In developing the framework we have, of course, encountered the kinds of categorization difficulties commonly faced by qualitative researchers. Even with such a clear and unambiguous unit of analysis as the citation two types of problem had to be overcome. The first type of problem arose from the multilayered and contextual nature of citation purpose. Take the following example:

> Sentence 1**:** 'Following this logic, we chose the qualitative approach of "theory elaboration" (Lee, Mitchell, & Sablynski, 1999). (Elsbach and Kramer, 2003: 285-6)

The citation by Elsbach and Kramer of Lee et al. is an acknowledgement of the source of a research approach (AckM1). However, as the next sentence in the paper reveals, the approach is first acknowledged in order to advocate it as particularly suited to the kind of study that is the subject of Elsbach and Kramer's paper.

> Sentence 2**:** 'According to Lee and his colleagues, theory elaboration results in extensions to theory in cases where "preexisting conceptual ideas or a preliminary model [notions about the use of prototypes in creativity judgements, for example], drives the study's design" (1999:164).' (Elsbach and Kramer, 2003: 285-6)

The rule of thumb we applied to such classification choices was to follow this logic: if a citation in category A (in this case acknowledge the source of a research approach) is serving the purpose of category B (in this case advocate a research approach) use category A rather than B.

The second type of problem we faced was dealing with citations that could in themselves be regarded as ambiguous. Take, for example, the following sentence:

> 'Because we had both cross-sectional (firms) and time series (years) data, we used a panel data methodology, using the least squares dummy variable (LSDV) model (Hsiao, 1986; Sayrs, 1989).' (Hitt et al., 2001)

Both citations (Hsiao, 1986 and Sayrs, 1989) refer to methods textbooks. We chose to code them both AckM1: Acknowledge the source of a research approach or instrument. But do

they both provide support for the whole argument presented in the sentence, that a panel data methodology using LSDV is to be used with data that is both cross sectional and time series (AdvM1: Advocate a research procedure or process)? Or do they, as we interpreted, explain how to apply an LSDV model (AckM1: Acknowledge the source of a research approach or instrument)? Or do they each do one or more of these things?

To take another example, Townley, Cooper and Oakes's (2003) study draws on data from primary and secondary sources. We coded citations of secondary sources EstM1: Establish published material used as data. Yet at times it is less than clear whether a cited secondary source is offered as evidence of a phenomenon (EstM1) or simply an acknowledgement of the source of a theoretical concept (AckT1). Consider the following three examples from Townley, Cooper and Oakes, 2003:

> Example 1: In addition to pressures from the Auditor General's office, there were also internal pressures for isomorphism between departments (DiMaggio and Powell 1983).'

> Example 2: As part of their initiatives, the Albertan government was heavily influenced by reinventing government initiatives from other jurisdictions (Osborne and Gaebler 1993; Douglas, 1993).

> Example 3: 'Since 1979, the Auditor General's Annual Reports had regularly recommended that the provisional government design and implement a system for promoting effectiveness measurement (Gendron et al. 2001).'

In Example 1 it is, for several reasons, obvious that the citation of DiMaggio and Powell is not included because those authors had said anything about isomorphism between departments in the Provincial Government of Alberta, but is simply an acknowledgement of their association with the concept of isomorphism. Similarly, a glance at the Osbourne and Gaebler (1993) reference (the book Reinventing Government. New York: Plume) shows that the citations in Example 2 are serving a similar purpose in relation to the concept of government reinvention. With regard to Example 3, however, readers new to the literature might not know whether the citation of Gendron et al. is establishing where the factual matter of the sentence came from (EstM1) or whether it is acknowledgement of the source of the concept of effectiveness measurement (AckT1). Many readers would need to get hold of the original source to establish that it is, in fact, the former. We found many examples of opportunities for greater clarity over the exact purpose of a citation.

Discussion

Our study is intended to help researchers – particularly research students – learn the craft of scholarly writing. Following Daft, who argues that 'no one can learn to write an excellent paper based on examples of failure.' (1985: 193), we have studied only published papers from highly regarded journals. In our teaching of doctoral students we have explored two different ways of applying the use of citation analysis. First, we asked a class of doctoral students to analyze without the help of the classification framework an article we had selected, and to come up with their own framework. Most students found this extremely difficult, and some were initially unable to distinguish any differences of purpose between citations. Despite the difficulty of the task, however, the students claimed that the exercise provided a tantalizing glimpse of something beyond their immediate grasp, even though progress in improving their understanding of citations was slow.

Our second approach was to ask a different class of doctoral students to analyze a paper using the classification framework as a guide. Following this approach students made faster progress and claimed to have enlightened their appreciation of an aspect of scholarship that had been, at best, murky. We have continued to develop this exercise with successive cohorts of students. The half-day session is now conducted as follows:

1 Ask students to read a particular paper in preparation for the class session, paying particular attention to the use of theory and methods, and the claiming of theoretical and practical implications.

2 In class, provide the framework (Table 1), a full list of examples, and a blank template listing all the citations in the selected paper with space for writing in codes and descriptions (such a template for the methods sections of the Hitt et al. paper is included as Appendix A. A complete template for the full paper is available on request).

3 To familiarize the class with the approach, initiate a discussion of the purpose of three or four selected citations, using the framework as a guide.

4 Allow the class to continue to work on the exercise in small groups.

5 Hold a plenary discussion, allowing agreements and disagreement over classifications to deepen their understanding of citation usage.

The students' learning from the above exercise is consolidated in a follow-up exercise in which they are asked to bring to the class an abstract of their own emerging research ideas in the form of a series of about five statements, each supported by one or two references where appropriate, leading up to a research question. Each student's abstract is discussed in turn, providing opportunities to develop their skills of both building an argument and offering constructive criticism of arguments made by their peers. The students claim that the citation analysis exercise gives them more confidence in using citations to support scholarly

argument, following the kind of steps laid down by the exemplary writer whose work they had deconstructed.

For experienced authors those steps are probably already clear. As the Hitt *et al*. (2001) example shows, Hitt and his colleagues work their way through the established structure of a quantitative Academy of Management Journal paper. In this example the citation analysis reveals that the structure of the paper consists of six stages, summarized in Table 4. Table 4 also shows which citation categories are used in each of the six stages of the paper.

Insert Table 4 about here

The sequence of stages outlined in Table 4 divides this paper into three key sections: theoretical background (stages 1 & 2), method (stages 3 & 4) and results and discussion (stages 5 & 6). However, within each of these sections the usage of citations shifts between the stages. In the case of theoretical background it moves from citations which establish and define the broad concepts of the study (stage 1) through to establishing more specific variables and relationships used for empirical investigation (stage 2). In the presentation of the methodology the paper moves from providing a case for the research context and sampling approach (stage 3) through to the selection of specific measures and their validation (stage 4). In the results and discussion section the usage of citations again moves from acknowledging how the results connect with existing studies (stage 5) to be followed by a specific statement of how this particular study has moved our understanding from prior research (Stage 6). Much of the literature on writing suggests an ‘hourglass’ structure (Bem,

2002), starting broadly, focusing down to specific variables for the empirical study and then broadening out with implications of the study at the end. The analysis of citation usage shown in Table 4 suggests a different kind of structure. In each of the three sections citation usage starts broad and narrows down to increasingly specific issues such as the use of variables, analysis tests and claims regarding the contribution of the research. Citation usage therefore shifts from the broad to the specific providing a structure which resembles three consecutive funnels as opposed to the classic hourglass shape. Whilst these observations are drawn from the analysis of one particular paper, they do suggest a generic and explicit map as to how citations can be used to support the crafting of an empirical research paper.

Our coding scheme provides structure and specific guidance on the many different purposes for which citations are used. The complexity and detail of the scheme is consistent with the literature on academic writing regarding the selective and partial way in which citations are used. However, the many different ways in which citations are used also suggests that compounded citation errors (where a citation becomes corrupted following multiple uses) are likely to be caused by the characteristic that each author uses the citation in a highly selective and partial way, thereby creating a situation which is then misinterpreted by subsequent authors. The best advice therefore must always be that if you are going to use a citation make sure you read the paper first.

In conclusion we suggest that understanding citation usage and the structure of academic papers is greatly enhanced by the systematic, detailed study of exemplary work. The benefits of such analysis lie not only in attaining deep comprehension of the specific published work studied, but also in developing the ability to deconstruct the paper into a series of stages where citations are used to funnel the discussion into a specific theoretical

position, research method, and contribution. The citation framework illustrated in Table 4 is offered not as a recipe, but as way of better understanding the ingredients and the possible ways in which they may be combined in the development of academic writing.

References

(Note: Refer to source papers for citations listed in Tables 2, Table 3 and Appendix A)

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Bem, D. J. (2002). Writing the empirical journal article. In J. M. Darley, M. P. Zanna, and H. L. Roediger III (Eds.), The compleat academic: A career guide. Washington DC: American Psychological Association.

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Daft, R. L. (1985). Why I recommend that your manuscript be rejected and what you can do about it. In P. J. Frost & L. L. Cummings (Eds.), Publishing in the organizational sciences: 193-209. Homewood, Ill: Irwin.

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Glaser, B.G. & Strauss, A.L. (1967). The discovery of grounded theory: Strategies for qualitative research. New York: Aldine.

Green, S. G. Welsh, M. A., & Dehler, G. E. (2003) Advocacy, performance, and threshold influences on decisions to terminate new product development. Academy of Management Journal, 46(4), 419-434.

Hart, C. (1998). Doing a literature review: Releasing the social science research imagination. London: Sage.

Hitt, M. A., Bierman, L., Shimizu, K., & Kochhar, R. (2001). Direct and moderating effects of human capital on strategy and performance in professional service firms: A resource-based perspective. Academy of Management Journal, 44(1), 13-28.

Hsiao, C. (1986). Analysis of panel data. New York: Cambridge University Press.

Huff, A. S. (1999). Writing for scholarly publication. Thousand Oaks, CA: Sage.

Kilduff, M. (1993). Deconstructing Organizations. Academy Of Management Review, 18, 13-31.

Langley, A. (1999) Strategies for theorizing from process data. Academy of Management Review, 24, 691-710.

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

Sayrs, L.W. (1989). Pooled time series analysis. Newbury Park, CA: Sage.

Stewart, D.W. (2002). Getting published: Reflections of an old editor. Journal of Marketing, 66, 1-6.

Swift, M.H. (1973). Clear writing means clear thinking means... Harvard Business Review, (Jan-Feb), 59-62.

Townley, B., Cooper, D. J., & Oakes, L. (2003) Performance measures and the rationalization of organizations. Organization Studies, 24(7), 1045-1071.

Wang, Q., & von Tunzelmann, N. (2000) Complexity and the functions of the firm: Breadth and depth. Research Policy, 29, 805-818.

Whetten, D.A. (1989). What constitutes a theoretical contribution? Academy of Management Review, 14, 490-495.

Yin, R.K., Bingham, E., & Heald, K.A. (1976). The difference that quality makes: The case of literature reviews. Sociological Methods and Research, 5, 139-57.

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TABLE 1

Citation Usage Coding Scheme

	Theoretical background		Method		Results and Discussion	
Acknowledge	AckT1	Acknowledge the source of an idea or concept	AckM1	Acknowledge the source of a research approach or instrument		
	AckT2	Acknowledge related work				
Advocate	AdvT1	Acknowledge a theory or theoretical concept	AdvM1	Advocate a research approach or philosophy		
			AdvM2	Advocate a research procedure or process		
			AdvM3	Advocate variables or measures		
			AdvM4	Advocate a research context		
Claim					ClaR1	Claim that results support previous evidence
					ClaR2	Claim that results contradict previous evidence

					ClaR3	Claim that results extend knowledge
					ClaR4	Claim an implication of results
Define	DefT1	Define a concept				
Establish	EstT1	Establish a relationship between concepts	EstM1	Establish shortcomings of previous methods	EstR1	Establish the acceptability of results
	EstT2	Establish the properties, form or classes of a concept	EstM2	Establish published material used as data		
	EstT3	Establish difficulty, intractability, complexity or paradox				
	EstT4	Establish absence or shortcomings of existing theory				
Explain	ExpT1	Explain a phenomenon			ExpR1	Explain a result
Illustrate	IllT1	Illustrate a concept or phenomenon				
Inform	InfT1	Inform further sources of information (theory)	InfM1	Inform further sources of information (method)		

TABLE 2

Examples of Statements Illustrating Categorization of Citation Purpose for Citations Involving Research Methods Issues.

(One example is taken from each paper where the category was apparent.)

AckM1 Acknowledge the source of a research approach or instrument The team leader and a department head responded to a ten-item measure that was adapted from previous work on R&D management (Baker, Green, & Bean, 1986; Green, Welsh, & Dehler, 1996). (Green, Welsh and Dehler, *2003: 425*) Burawoy (1991: 26), the developer of this method, made this observation: 'The generation of theory from the ground up was perhaps imperative at the beginning of the sociological enterprise, but with the proliferation of theories reconstruction becomes ever more urgent. Rather than starting from scratch and developing new theories, we should try to consolidate and develop what we have already produced.' (Danneels, *2002: 1098*) We used a typical process for interpreting such effects, following Stewart and Barrick (2000).

(Hitt, Bierman, Shimizu and Kochhar, *2001: 21*)

AdvM1 Advocate a research approach or philosophy

In contrast, qualitative research designs are have been shown to be particularly well-suited to analyzing dynamic, interactive processes (Lee, 1999).

(Elsbach and Kramer, *2003: 285*)

Rouse and Daellenbach (1999) called for a rich, detailed investigation of the nature of firm resources through comparative case studies.

(Danneels, *2002: 1098*)

Methodologically, however, taking utterances seriously allows the researcher to grasp the reasons why these appear rational, that is that the subject felt entitled to put them forward as true.

> 'We can descriptively ascertain what the actor takes to be true in contradistinction to what is (in our opinion) true. The choice ... consists in either ignoring or taking seriously the truth claim that the actor connects with his opinions.... If we ignore them as

validity claims, we treat opinions and aims as something subjective.... In this case we neutralize the claims to truth.' (Habermas 1984: 117).

*(*Townley, Cooper and Oakes, *2003: 1049)*

AdvM2 Advocate a research procedure or process

Where multiple informants were used, we assessed agreement among informants' judgements about projects and the decision to aggregate data to the project level by examining between-project variability (Hays, 1981) and interrater agreement (r_{wg}; James, Demaree, & Wolf, 1984, 1983).

*(*Green, Welsh and Dehler, *2003: 425)*

As the study progressed, I sorted these memos and grouped them to arrive at conceptual clusters (Berg, 1989).

(Danneels, 2002: 1102)

The LSDV model also serves to minimize problems of heteroscedasticity and autocorrelation, both of which can be caused by unaccounted firm-

specific heterogeneity (Sayrs, 1989). (*Hitt, Bierman, Shimizu and Kochhar, 2001: 20*)
AdvM3 Advocate variables or measures Diversification measures that capture the number of businesses of a firm as well as the relative importance of each segment are superior to product count measures (Davis and Duhaime, 1992; Hoskisson, Hitt, Johnson and Moesel, 1993). (Hitt, Bierman, Shimizu and Kochhar, *2001: 18*)
AdvM4 Advocate a research context Research sites were selected to achieve a diverse sample that provides many possibilities for comparison, which enables richer theory development (Glaser and Strauss, 1967; Strauss and Corbin, 1990). (Danneels, 2002: 1098) This initiative was similar to experiences in other jurisdictions (Pollitt and Bouckaert 2000).

(Townley, Cooper and Oakes, 2003: 1049)

To do so, it is helpful to focus on a single industry (Dess, Ireland and Hitt, 1990).

(Hitt, Bierman, Shimizu and Kochhar, 2001: 19)

EstM1 Establish shortcomings of previous approaches

First, prior research has not primarily involved professional decision makers, but laypersons, such as undergraduate students participating in a laboratory experiment in exchange for course credits. For example, Katz & Giacommelli (1982) developed their framework of creativity perceptions by asking undergraduates to evaluate a picture of an artist in a studio and then sort adjectives into piles that described that picture.

(Elsbach and Kramer, 2003: 285)

At this point much resource-based empirical research has used secondary data, and therefore was limited to the proxies of organizational resources present in such data (Silverman, 1999).

(Danneels, 2002: 1096)

EstM2 Establish published material used as data We also extensively searched for firsthand accounts of pitches in books written by experts on both screenwriting and producing (e.g., Bach, 1985; Dunne, 1997; Linson, 1996; Long, 1997). (Elsbach and Kramer, 2003: 288) Debate had to be 'representative (with all interested and affected groups); open; transparent; and accountable' (Government of Alberta 1993: 10). (Townley, Cooper and Oakes, 2003: 1049)
InfM1 Inform further sources of information (method) (For explanations of the survival analysis approach, see Allison [1984], Morita, Lee, and Mowday [1989], and Morita, Lee, & Mowday, [1993].) (Green, Welsh and Dehler, 2003: 426)

TABLE 3

Research Methods Citation Usage in Six Studied Papers

Cite #	Page	Cited author(s)	Purpose	of citation	Usage
Paper 1: Elsbach, K. D., & Kramer, R. M. (2003). Assessing creativity in Hollywood pitch meetings: Evidence for a dual-process model of creativity judgements. Academy of Management Journal, 46(3), 283-301.					
1.1	284	Katz and Giacommelli, 1082	EstM1	Establish shortcomings of previous methods	Used experiments with undergraduates rather than professional decision-makers
1.2	284	Sternberg, 1985	EstM1	Establish shortcomings of previous methods	Used experiments with undergraduates rather than professional decision-makers
1.3	285	Runco and Giacommelli, 1982	EstM1	Establish shortcomings of previous methods	Low external validity due to falseness of experimental setting
1.4	285	Lee, 1999	AdvM1	Advocate a research approach or philosophy	Qualitative research designs are suited to analyzing dynamic, interactive processes
1.5	285	Lee, Mitchell and	AckM1	Acknowledge the source of a	Source of ‘theory elaboration’ approach

		Sablynski, 1999		research approach or instrument	
1.6	286	Lee, Mitchell and Sablynski, 1999	AdvM1	Advocate a research approach or philosophy	Why theory elaboration approach is suitable for this study
1.7	288	Bach, 1985	EstM2	Establish published material used as data	Books written by experts on screenwriting and producing
1.8	288	Dunne, 1987	EstM2	Establish published material used as data	Books written by experts on screenwriting and producing
1.9	288	Linson, 1996	EstM2	Establish published material used as data	Books written by experts on screenwriting and producing
1.10	288	Long, 1997	EstM2	Establish published material used as data	Books written by experts on screenwriting and producing

Paper 2: Green, S. G. Welsh, M. A., & Dehler, G. E. (2003) Advocacy, performance, and threshold influences on decisions to terminate new product development. Academy of Management Journal, 46(4), 419-434.

2.1	425	Ford, MacCallum and Tait, 1986	AdvM2	Advocate a research procedure or process	Condition under which a measure may be represented by a single factor
2.2	425	Nunnally, 1978	AdvM2	Advocate a research procedure or	Minimum Chronbach alpha estimate of internal consistency

				process	
2.3	425	Hays, 1981	AdvM2	Advocate a research procedure or process	Procedure for dealing with multiple informants
2.4	425	James, Demaree and Wolf, 1984	AdvM2	Advocate a research procedure or process	Procedure for dealing with multiple informants
2.5	425	James, Demaree and Wolf, 1993	AdvM2	Advocate a research procedure or process	Procedure for dealing with multiple informants
2.6	425	Tabachnick and Fidell, 1983	AdvM2	Advocate a research procedure or process	Procedure for dealing with missing data
2.7	425	Baker, Green and Bean, 1986	AckM1	Acknowledge the source of a research approach or instrument	Source of performance measurement instrument
2.8	425	Green, Welsh and Dehler, 1996	AckM1	Acknowledge the source of a research approach or instrument	Source of performance measurement instrument
2.9	425	Green et al., 1995	AckM1	Acknowledge the source of a research approach or instrument	Source of instrument measuring speed of technology emergence
2.10	425	Green et al., 1995	AckM1	Acknowledge the source of a research approach or instrument	Source of instrument measuring commercialization experience

2.11	426	Allison, 1984	InfM1	Inform further sources of information (method)	Further information about the survival analysis approach
2.12	426	Morita, Lee and Mowday, 1989	InfM1	Inform further sources of information (method)	Further information about the survival analysis approach
2.13	426	Morita, Lee and Mowday, 1993	InfM1	Inform further sources of information (method)	Further information about the survival analysis approach
2.14	427	Diggle, Liang and Zeger, 1994	AdvM2	Advocate a research procedure or process	Procedure for taking account of autocorrelations
2.15	427	Liang and Zeger, 1986	AdvM2	Advocate a research procedure or process	Procedure for taking account of autocorrelations
2.16	427	Jennrich and Schlucter, 1986	AdvM2	Advocate a research procedure or process	Procedure for taking account of autocorrelations
2.17	427	Welbourne and Trevor, 2000	AdvM2	Advocate a research procedure or process	Procedure for taking account of autocorrelations
2.18	427	Welbourne and Trevor, 2000	AdvM2	Advocate a research procedure or process	Procedure for specifying covariance structures
2.19	427	Baron and Kenny, 1986	AckM1	Acknowledge the source of a	Identifying mediators

				research approach or instrument	
2.20	429	Baron and Kenny, 1986	AckM1	Acknowledge the source of a research approach or instrument	Identifying mediators

Paper 3: Danneels, E. (2002). The dynamics of product innovation and firm competences. Strategic Management Journal, 23, 1095-1121.

3.1	1096	Silverman, 1999	EstM1	Establish shortcomings of previous methods	Shortcomings arising from the use of secondary data
3.2	1098	Glaser and Strauss, 1967	AdvM4	Advocate a research context	Research sites selected to maximize opportunities for comparison
3.3	1098	Strauss and Corbin, 1990	AdvM4	Advocate a research context	Research sites selected to maximize opportunities for comparison
3.4	1098	Rouse and Daellenbach, 1999	AdvM1	Advocate a research approach or philosophy	Called for use of comparative case studies to investigate the nature of firm resources
3.5	1098	Miles, 1979	AdvM1	Advocate a research approach or philosophy	Benefits of multi-site studies
3.6	1098	Jick, 1979	AdvM1	Advocate a research approach or philosophy	Benefits of data triangulation
3.7	1098	Miller, Cardinal and Glick, 1997	AdvM1	Advocate a research approach or philosophy	Support for retrospective reports

3.8	1101	Burawoy, 1991	AdvM1	Advocate a research approach or philosophy	The extended case method reconceptualizes and extends theory
3.9	1101	Burawoy, 1991	AckM1	Acknowledge the source of a research approach or instrument	The extended case method
3.10	1101	Burawoy, 1991	AckM1	Acknowledge the source of a research approach or instrument	The extended case method
		Strauss, 1987	AdvM2	Advocate a research procedure or process	Stopped data collection when theoretical saturation reached
3.11	1101	Lee, 1999	AdvM2	Advocate a research procedure or process	Stopped data collection when theoretical saturation reached
3.12	1101	Miles and Huberman, 1994	AdvM2	Advocate a research procedure or process	Looked for themes and patterns in data
3.13	1101	Strauss, 1987	AdvM2	Advocate a research procedure or process	Used memos
3.14	1101	McCracken, 1988	AdvM2	Advocate a research procedure or process	Continually matched and contrasted memos
3.15	1101	Eisenhardt, 1989	AdvM2	Advocate a research procedure or	Systematically compared memos with data

				process	
3.16	1101	Rafaeli and Sutton, 1991	AdvM2	Advocate a research procedure or process	Similar approach to theory construction
3.17	1102	Berg, 1989	AdvM2	Advocate a research procedure or process	Sorted memos in conceptual clusters
3.18	1102	Hirschman, 1986	AdvM2	Advocate a research procedure or process	Subjected analysis to member checks
3.19	1102	Lincoln and Guba, 1985	AdvM2	Advocate a research procedure or process	Subjected analysis to member checks
3.20	1102	Lincoln and Guba, 1985	AdvM2	Advocate a research procedure or process	Dissertation supervisors served as research auditors

Paper 4: Townley, B., Cooper, D. J., & Oakes, L. (2003) Performance measures and the rationalization of organizations. Organization Studies, 24(7), 1045-1071.

4.1	1048	Lukes, 1994	AdvM1	Advocate a research approach or philosophy	We adopted the principle of charity
4.2	1049	Habermas, 1984	AdvM1	Advocate a research approach or	We should regard explanations as sincere

				philosophy	
4.3	1049	Tomkins and Groves, 1983	AdvM1	Advocate a research approach or philosophy	We wish to give voice to everyday actors
4.4	1049	Brunsson and Olsen, 1983	AdvM1	Advocate a research approach or philosophy	Positive consequence of adopting principle of charity
4.5	1050	March and Olsen, 1983	AdvM1	Advocate a research approach or philosophy	Positive consequence of adopting principle of charity
4.6	1050	Pollitt and Bouckaert, 2000	AdvM4	Advocate a research context	Case study subject matter a phenomenon common to other contexts
4.7	1050	Oakes et al., 1998	InfM1	Inform further sources of information (method)	Other papers from the same data set
4.8	1050	Townley, 2002a	InfM1	Inform further sources of information (method)	Other papers from the same data set
4.9	1050	Oakes et al., 1998	InfM1	Inform further sources of information (method)	Other papers from the same data set
4.10	1051	Government of Alberta, 1993, 1995	EstM2	Establish published material used as data	Quotes from published sources
4.11	1053	Alberta Treasury, 1995,	EstM2	Establish published material used as	Quotes from published sources

		1996		data	

Paper 5: Wang, Q., & von Tunzelmann, N. (2000) Complexity and the functions of the firm: Breadth and depth. Research Policy, 29, 805-818.

(No methods citations)

Paper 6: Hitt, M.A., Bierman, L., Shimizu, K., & Kochhar, R. (2001) Direct and Moderating Effects of Human Capital on Strategy and Performance in Professional Service Firms: A Resource-Based Perspective. Academy of Management Journal, 44(1), 13-28.

6.1	18	Dess, Ireland & Hitt, 1990	AdvM4	Advocate a research context	A single-industry focus helps in testing the resource-based view
6.2	19	Sherer, 1995	AdvM3	Advocate variables or measures	Leverage is the number of associates per partner
6.3	19	Samuelson & Jaffe, 1990	AdvM3	Advocate variables or measures	Leverage represents the structure of human capital
6.4	19	Davis & Duhaime, 1992	AdvM3	Advocate variables or measures	Complex measures of service diversification are superior to simple product count measures
6.5	19	Hoskisson, Hitt, Johnson & Moesel, 1993	AdvM3	Advocate variables or measures	Complex measures of service diversification are superior to simple product count measures
6.6	19	Sherer, 1995	AdvM3	Advocate variables or measures	Scherer also used a Herfindahl index
6.7	19	Brill, 1987	AdvM3	Advocate variables or measures	Profitability index indicates firm performance

6.8	20	Sherer, 1995	AdvM3	Advocate variables or measures	Number of large corporate clients indicates leveraging of human capital
6.9	20	Hitt, Hoskisson, Johnson & Moesel, 1996	AdvM3	Advocate variables or measures	Acquisition leads to faster diversification than internal development (therefore mode of market entry must be controlled for)
6.10	20	Hsiao, 1986	AckM1	Acknowledge the source of a research approach or instrument	Least squares dummy variable (LSDV) model
6.11	20	Sayrs, 1989	AckM1	Acknowledge the source of a research approach or instrument	Least squares dummy variable (LSDV) model
6.12	20	Bergh, 1993	AdvM2	Advocate a research procedure or process	Dummy variables help control for heterogeneity
6.13	20	Sayrs, 1989	AdvM2	Advocate a research procedure or process	LSDV model minimizes heteroscedasticity and autocorrelation
6.14	21	Aiken & West, 1991	AdvM2	Advocate a research procedure or process	It is necessary to enter two-way and three-way interactions
6.15	21	Stewart & Barrick, 2000	AckM1	Acknowledge the source of a research approach or instrument	We used their approach to interpret effects
6.16	22	Westphal, 1999	AckM1	Acknowledge the source of a	We used their approach to sensitivity analysis

				research approach or instrument	
6.17	22	Siegel & Castellan, 1988	AckM1	Acknowledge the source of a research approach or instrument	The Kolmogorov-Smirnov test

TABLE 4

Six Stages in the Use of Citations in Hitt, M.A., Bierman, L., Shimizu, K., & Kochhar, R. (2001) Direct and Moderating Effects of Human Capital on Strategy and Performance in Professional Service Firms: A Resource-Based Perspective. Academy of Management Journal, 44(1), 13-28.

Stage	Purpose and citation categories used
1	Establish the importance of the core concept (human capital) by linking it to firm performance (EstT1, EstT2, DefT1)
2	Establish the aspects of the core concept that will form the basis for the most fruitful analysis, and build the hypotheses, weaving the dependent and independent variables into the argument (EstT1, EstT2, EstT3, AckT1, IllT1)
3	Advocate the research context and sample (AdvM4, EstR1)
4	Advocate the set of measures to be used, offering where possible evidence of further validation of each measure (AdvM3, AckM1)
5	Present the results of the analysis, including explanations of data interpretation processes that establish the robustness of the results (AckM1, AdvM2)

6	Claim the theoretical and practical implications of the study (ClaR1, ClaR3)

APPENDIX A

Example of analysis template for use by classes of students making a citation usage analysis. The example uses the citations involving research methods issues in Hitt, M.A., Bierman, L., Shimizu, K., & Kochhar, R. (2001) Direct and Moderating Effects of Human Capital on Strategy and Performance in Professional Service Firms: A Resource-Based Perspective. *Academy of Management Journal*, 44(1), 13-28.

Cite	Page	Author(s)	Purpose of citation		Description of usage in context
			Code	Code description	
85	p.17	Dess, Ireland & Hitt, 1990			
87	p.19	Sherer, 1995			
88	p.19	Samuelson & Jaffe, 1990			
89	p.19	Davis & Duhaime, 1992			
90	p.19	Hoskisson et al. 1993			
91	p.19	Sherer, 1995			
92	p.19	Brill, 1987			
93	p.20	Sherer, 1995			
94	p.20	Hitt et al., 1996			
95	p.20	Hsiao, 1986			

96	p.20	Sayrs, 1989			
97	p.20	Bergh, 1993			
98	p.20	Sayrs, 1989			
99	p.21	Aiken & West, 1991			
100	p.21	Stewart & Barrick, 2000			
101	p.22	Westphal, 1999			
102	p.22	Siegel & Castellan, 1988			