

Michael,

This is one of the finest papers I have seen in this course and feel constrained with our grading system. I rarely even award 5's in these categories, but you deserve even higher marks.

As you move into your comps and do a more detailed question on one or more research methods, you will find it useful to use some of the classic books in those particular areas.

There are a few of those pesky APA issues, but your mastery is quite good.

I am looking forward to reading your dissertation.

Thanks for your outstanding contributions to this course and to the learners who will be challenged and well guided by your work,

Martha

Course Paper Feedback. RM502M
Martha Hollis, Ph.D.
Faculty Director, O&M Graduate Programs

The scale is a Likert-type (ordinal in measurement, but may be used also for parametric statistical analysis*) where 1 is “needs improvement” and 5 is “outstanding PhD work.” The extreme scores (1 and 5) are rare and suggest that you did something extremely well or extremely poorly. To provide useful feedback, the “average” rating is 3. That is the 3 scores are sufficient for passing the course paper. If no score is indicated, assume it is a 3.

Score: Content

__5__ Clear presentation of dissertations’ problem statements, research question(s) and testable hypothesis(es), methodology, assumptions, limitations, ethical considerations, and conclusions.

__5__ Paper shows mastery of Research Methods course materials in relating evidence to main and supporting points.

___5___ Critical analysis of dissertations' methodologies is supported by academic works, i.e. evidence is properly cited to buttress main points with excellent integration of quoted material. Used appropriate academic resources relevant to the course paper.

___5___ Assess the potential contribution made to your field with suggestions for further investigation.

___5+___ Provided substantial suggestions for improving research methodology designs.

___5___ Support of your conclusions with a ranking of outcome preferences as to type of research methodology for your research problem with pragmatic suggestions to complete each type of analysis are easily identifiable, plausible, sophisticated, insightful, and clear.

Score: References

___4___ All literature cited in the text is documented in Capella and APA (5th ed.) format. Citations and parenthetical documentation are appropriate and correct. At least 15 academic sources and 3 completed dissertations are referenced. All sources cited in the paper are listed in References and all sources listed in References are used in the paper.

Score: Paper Mechanisms

___4___ The paper is prepared in Capella and APA (5th ed.) format throughout. Structure is evident and understandable. The paper transitions smoothly from point to point and paragraphs are comprised of solid sentences. The paper is free of spelling, punctuation and grammatical errors. The paper is clear, polished, and written at a level appropriate for doctoral work. The paper is at least 3,000 words in length. An abstract is included.

Comments and Edits

On your paper, there may be comments using MSWord comment feature and/or suggestions for improvement using the Edit function.

Open the MS Word document and look for yellow highlighted areas. When you move your mouse pointer and hold it over one of these highlighted areas, a message should pop up from me. The message is my comment about the highlighted area. If you cannot see any yellow areas it may be that you have an older monitor or PC system, or I didn't make any comments.

Please feel free to inquire about any comments I make on your course paper.

*Of course, Likert scales, if strictly ordinal, would have no arithmetic mean. (For more information see excellent resources at <http://www.unc.edu/depts/wcweb/handouts/dissertation.html>). The mode and medians would be appropriate measures of central tendency with ordinal data. Even though ordinal, studies on the Likert-type scale have demonstrated that parametric statistics are robust enough to work with this data. That is exciting as parametric techniques are usually more powerful than the nonparametric ones.

EXPLORING RESEARCH DESIGNS IN ORGANIZATIONAL SCIENCE

by

Michael J. Wilder

A Paper Presented in Partial Fulfillment

Of the Requirements of

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Abstract

Surprisingly, the primary goal of research is surprise. A new discovery offers growth and enlightenment. However, the joy of discovery must also be accompanied by wisdom and character to stand the test of time. Thusly, research must pursue the course of knowledge through scientific rigor and open disclosure. This paper explores the importance of research in the field of organizational science. Following a brief review of methodologies and intentions for research in organizational science, four dissertations are selected for review and critiqued on their particular purpose, design, analysis, and conclusions rendered. Ultimately, the experience of critiquing dissertations leads to the conclusion that strong research efforts withstand both scrutiny and confirmability and are those that matter most to both academia and the researcher.

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Introduction

What makes knowledge good, what makes it desirable and worth cultivating, is the enhancement knowledge brings to the reliability with which we operate in our artifactual environment. We prefer knowledge over ignorance, fantasy, or doctrine because when we do not act from knowledge success is no likelier than chance. (Allen, 1996, p. 297).

The act of conceiving a line of inquiry, designing and conducting an investigation, and publishing results for scrutiny and diffusion, is a pursuit that empowers societies with the potential for wisdom and growth. Scholars in the pursuit of knowledge embark on a commitment that transcends experience, intuition, and expression. Therefore, a research effort is inherently inconvenient and personally challenging to the researcher. Although conceived of a purpose and direction born of personal knowledge, the effort gains its value from the researcher's ability to look beyond the personalized origins of the inquiry and discover truth in the investigation.

Because scholarly research is an arduous pursuit, the effort must be documented in such a way that the results can be forever revalidated, extended, or improved. For, even when a research effort is fulfilled and accepted by others, there is a lingering sense of responsibility. This responsibility defines the need for rigor and scientific method in the research process despite opposing forces represented by linear vision or the politics of resources (Kautz, Newell, & Swan, 2001).

This paper explores these characteristics of knowledge development as they pertain to research in the field of organizational science. The purpose of this discussion is to recognize and identify pitfalls that may encumber or obscure a research effort. And, in the process, gain both insight and wisdom for future efforts.

This discussion begins with a brief overview of why research is important to organizational inquiry. Then, comprehensive reviews of four relevant dissertations will be conducted, followed by a personalized critique of each. These selected dissertations present examples of different approaches to a similar line of inquiry in organizational science, specifically organization culture and performance. Table 1 lists the dissertations selected.

Table 1: List of Dissertations Reviewed

Dissertation One: A Quantitative Approach

Cooper, E. A. (2000). Corporate culture and performance: Relating concepts and outcomes. *Dissertation Abstracts International* (2001, February), 61 (08), 3247A. (UMI No. 9977380).

Dissertation Two: A Qualitative Approach

Lyle, L. G. (1998). The performance of industry culture: Assumptions, sources and evolutionary patterns as revealed in the paradigmatic interplay of reporting structures and communicative processes. *Dissertation Abstracts International* (1999, February), 59 (08), 2779A. (UMI No. 9903927).

Dissertation Three: A Mixed Construct

Brown, W. B. (1998). The influence of organization culture on organization performance. *Dissertation Abstracts International* (1998, August), 59 (02), 612A. (UMI No. 9825762).

Dissertation Four: Instrument Validity

Bohn, J. G. (2001). The design and validation of an instrument to assess organizational efficacy. *Dissertation Abstracts International* (2002, September), 63 (03), 1595B. (UMI No. 3047497).

Each of these research efforts is examined for their unique elements of purpose, design, analysis, and conclusions. During dissertation reviews, the originating author's name may be used interchangeably with the term "researcher." Cumulative lessons and ethical concerns will also be discussed. The culmination of this effort is the ability to apply the lessons of others to new research projects in the future.

Of special note, literature reviews are highly visible components of a typical dissertation. However, less attention is directed toward this area for this discussion. The literature review is de-emphasized because the content is primarily included for the purpose of documenting the researcher's degree of study in the field and toward the project. While this is an important concern, the purpose of this discussion is to focus on the research design and the effectiveness of the study. Therefore, comments about the literature review will be minimized and included only as they relate directly to the design and execution of the research project.

Research and Knowledge

The challenge inherent in research is the pursuit of truth above and beyond political agendas or fame. Today's scholarly research is empowered by a wide variety of topics, literature, and methodologies (Bergmann Lichtenstein, 2000). Although the variety also invites new challenges to reliability and validity in the process, it is also important to recognize the need for variety when seeking truth in a maze of existing knowledge, interpretation, and persistent unknowns. Confirmability is key to justifying a research effort as a success. In other words, a discovery is perceived as truth when the process behind the discovery can be understood and replicated by those with differing perspectives (Ehrenberg

& Lindsay, 1993; Reyna & Schiller, 1998). Research that withstands this degree of examination is then available as a building block for enhancing existing knowledge and creating new paradigms.

Alternatively, research may also serve both societies generally and organizational science particularly by correcting flawed logic or debunking an existing concept for the purpose of replacing or correcting ideas that have been misguided, misinterpreted, or simply outgrown (Bergmann Lichtenstein, 2000). Ethical implications are omnipresent and key to the growth of a collective body of knowledge and wisdom. While researchers bear the burden of honoring scientific methodology above and beyond their personal inclinations (and despite the personalized origins of their work), readers and consumers of research are charged with the responsibility of evaluating and enculturating research findings appropriately.

This paradoxical relationship is further confounded by influences from societal structures and power regimes (Cooper & Schindler, 2003; Reyna & Schiller, 1998). This means that scientific process in research is not mandated for the purpose of conformity or obfuscation, but as a mechanism for others to follow and thereby confirm or refute findings. It is not correct to consider a research effort as a failure because the findings were constrained or inconclusive. Instead, the real challenges lay in the combination of method and documentation that allows others to learn, grow and eventually improve the pursuit of knowledge, even when progress is slow.

These concepts frame the vital importance of reviewing published research as a scholarly endeavor. Both scholarly leaders and protégés benefit from reviewing, evaluating, and critiquing the research efforts of others. With each new insight, the pursuit of truth and knowledge grows more accurate and more effective. Research under scrutiny does not just

expand the body of knowledge available; it also serves as a vehicle for maintaining integrity in future efforts and credibility in scholarly pursuits. This is the spirit in which the reviews and critiques offered here are presented.

Research in Organizational Science

As a mechanism for discovery, research is undertaken in the widest possible variety of fields and specialties. No topic is forbidden even though some may be favored over others (Allen, 1996). This openness is a critical component of the research equation because knowledge cannot grow without the full illumination of contrast and ideas. Organizational science is an especially complex field where the science of production meets the reality of human behavior.

Often, research efforts may be fragmented and specialized, especially in the growing field of organizational science. Organizational leadership, for example, is one of these specialties. But, the research challenge is more than simply defining or characterizing leadership as a phenomenon. Leadership in organizational science is the concept that both frames and energizes organizational behavior leading to varying performance ideals, marketplace dynamics, and the enactment of work and trade to sustain societal structures.

The study of organizational leadership therefore depends on research to explore and illuminate the complexities underlying human-workplace social phenomena occurring between the leader and the organizational environment (Day, 2000). While context and confirmability still apply, the practice of research is expanding to meet the challenge of complexity confronting organizational science. New questions emerge with each new insight explored. Thus, the practice of research has developed a variety of human- and workplace-

oriented methodologies. Along with this growth, however, comes the need for ongoing vigilance as scientific rigor is applied to new and interesting research designs under increasingly complex circumstances.

Major Research Methodologies

Quantitative research has long been the standard for empirical knowledge in business and other fields (Chandler & Lyon, 2001; Lowe, 2000; Reid, 1994). In addition to statistically evaluating organizational processes or production, quantitative survey instruments have been adapted for subjective factors including organizational leadership traits, organizational culture, and organization efficacy (Bohn, 2001; Price, 1997). The significance of quantitative and statistical analysis in the field of organizational science is marked by the ability to translate scholarly research into the pragmatic view of managerial practice.

However, other research methods have emerged in the attempt to gain deeper understanding of the human dynamics underlying performance as a consequence of human dynamics. For example, qualitative methods have pursued inquiries applying accepted or "grounded" theory to human dynamics (Bryman & Stephens, 1996). In basic qualitative methods, interviews are transcribed and coded for objective content analysis that might reveal latent truths confirming or disproving intuition or anecdotes (Ammentorp & Morgan, 1993). Triangulation of text coding is a primary foundation for qualitative credibility. Shulman (1994) likens triangulation to investigation techniques used by private detectives. However, Scandura and Williams (2000) have observed an increase in research strategies that compromise both triangulation and validity.

Phenomenology is an additional research method contributing to studies in organizational science. Specific techniques may include case studies, ethnography, or even humanistic approaches such as heuristic inquiry (Douglas & Moustakas, 1985; Maggs-Rapport, 2001). These methods have advanced the study of organizational science by enriching the scholarly dialogue at the humanistic level. For example, phenomenology has been used to explore the context in which events occur in organizations while drawing conclusions founded in grounded theory (Ammentorp & Morgan, 1993; Eaves, 2001).

Action research is yet another a methodology for scholarly inquiry. When applied carefully and documented clearly, action research may offer an experimental approach to organizational science. Experimental research can occur in highly specialized realms of organizational science, such as organizational psychology or team dynamics, but remains largely foreign to the study of organizational environments and leadership principles (Day, 2000).

Variety in Methodologies

The perceived value of one research method over another is influenced by the prevalence of anecdote and opinion rampant within power regimes and societal structures (Reyna & Schiller, 1998). In this context, quantitative research has traditionally garnered the greatest value and acceptance. Statistical techniques applied to numerical scales offer scholars and practitioners clear mathematical frames of reference for evaluating the work. Of course, statistical results depend heavily on research design and data structuring. So, as knowledge grows stronger and deeper in mathematical terms, it is reasonable to consider the idea that statistical techniques may reach a level of complexity that muddies the leveling

effect of a mathematical basis (Schuster & Von Eye, 2000). The introduction of human factors to organizational science further confounds statistical algorithms. Therefore, quantitative methods cannot continue to be the sole standard for organizational insight and understanding.

Qualitative methodologies have become more prevalent, especially in the field of organizational leadership (Bryman & Stephens, 1996). Qualitative analysis techniques purposefully explore human dynamics in the leadership phenomena and are more useful, more accepted, and more valuable when their design meets the criterion of applied scientific process in linguistic reasoning (Cooper & Schindler, 2003; Creswell & Miller, 2000; Frey, 1994). Credibility in a qualitative effort is a product of the researcher's ability to externalize and triangulate the research design in a way that exudes objectivity and replication (Price, 1997). Sometimes, qualitative investigations may discover new hypotheses that can be investigated further with quantitative techniques. In other cases, a qualitative inquiry may illuminate complexities in a proven statistical hypothesis.

Phenomenology and action research are both valuable to the scholarly dialogue in organizational science. However, these techniques are bounded by the degree of acceptance gained relative to limitations on transferability (Maggs-Rapport, 2001). These efforts can be inherently vulnerable due to their specific focus on peculiar phenomenological events. Where transferability becomes more a matter of intuition than science, phenomenology may be subjected to less scholarly value than well-executed action research. These distinctions are relative to the influences of power regimes and social structures that define the concept of value in research. Yet, the implicit weight of one research method over another is more reasonably characterized by its appropriateness to the inquiry, its degree of truth, and its

importance in advancing the field of study. While appropriateness and truth can be demonstrated through rigor and objectivity, the latter can only be gauged by the test of time.

Therefore, the concept of value in organizational research may be misapplied. Because organizational science tends to label value in terms of performance and profitability, the influence of power regimes and social structures may inadvertently impose short-term financial gain as the value metric for organizational science (Bonilla, 2002). But in a scholarly realm, the value metric may be better defined by the contribution research makes to the growth of knowledge and discovery of truth apart from financial impact.

It is a difficult paradox. While organizational science needs scholarly wisdom to evolve, large scholarly pursuits can only be embarked upon with resources provided by financial success. Thus, the value paradigm for research and organizational science must evolve incrementally based on large and small advances in comprehension, reflection, or corrective logic (Bergmann Lichtenstein, 2000).

Just as cultural diversity advances societal development, diversity in research could effectively blend scholar practitioner needs in a way that combines incremental success with stepwise knowledge development. Seeking diversified research accommodates the financial realities of investigation while simultaneously bringing many perspectives to bear on organizational inquiry. Organizational leadership benefits by the richness of dialogue created by an ensemble approach (Lowe, 2000). Indeed, a diversified research approach may best fit the natural complexity of leadership for organizational settings. For example, Price, J. L. (1997) contends the study of organizational science will need to become fragmented and specialized to defuse the increasing complexity in organizational measurement (p. 540).

Finally, mixed methodologies might offer the greatest potential for advancing research in a scholar-practitioner paradigm. In practice, mixed methodology investigations depend even more heavily on data quality to balance certainty and complexity (Benjamin, Goodyear, & Greene, 2001, p. 40). But, by augmenting quantitative reliability with qualitative depth or vice versa, scholarly pursuits are served as well as humanistic and practical needs.

Dissertation Review

Only through a greater awareness of methodological genres can we make informed choices as to the most appropriate methodology for our own work, and by so doing, defend those choices through clearly presented, accountable research publications. (Maggs-Rapport, 2001, p. 381).

This dissertation review and critique is presented for the purpose of identifying strengths and weaknesses in a variety of research efforts. Four dissertations are evaluated. First, the review focuses on summarizing the subject research under the topics: purpose of the study, research design, analysis and results, and conclusions and implications. A reviewer's critique will then follow each review.

Dissertation One: A Quantitative Approach

Cooper, E. A. (2000). Corporate culture and performance: Relating concepts and outcomes.

Dissertation Abstracts International (2001, February), 61 (08), 3247A.

(UMI No. 9977380).

Purpose of the Study

Cooper's (2000) study employed a quantitative investigation for predicting organizational culture ratings from archival financial records. Current cultural ratings were established with Likert scaled surveys to quantify variables in the work environment. Then, financial data was garnered and examined regressively to identify historical monetary performance trends that could be associated with resultant cultural ratings.

While qualitative research is acknowledged and appreciated by the researcher, Cooper (2000) specifically strives for a quantitative result. The pursuit of enumeration across the divide between financial performance and resultant organizational culture was embarked specifically to augment the growing body of ethnographic research in the organizational culture genre (p. 5). Defining the purpose of this study involved recognizing both investigative constraints and conceptual limitations. Figure 1 reflects the original "Research Questions" identified by Cooper (2000).

- Research Questions

 1. What type of organization (industry type) would administer the OCI?
 2. Are there some common trends or patterns in the data among the organizations that take the OCI?
 3. Is there a difference in financial performance the year an organization takes the OCI?
 4. Is there a difference in past financial performance among organizations who take the OCI and those who do not?
 5. Does financial performance contribute to our understanding of culture?

Figure 1: Dissertation One: Research Questions (Cooper, 2000, p. 6).

In this case, and quite appropriately, the researcher acknowledged that many confounding variables exist when investigating performance as manifested in an organization. Thus, assessing culture as a result of performance involves bridging the gap between subjective influences (i.e. corporate values, socialization, and meaning) and their realistic impact on profit and loss or bottom-line results. Ultimately, the accomplishments in this effort suffer from questions of data integrity and attention to detail.

Research Design

Because Cooper (2000) insisted on a quantitative methodology for this study, data collection relied heavily on scaled surveys and third-party financial records. The research design was constructed by pairing recorded organizational culture survey data with a regressive evaluation of financial records. Thus, the predictive result was framed analytically without the need for an extended longitudinal study. Interestingly, Cooper (2000) declared the assessment of organizational culture as the independent variable and financial data the dependent variable in stark opposition to the stated purpose using financial data to predict organizational culture.

The intent proffered by Cooper (2000) was to correct the logic of earlier works demonstrating problems with inappropriate survey instruments. Specifically, these prior studies were presumed inadequate by their use of the Survey of Organizations (SOO) questionnaire. Cooper (2000) asserted the SOO changed at least five times from 1966 - 1980 and was inconsistent due to evolving formats, index structures, and context (p. 7). Therefore, the instrument selected for this study was the Organizational Culture Inventory[®] (OCI)

developed by Cooke and Lafferty (1994). The OCI was chosen to apply quantitative measures to a wide range of employees' perceptions about their organizational cultures. OCI results were obtained from consultant files and distinguished according to instrument guidelines defining three general clusters of organization culture: (1) Constructive, (2) Passive/Defensive, and (3) Aggressive Defensive styles. Contrarily, financial performance records were distinguished by archival measures dubbed: Market Value Added (MVA), Economic Value Added (EVA), Cost of Capital, and Return on Capital (Cooper, 2000, p. 8). Figure 2 reflects the hypotheses presented.

The study also required a defined population of companies and a means of categorizing samples for analysis and comparison. Each company included needed to have both OCI data and historical financial data available. Cooper (2000) compared stored OCI data from Human Synergistics to financial records from the Stern Stewart Performance 1000 Index (p. 8). Thus, secondary data was used exclusively for this investigation. Sample selection was performed by matching organizations with OCI data on file to their respective financial records in the Stern Stewart Performance 1000 Index. OCI records initially identified 195 companies available for examination, but only 33 could be matched to Stern Stewart financial data (p. 47). This condition was recognized by the researcher and used to conduct meta-analytical comparisons of excess OCI data to sample results. In any event, the study was rightly deemed as a convenience sample.

Cooper (2000) further noted three specific assumptions in the course of this study: (a) that organizational culture can be studied quantifiably, (b) that OCI data were administered and collected appropriately by all subject companies, and (c) that the results of this study could be generalized to similar industries and type of companies.

Research Hypotheses

H-1a: There is no significant relationship between the financial performance measure of Market Value Added and cultural style.

H-1b: There is no significant relationship between the financial performance measure of Economic Value Added and cultural style.

H-1c: There is no significant relationship between the financial performance measure of Cost of Capital and cultural style.

H-1d: There is no significant relationship between the financial performance measure of Return on Capital and cultural style.

H-2a: There is no significant difference in financial performance measured by Market Value Added across industry types.

H-2b: There is no significant difference in financial performance measured by Economic Value Added across industry types.

H-2c: There is no significant difference in financial performance measured by Cost of Capital across industry types.

H-2d: There is no significant difference in financial performance measured by Return on Capital across industry types.

H-3a: There is no significant difference between the year (the point in time) an organization took the OCI and Market Value Added Performance.

H-3b: There is no significant difference between the year (the point in time) an organization took the OCI and Economic Value Added Performance.

H-3c: There is no significant difference between the year (the point in time) an organization took the OCI and Cost of Capital Performance.

H-3d: There is no significant difference between the year (the point in time) an organization took the OCI and Return on Capital Performance.

H-4: There is no significant difference between the OCI cluster ratings (Constructive, Passive/Defensive and Aggressive/Defensive) and industry types (Manufacturing, Service, and Telecommunications/Computer).

Figure 2: Dissertation One: Research Hypotheses (Cooper, 2000, p. 9 - 11).

Limitations were also acknowledged by the researcher in terms of lacking experimental context (presumably the dependency on secondary data) and inherent difficulties in the choice of convenience sampling over random selection (p. 11).

Analysis and Results

Analyzing data in this study was certainly a conceptual challenge. Cooper (2000) notes the analysis was directed toward three specific goals: (a) descriptive statistics, (b) inferential statistics, and (c) findings and summary [of results]. Chapter Four of the dissertation is committed to analysis and results. Calculations were executed with SPSS software and emphasized Means for data descriptions. The effort also drew on Analysis of Variance (ANOVA) and T-Tests for inferential analysis. The researcher's findings were somewhat confusing when integrated with an analytical discourse.

Notably, the study recognizes inconsistencies in the data. For example, some companies did not demonstrate public financial data for all of the five historical years examined. These may have been newly formed companies or private companies that went public during the time period in point. This was especially surprising, as a full 1/3 of the sample did not present MVA performance data. Six companies in the sample did not present Return on Capital data. Unfortunately, there was little disclosure in the text about how these discrepancies were accommodated in the analysis. Secondly, Cooper's (2000) display of Table 4.1 (p. 52) presents Mean scores for the three OCI culture rating clusters. But, this report is troubling because every cluster Mean score (for each company sampled) is identical

in both Constructive style ratings column and the Passive/Defensive column. So, it is highly unlikely these data exhibited exactly identical Means in two distinct clusters.

Inferential analysis takes a different form. Here, the analysis steps through the list of hypotheses addressing each in turn. Using SPSS functions to evaluate variance and corollary evidence, the study sets acceptance criteria at 95% probability ($p \leq .05$) for defining significance. Eight hypotheses were reported significant to some degree, while five failed to reject the null hypothesis all together. For instance, significant negative correlations were reported between MVA and culture style, and Cost of Capital and cultural style. Other significant correlations were noted, but varied widely with respect to specific years or trends observed in the emergence of significance over the time period studied. This portion of the analysis also drew upon the full OCI database of 195 companies for comparing variances between the sample and the rejected group of 162 remaining companies not matched with financial data.

Conclusions and Implications

Conclusions in this study are succinct and redundant when placed along side the integration of data analysis and findings. Indeed, some comments by the researcher disclaim particular findings. For example, MVA is said to be a measure of an organization's ability to manage resources such that a pattern of low ratings might be associated with Passive/Defensive cultures. Yet, the narrative also suggests the nature of these financial variables examined are more comparative than definitive. Although the researcher asserted using the OCI was appropriate, Cooper's (2000) final comments mentioned mixed quantitative and qualitative studies would have provided more meaningful insights.

Reviewer's Critique

Cooper (2000) began this research with valid ambitions and strong third-party support for data collection. It was clear that both Stern Stewart and Hyman Synergistics provided ample access to their data archives. And, at least two findings could be considered important and credible. For instance, identifying MVA as a mirror to organization culture is a very useful finding that could be tested further. The same is true for associating Cost of Capital ratings with organization culture styles. Cooper (2000) asserted the innate value of this study was a bottom-up perspective not seen in comparable efforts. This focus recognizes the implications of employee perceptions on the actual culture manifested from day to day.

Unfortunately, this study is degraded by a wash of technical problems and lax ambition. For instance, only one "Research Question" accurately framed Cooper's (2000) reported purpose, "[Q]5. Does financial performance contribute to our understanding of culture?" (p. 6). Research questions number two, three, and four, simply identified hypotheses to be tested. And, research question number one was never fully addressed.

Additionally, presenting organizational culture as the independent variable and financial data as the dependent variable seemed to contradict the purpose of the study. Data were collected from only secondary or archival sources; no primary sources were pursued. Most importantly, the original purpose of the study was to identify culture ratings as a result of past financial performance (Cooper, 2000). Inverting these concepts when comparing cultural ratings to past financial records leads the research astray. The effect was even more pronounced because applying one-time OCI assessment ratings regressively to a time series

financial data set implies organization culture is a static component rather than a dynamic one; thus countermanding the original intentions of the research to show the opposite.

Hypotheses were problematic as well. A better configuration would have proffered a generalized null statement and then enumerated specific alternative hypotheses that could be found to reject the original null. Of the long list offered, only hypotheses 1a through 1d reflected the fundamental purpose of the study. Furthermore, the reviewer was forced to question the researcher's attention to detail when confronted with an obvious display error noted in Table 4.1 (Cooper, 2000, p. 52). The alternative was to believe these results were accurately presented, but this condition was easily discarded by noting variances demonstrated in other points of the statistical analysis.

One more point is critically important as well. If the financial data employed varied over a wide time frame (relative to the year OCI surveys were conducted on individual companies), there must also be an effort to cleanse fluctuations in monetary data. Because the value of money fluctuates with inflation, exchange rates, and accounting principles applied, these measures cannot be rolled up into an all-purpose limitation of the study. Cooper (2000) does note very late in the discourse that only 15 of the 33 companies sampled had administered the OCI in 1997 or later. This statement necessarily suggests 18 companies were investigated using financial data more than three years old. Unfortunately, Cooper makes no reference to cleansing these financial data for net-present-value effects or other factors that may seriously disrupt analyses of variances between financial data garnered over a varied time period.

Finally, there is real cause for concern in the framework of assumptions and limitations provided. Cooper (2000) accurately noted the research is based on a convenience

sample. Selected companies were employed, as they just happened to match up with separate financial records. There was no attempt documented to reach a wider range of resources for financial data even though an additional 162 OCI ranked companies were available for study. And still, one of the primary assumptions declared here states the results ought to be transferable across similar industries and types of companies. This contention appears wholly unrealistic next to the equally specific declaration of convenience sampling noted in limitations (Cooper, 2000, p. 11).

Perhaps most troubling, are the realities in this study that go unrecognized. For example, the OCI data was collected whenever the survey was administered. There are no assurances made that these surveys were executed by all companies in the *same year*. Therefore, one is left to trust financial data was accurately matched in time-series form to the year of the OCI rating encountered. But, this also implies an implicit and fatalistic assumption that organizational culture is a static variable even while conclusions suggested the opposite.

Dissertation Two: A Qualitative Approach

Lyle, L. G. (1998). The performance of industry culture: Assumptions, sources and evolutionary patterns as revealed in the paradigmatic interplay of reporting structures and communicative processes. *Dissertation Abstracts International* (1999, February), 59 (08), 2779A. (UMI No. 9903927).

Purpose of the Study

Lyle's (1998) study was devoted to qualitative investigation. This was an approach seeking deeper meanings of organization culture than quantitative methods would have supported. The researcher explored organizational culture in a framework defined by communicative phenomenon and close examination of organization actors, environmental context, and human dimensions. Figure 3 presents two specific research questions declared in this study.

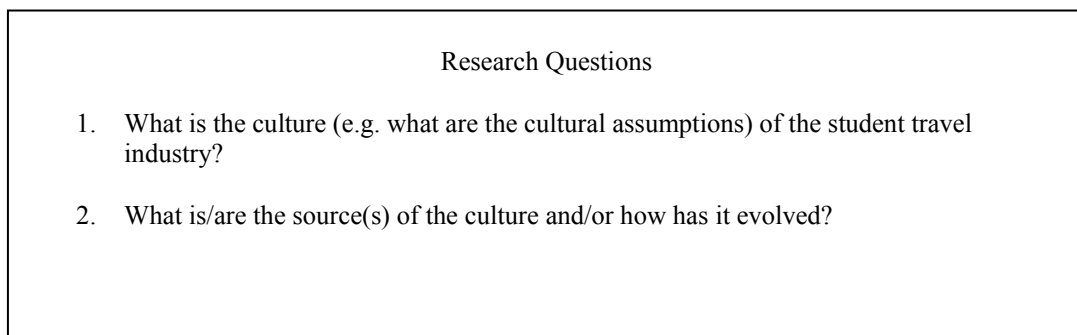


Figure 3: Dissertation Two: Research Questions (Lyle, 1998, p. 38).

Accordingly, this purpose of this research was less about financial performance and more about a deep investigation of organizational communication processes embedded in the organizational environment and the industry. Two primary goals are declared by the researcher: (a) to describe cultural assumptions held in common by like companies, and (b) to explain how these assumptions have evolved over time as a function of communicative processes (Lyle, 1998, p. 38).

Interestingly, this dissertation incorporated only a brief literature review in the course of an introduction. While the literature review seemed to provide enough content for defining the frame of reference, it did not form a comprehensive look at the body of knowledge on

either organizational culture or organizational communication. Yet, this research strived to extend literature in the field of entrepreneurial development. Lyle (1998) envisioned a new vehicle for describing organizational communications in the evolution of an industry culture.

A great deal of emphasis was placed on the researcher's accessibility to interview informants. The researcher chose the student travel industry because she had personal experience and relationships in the field. Lyle (1998) also contended the study was rightly focused on elite informants as representatives of the industry (i.e. those whom have experienced the industry from its entrepreneurial founding to growth and established performance). And, that other researchers would not have been able to access these elites across the lines of competition. This was a subtle but very important assumption implicitly engrained in the core of this approach.

Research Design

Having touched on an introductory literature review, the design phase of this study was addressed in chapter two. Lyle (1998) specifically proposed a qualitative method in order to reveal more explicit and complex detail in the communicative processes of organization culture. Several perspectives about qualitative approaches were noted and considered before the researcher chose an industry case study format over more traditional sampling selection techniques. In this effort, personal networks were used to develop the bulk of informants sampled in the student travel industry. Then additional informants were added from unfamiliar territories (Lyle, 1998, p. 43-45).

Selecting informants deemed appropriate for interviews was a pursuit of historical knowledge above and beyond operational experience. Longevity in the student travel

industry (i.e. 20 years or more when possible) was the favored criterion for informant selection. Lyle (1998) asserted informant selection processes were justified by noting "genetic" relationships among competing organizations engrained in the industry's growth. Non-elites were eventually acknowledged grudgingly as secondary informants to maintain flexibility in the interview roster.

A pilot study marked the beginning of the data collection process. Conducted in two companies represented by four informants, the pilot effort intended to gauge interview timing, appropriateness of questions used, and the overall feasibility of the study. A fifth pilot interview was conducted to test modifications in the interview guide (i.e. question set) following the initial assessment. Original questions in the interview guide were also modified to closer reflect interview protocols observed in the literature (Lyle, 1998, p. 56).

Following the pilot effort, the study continued with primary data collection, including on-site interviews, telephone interviews, and review of standard industry documents (i.e. company information packets). Secondary data was deemed important when the researcher noted cultural reflections exhibited in peripheral documents and artifacts (i.e. brochures, correspondence, websites, or financial records). These secondary sources were characterized as ad-hoc artifacts garnered by opportunity and consent.

An interview protocol was established. Statements of informed consent were employed as well as permission slips for being named in the study. In all but two cases Lyle (1998) recorded the interviews with permission from the participant. Seven companies were actually represented in the study employing a total of 18 informants. Two companies depended solely on CEO participation for inclusion. Anonymity was an initial concern, but later abandoned (with written permission) in favor of qualifying comments of specific

informants. Thus, two informants were eventually named in the study. Six original open-ended pilot questions were expanded to 16 questions in the final interview phase. Hypotheses were not employed. Instead, grounded theory was used to build a qualitative analysis framework.

Assumptions were difficult to identify. Lyle (1998) provided a laundry list of thematic elements entitled "assumptions" (p. 209), but these are not assumptions within the analysis. Instead they culturally defining assumptions proffered as generalizations of the data coding effort. For example, Appendix F notes statements such as, "'Sometimes, working at this job *feels* [original italics] like a religion," and "Our company has the best 'slant' on the way this business is practiced" (Lyle, 1998, p. 209-212). Indeed, no specific assumptions were found regarding design and methodology in this review. Of special interest, Lyle (1998) noted the case study approach was non-transferable by nature, but then also made a claim that, "it seems reasonable to assume that findings generated by this research may at least suggest the existence of comparable phenomenon in industries both similar and dissimilar..." (p. 157).

Limitations were disclosed albeit late in the narrative. Lyle (1998) acknowledges the study was impacted by self-imposed constraints on informant selection, but countered with a presumption of adequacy for the intended purpose. Further declarations continued exhaustively in this fashion, both acknowledging and then rationalizing limitations. Lyle (1998) then closed the circular debate with the statement, "Despite these limitations, it is thought that that the data were sufficient to meet the goals of the instant study, and more besides. [grammar retained from original text]" (p. 159).

Analysis and Results

Lyle's (1998) analysis employed qualitative coding techniques to manually dissect textual data accumulated by personal interviews and written artifacts. The researcher began by transcribing interviews and numbering all lines of text produced. Later, the texts of all documents collected (written artifacts) were also enumerated for secondary analysis. The coding process was constructed without the use of qualitative software. Grounded theories were used to guide the coding effort stating, "the actual coding process...may be best visualized as a '2X2' procedure whereby interviews and then documents were each analyzed in two contexts" (p.61). These contexts drew on two specific culture paradigms: (a) Phillip's (1990) model of cultural assumptions, and (b) Pacanowsky and O'Donnell-Trujillo's (1983) cultural performance types (cited in Lyle, 1998, p. 61). Figure 4 outlines the conceptual frameworks of the two theories employed.

Open coding produced 178 identifiable free text concepts that were subsequently categorized according to Phillip's (1990) heuristics. Then, all text was re-coded a second time using Pacanowsky and O'Donnell-Trujillo's (1983) typology. While these heuristics actually span several metaphorical categories, Lyle (1998) determined a single metaphorical reference dominated the encoded text (i.e. Work as Religion).

Pacanowsky and O'Donnell-Trujillo's (1983) Cultural Performance Heuristics	Phillip's Cultural Assumptions (1990): Relationship Between Group and Environment
<p>Performances of Ritual</p> <ul style="list-style-type: none"> - Personal Ritual - Task Ritual - Social Ritual - Organizational Ritual 	<p>Origins of Truth</p>
<p>Performances of Passion</p> <ul style="list-style-type: none"> - Storytelling - Repartee [as]: <ul style="list-style-type: none"> > Metaphor > Language [as]: <ul style="list-style-type: none"> jargon, vocabulary, relevant constructs 	<p>Nature of Time and Space</p>
<p>Performances of Sociality</p> <ul style="list-style-type: none"> - Courtesies - Pleasantries - Sociability - Privacies 	<p>Nature of Innate Human Nature</p>
<p>Performances of Politics</p> <ul style="list-style-type: none"> - Showing personal strength - Cementing allies - Bargaining <ul style="list-style-type: none"> > Attacking, Defending, Regressing 	<p>Purpose of Work</p>
<p>Performances of Enculturation</p> <ul style="list-style-type: none"> - Learning and teaching the <i>ropes</i> <ul style="list-style-type: none"> > Orientation, imitation - Learning and teaching the <i>roles</i> <ul style="list-style-type: none"> > Metacommunication / Other 	<p>Nature of Work Relationships</p>

Figure 4: Dissertation Two: Theories for Grounded Analysis (adapted from Lyle, 1998, p. 19-28).

Lyle's (1998) analysis then evolved past the proclaimed "root metaphor" (p. 77) into a conceptual matrix based on only a singular element of Phillip's (1990) culture heuristics, (i.e. *Performances of Passion*) as the basis for developing a theoretical grid fitting coded themes into applied and cross-referenced grounded theories (p. 65). Figure 5 shows the researcher's cross-referenced analytical grid.

	STORIES	METAPHORS	JARGON	CONSTRUCTS
Environment				
Origins of Truth				
Nature of Time				
Nature of Space				
Human Nature				
Nature of Work Relationships				
Purpose of Work				

Figure 5: Dissertation Two: Cross-Referenced Analysis Grid (Lyle, 1998, p. 65).

In this case, Lyle (1998) acknowledges the need for expressed validity when performing qualitative analyses that are highly subject to bias and interpretation. Triangulation was both mentioned and then rationalized in this work. The researcher depended heavily on self-reinforcing data samples noting, "interviews of informants triangulate each other" (p. 67). Then, secondary data garnered and coded from documents collected, was compared to interview data (presumably for objective confirmation of coding results). Additionally, Lyle (1998) presented the derived list of "cultural assumptions" to each informant for their review. This effort was characterized by informant opposition to the researcher's findings, but mitigated as the researcher prompted the informants to concede.

The analytical description of this data set began by explaining how the data was conceptually structured into Phillip's (1990) and Pacanowsky and O'Donnell-Trujillo's (1983)

theories. The researcher also attempted to focus the reader on the analytical approach used, instead of specific comments that may seem to be misleading (p. 69).

Several characterizations of the interview data were mentioned as examples of how religion or even evangelism pervaded the coding process. Moving forward from the root metaphor, the researcher made a special note that one category of the grounded theoretical framework was conceptually "split" to better represent the data within the assumption set. Thus, Phillip's typology of the "Relationship Between Group and Environment" was augmented by an additional and parallel category titled, "The Practice of Work" (p. 81). The construction of this new theoretical framework then became the modified guiding paradigm for the researcher's narrative and findings.

Conclusions and Implications

As before, Lyle's (1998) findings were effectively and confusingly integrated into the discussion and disclosure of analysis. After declaring religious zeal as the center of the student travel culture, Lyle (1998) explained the rationale for splitting Phillip's (1990) *Relationship Between Group and Environment* with another category, *The Practice of Work*. This decision was based on an interpretive determination that the data set did not fit completely into the externalized environmental factors presumed of Phillip's theory. Thus, the splintered category was introduced to frame conclusions about the nature of the product and delivery practices (p. 81).

Surprisingly, most of the analytical results were actually conferred to *The Practice of Work*, while the original category, *Relationship Between Group and Environment*, appears unexpectedly different from the analytical grid presented earlier. Under the category

Relationship Between Group and Environment, Lyle (1998) discusses *Membership and Group (industry) Boundaries, Symbolic Membership, Competitive environment, and Critical Elements* (p. 82-96). These sub-categories address the growth of multiple student travel agencies from a small entrepreneurial start-up and the rise of a corporate and industry culture from these beginnings.

For example, some became quality driven; others focused on budget efficiency. The competition for customers was both competitive and collegial; the industry both mature and dynamic. A sense of control was offered as a common thread reflecting the industry's dependence on global economics and diplomacy for subsistence. While Lyle's (1998) analytical discussions reflected these opposing cultural elements, conclusions under each topic heading were generalized into the root metaphor as follows:

In sum, informants consistently identified entities included in this study as 'competitors' or 'members' of the industry. Both quantitative and qualitative hierarchies are perceived, and the common heritage shared by many of the companies is both acknowledged and discussed consistently. Moreover, and implicitly consistent with the root metaphor, the constructs and vocabulary informants use to rank each other are framed in terms of the *service ideal* [italics retained]... (p. 84-85).

Lyle (1998) also proffered conclusions fitted under the imposed category, *The Practice of Work*. Again, unexpected topics were introduced into the combined discussion of analysis and conclusions. These topics included: *The Language of Sales and Marketing* and *Operations and Logistics-Related Language* (p. 96-110). Both of these topics elaborated on the lingual characteristics of the industry as the lexicon applied to both organization culture and industry development.

Further, framing the discussion in the grounded theories cross-referenced by Phillip's (1990) and Pacanowsky and O'Donnell-Trujillo's (1983) cultural models offered a refreshing

logic to the conclusions presented. Each topic was identified by the headings described earlier in the research design and each presented qualitative evidence supporting the translation of student travel communication into Phillip's framework. Developing these conclusions in a grounded theory framework also allowed the researcher to develop a succinct but comprehensive summary matrix reflecting the proposed analytical grid and the appropriate allocation of qualitative data to these interests.

Another surprise reared up as these conclusions led the researcher to a new premise noted by anomalies in the grounded theory portion of the analysis. Lyle (1998) found an emergent concept dubbed, *Corporate Orientation* (p. 146). In this third development, the research effort produced a highly logical means of inferring cultural orientation from the grounded theory conclusions as follows:

Although [all issues] initially appeared to be, and are in fact, subsumed under existing functional categories, an interesting thing happened when the data were re-examined...*distinct corporate orientations emerged, in addition to and not in conflict with the basic set of industry assumptions* [italics retained]. These orientations may perhaps be best described by using the words of one informant: they are distinct 'spins' that each company brings to bear on its 'set of facts,' or more accurately, upon the cultural assumption set shared by the industry. (Lyle, 1998, p. 148).

This development expanded the researcher's conclusions by distinguishing three types of companies in the student travel case study: (1) *The Rebel Orientation*, (2) *The Value Orientation*, and (3) *The Romantic Orientation*.

For this effort, the implications are primarily directed at forwarding new paradigms for organizational culture. These new paradigms are developed by noting the purpose and limitations of the original effort and expanding on the conclusions noted. Lyle (1998) explains the significance of recognizing industry culture, presumably stemming from the

study of organizational cultures. The work was very effective in extending Phillip's (1990) culture assumptions model and describing how industry culture evolved in the student travel industry.

Reviewer's Critique

This research began with tremendous purpose. Research questions were clear and appropriate and the research design founded in grounded theory. Overall, the effort did attain some degree of success in its original premise. However, these accomplishments were obscured and wounded by critical errors in qualitative analysis procedures, researcher bias, and over interpretation.

For example, two sets of qualitative data were collected. The first was garnered from personal interviews with student travel industry elites. The second data set was collected from artifacts of convenience and opportunity. Indeed, even the primary data collected began as a sample characterized by convenient access to personal relationships. The problem is an inherent lack of consistency in both representation and comparison. Because the qualitative process is inherently plagued by inadvertent researcher bias, the use of inconsistent data generates challenges of researcher bias where opportunistic data is employed for favored interpretations.

Lyle (1998) appropriately notes of the importance of validity through cleansing and triangulation of textual data. Unfortunately, this effort takes a strange approach to triangulation. For example, Lyle (1998) depended on common themes within the data as a means of triangulation. Secondly, the researcher approached informants to endorse the imposed set of collective "cultural assumptions." This approach was very problematic where

data coding is confused with data reliability. Soliciting informant endorsements of collective interpretations as proof of data validity subjects the analysis to ethical vulnerabilities.

Instead, a better approach would have been to ask informants to verify interview transcripts and the specific coding applied to their own interview. A third party could have also coded interview data independently. With integrity secured in the coding process, the researcher would have then been justified in developing a master list of cultural assumptions.

Additional concerns arose from the process of analysis and resultant conclusions. Lyle (1998) asserted a root metaphor based on religious themes pervaded the data set. However, this contention is not grounded in theory nor subjected to counterargument that might investigate these religious themes as reflections of the commitment or entrepreneurial spirit demonstrated by industry elite informants. Thus, a reader could become skeptical in light of this unexpected root metaphor and it might appear the researcher has imposed a personalized theory on the data. Especially interesting, was the development of new cultural orientation concepts developed by extending the original grounded theory framework. Lyle (1998) addresses the discovery as a post-hoc revelation when in fact cultural orientation was a valid outcome of a grounded theory investigation.

Looking more intuitively and apart from the subtle philosophical obstacles noted earlier, there is a sense this study was framed primarily by the researcher's personal interest and a strong desire to examine a personalized phenomenon. The influence of this sense was profound throughout the discourse. There is a much greater risk of misguided analysis, researcher bias, and political agendas where the analysis is wholly interpretive.

This work illuminates several researcher biases that were introduced into the design by convenience sampling, personal connections, and conclusions derived outside of grounded

theory procedural boundaries. The distinction was painfully evident as Lyle (1998) engaged in extensive rationalization of results, overly defensive justification of limitations, and a loud contrast between conclusions based on grounded theories and those derived from freestyle interpretation. It is disappointing that the best work in this research is buried under a host of subjective challenges that could have been mitigated with more thorough and appropriate triangulation process and adherence to design.

Dissertation Three: A Mixed Construct

Brown, W. B. (1998). The influence of organization culture on organization performance. *Dissertation Abstracts International* (1998, August), 59 (02), 612A. (UMI No. 9825762).

Purpose of the Study

Brown's (1998) research pursues breadth and depth in the relationship between organization culture and performance. A mixed methodology was designed to combine both quantitative and qualitative analysis techniques. In this work, Brown (1998) investigates the influence of organizational culture on financial efficiencies in public school transportation departments of Arizona. The study includes over 150 transportation departments. Figure 6 reflects the nature of the researcher's problem statement.

The purpose of Brown's (1998) study was focused on adding new dimensions to the understanding of financial performance as influenced by an organization culture, therefore, the research effort centered on how tasks get accomplished within the complexity of interactions among people, technologies, and equipment. This work was documented clearly

and succinctly along with a lengthy but robust literature review that spanned a wide range of relevant topics including organization culture and Total Quality Management principles.

Problem Statement

"...[The] quest for accountability and resource management increasingly challenge administrators to become more productive by adopting private sector business management tenets and reducing costs. Consequently, in the last three decades public sector managers have adopted a host of initiatives including reinventing government, quality management, management by objectives, and systems analysis in hopes of enhancing quantity, quality, and perception of public sector performance. Frequently these initiatives yielded disappointing results. No single strategy for improving performance succeeded in every organization..."

Figure 6: Dissertation Three: Problem Statement (Brown, 1998, p. 1-2).

Research Design

The methodology used in this research design was a mixture of techniques applied in three sequential phases. Phase I examined archival data from the sample of transportation departments selected; Phase II focused on survey data about organizational cultures in these departments. Phase III collected on-site executive interviews from the departments sampled. Brown (1998) asserted these interview data were incorporated in order to better understand management perceptions related to the organizational culture data (collected from the employee population).

This design involved defining specific units of analysis, independent variables, and a dependant variable. Units of analysis were addressed first. Brown (1998) noted the subject

work environments were founded on governmental structure, common mission, and similar equipment. Employee qualifications (i.e. school bus drivers) were standardized and consistent throughout the sample (p. 57). Thus, the unit of analysis was defined as individual Transportation Departments within the sample of school districts approached.

Variables in this study were constructed to capture both the complexity of an organization culture and a measure of the impact that culture would have on the performance of the organization (i.e. Transportation Department). Independent variables included statistically measurable elements, such as the number of miles school buses are driven, number of pupils, number of buses, and location. But, the list of independent variables also includes more subjective foundations. For example, intensity of operations is identified as an independent variable along with assessments of particular organizational culture factors.

As part of this research design, Brown (1998) recognized that not all independent cultural factors would have equal impact on performance measures. Therefore, two initial focus groups were conducted to rate the relative importance of cultural factors. One focus group was comprised of bus drivers and designated trainers for a front-line perspective. The second focus group solicited opinions from transportation administrators, including safety committees, school principals, and employee groups. The result of this effort was the definition of cultural factor elements that were refined and incorporated as independent variables for this study.

Accordingly, the dependent variable was identified in a way that would also be relevant across the sample. After reviewing several alternative ways of measuring of performance in pupil transportation, the researcher selected a financial scale referred to as the "cost of doing business" (p. 58). This financial calculation is based on a monetary cost of

damages incurred in the course of student transportation. However, Brown (1998) also recognized the "cost of doing business" figure would be too vague for a mixed method investigation. Thus, the dependent variable was further refined as a derived ratio intended to assess district transportation losses averaged over a three-year period. The refinement allowed this study to recognize costly but isolated major incidents and diffuse them equitably for comparison. Table 2 reflects the researcher's categorization of the dependent and independent variables.

Table 2: Dissertation Three: Research Variables Studied (Brown, 1998, p. 58-59).

Independent Variables	Dependent Variable
<ol style="list-style-type: none"> 1. Miles driven 2. Number of pupils transported 3. Number of buses 4. Location 5. Intensity of Operations 6. Organization Culture factors: <ol style="list-style-type: none"> a. Decision Making b. Training c. Leadership d. Values e. Stability 	Cost in dollars per mile driven.

To implement this design, Brown (1998) devised a data collection plan. For the beginning of Phase I, the researcher gathered archival records and reports from the Arizona Department of Education as they related to departmental efficiency (p. 68). This effort also included assessing "intensity of operations" as a calculation of students, miles, and buses.

Using this calculation, the researcher was able to distinguish between an urban district and rural district so that intensity could be equitably factored into the cost of doing business measurement (p. 70).

In Phase II, Brown (1998) constructed a survey questionnaire intended to measure selected qualitative cultural traits using a five-point Likert scale (71). This was a surprise because scaled surveys are often considered quantitative instruments. The questionnaire was adapted from existing instruments (origins are referenced but not enumerated in the work). Initially, the concatenated survey was pre-tested on 15 bus drivers, trainers, and administrators, and then modified to its final form consisting of 40 statements and reverse scoring techniques to avoid "straight ticket responses" (p.71). The most interesting aspect of Phase II was the numerical representation employed for purportedly qualitative investigation. In this case, the researcher used numerical results to consider phenomenological contexts. Phase III specifically targeted qualitative analysis by soliciting personal interviews for managerial perceptions of organization culture.

Additionally, these design phases were augmented with a well-intentioned discussion of reliability and study validity. For example, Brown (1998) contended the importance of using SPSS for quantitative evaluation and survey questions drawn from pre-validated instruments. Random sampling was initiated for surveying employees. The researcher also noted interview data would not be used to forward new hypotheses, but only to validate or refute survey results. Functional validity was proffered due to the common organizational setting throughout the research sample, while reliability of financial data was drawn from reporting integrity generated by governmental controls. Strangely, little discourse was attributed to reliability and validity for interview data.

Analysis and Results

The analytical discussion began by examining the profiles and statistical demographics of the sampled respondents and their departments. This study produced a population of 227 operative school districts in the state of Arizona; of which 199 actually provided pupil transportation (p. 85); 152 of these districts participated (p. 4). The description of these data produced a quantifiable summary of the average number of students transported, miles driven, fleet size, fleet condition, and location (p. 68). Performance measurements were derived by calculating the cost of property damages and individual injuries experienced in each district. This investigation also produced a range in average costs per mile.

Turning to the relationship of performance to environment, Brown (1998) treated the three-year performance data as a singular body for analysis. Multiple regression and correlation coefficients determined quantifiable differences in operational intensity and financial performance (p. 108). The analysis then explored the relationship of performance to organization culture.

Again, interestingly, Phase II surveys were only offered to 15 of the 152 districts included in the sample. The researcher asserted these districts reflected typical demographics for school districts across the population. Eleven of the 15 actually agreed to participate. Small districts were excluded from this phase as they may have presented outlier problems in assessing organizational culture. Surveys were administered to the 11 representative districts and 416 responses were received and analyzed for questioning consistency. From this

reliability test, four questions were removed because they were not internally consistent for the questionnaire.

The next step provided a Gamma weighting scheme for the five independent cultural variables studied (p. 104). Then, a one-tailed correlation analysis was performed to evaluate the significance of cost as related to the set of weighted independent variables. Brown (1998) noted three cultural variables were significantly correlated with cost performance including experience, values, and training. Subsequently, these variables were then reexamined to confirm their significance (p. 106). Training was then eliminated as an influence leaving experience and organization values the predominant cultural variables impacting cost performance.

It is especially interesting that Phases I and II of the analysis are well represented in the analysis, although, no statistical hypotheses were stated in the research design. Data garnered from Phase III interviews went unmentioned in the analysis and results. Brown (1998) begins the findings by acknowledging two phases of this study: (a) the quantitative evaluation of operational intensity, and (b) this study of qualitative variables in organizational culture. Quantitatively, this study found location accounted for 22% of the variance in cost performance. And, intensity of operations was found to account for up to 12% of the variance in cost per mile using adjusted R square as the criteria (p. 109).

The qualitative portion of the analysis further found cultural factors (i.e. values, experience, and even training) accounted for up to 72% of cost performance. These findings are noteworthy because they were included to transform Likert scaled survey results into a qualitative context. There are two critically important observations about this analysis. First, the incorporation of personal interviews as a qualitative component seemed to dissipate as

the research progressed. Second, no specific declarations of assumptions or limitations could be found in this effort except for the researcher's broad statement, "It is unlikely that all relevant variables have been identified and measured. Probably some relevant variables have been excluded, while others that were included may not be very important predictors of performance." (p. 106).

Conclusions and Implications

Instead of measuring variations in organizational culture, Brown (1998) introduces culture factors as independent variables producing a noticeable impact on performance (p. 122). Overall, conclusions in this research suggested cultural factors were key to understanding the relationship between a work environment and the performance of the organization. Brown (1998) contended that qualitative data was garnered from Transportation Departments in the form of Likert scaled surveys and personal interviews.

Brown (1998) suggested the implications of this research provided clues to which components of organizational culture produce the best effects for organizational change efforts. The revelation was that specific cultural forces (i.e. values, experience) are more influential on performance in public school transportation fields than intuitive assumptions (i.e. equipment, operational tempo, and risk exposure). When discussing these implications, Brown (1998) makes obvious attempts to apply grounded theory. The issue of training also emerged in this argument. Although there was no claim these findings were fully generalizable over the corporate organizational landscape, the implications were considered transferable in public sector organizations.

Reviewer's Critique

Reviewing this research sparked a heightened interest in mixed methodologies. By employing both quantitative and qualitative techniques Brown (1998) demonstrated how the intersection of divergent methodologies could enhance research results. In this case, however, the results were somewhat confusing and characterized by overlapping classifications of quantitative and qualitative elements. The approach was methodical and systematic to the extent that replication would be possible and the researcher recognized the qualitative aspects surveyed in ordinal terms.

While Likert scaled surveys are often categorized as quantitative because the analysis is numerical rather than textual, Brown (1998) advanced the distinction as an overlap between methodologies. Further, there was an intention to incorporate textual qualitative data as a functional part of the overall analysis. But, the researcher failed to incorporate an analysis of interview data. Brown (1998) also missed the triangulation effect of bringing three forms of methodologies to bear on a single study, even though these elements are evident in the research design.

The design and purpose were both admirable in this study, but documentation was more problematic. For example, Brown (1998) noted in the analysis that quantitative evaluation resulted in a rejection of a null hypothesis. Yet, no specific hypotheses were documented in the design. The researcher also employed a problem statement to guide the research design into qualitative inquiry, but then failed to bring the qualitative value of personal interview data to bear in the documentation of analysis.

Other gaps in the documentation of this work were also apparent. The discussion of this design did not explain how focus group participants were selected; which known survey

instruments were used to draw question items for this study; or why the researcher logically considered Likert scaled surveys to be qualitative in nature (as opposed to quantitative).

Secondly, is important to note the researcher made judgments about what degree of influence should be considered significant for cultural factors. In one case, Brown (1998) asserted the physical aspects of these districts or their equipment status were not considered a significant influence because the combined impact was rated at 34% (p. 121). Then, organization values and experience were declared as statistically significant at 72% of cost performance. There was no logical justification made for what level of influence would be considered significant in the course of relating organizational culture to performance.

Finally, there was a lack of counterargument in the suggestion that values and experience are the predominant cultural factors influencing performance generally. The work might have benefited by examining some of the potential working environment reasons why values and experience emerged as critical cultural factors in this study. For example, because government bureaucracy tends to run thick with policy and controls, a grounded theory discussion might have been formulated about why this organizational environment was deprived of these cultural factors.

Brown (1998) designed this study in three phases. Thus, the effort ought to have engaged three distinct analytical phases followed by a fourth analysis blending the results. Unfortunately, the potential value of a mixed methodology was degraded by overly succinct documentation and a lack of attention to the unique approach of the research design. While this work began with high goals and well-purposed research design strategy, it was nonetheless made vulnerable to challenges of data omission and design flaws by gaps in analytical process and documentation.

Dissertation Four: Instrument Validity

Bohn, J. G. (2001). The design and validation of an instrument to assess organizational efficacy. *Dissertation Abstracts International* (2002, September), 63 (03), 1595B. (UMI No. 3047497).

Purpose of the Study

Bohn (2001) embarked on this study to develop an original survey instrument called, the "Organizational Efficacy Questionnaire" (p. 1). Developing this instrument was research effort undertaken to fill a gap in the tools available to survey organizations differently from culture, citizenship, and performance. The concept was based on an idea that how employees perceive their organizations' capability to perform as a group could impact the actual performance outcomes. This notion was extended from research in organizational literature linking job performance to employees' psychological motivation and attitude. Figure 7 reflects the problem statement offered in this research.

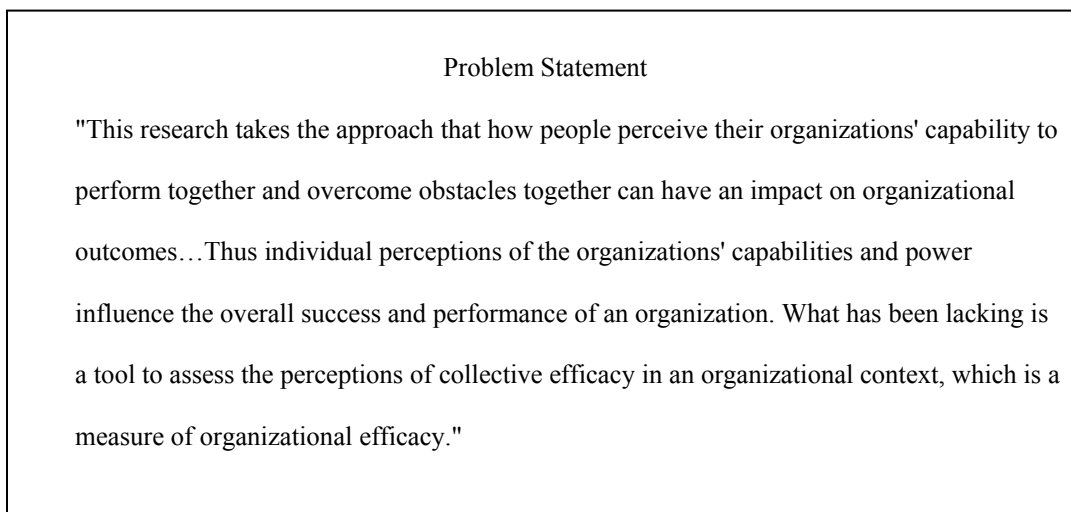


Figure 7: Dissertation Four: Problem Statement (Bohn, 2001, p. 2-3).

Interestingly, Bohn (2001) approached this instrument design effort from a grounded theory perspective to frame the research design. Research questions were proffered to outline the strategy. Each question declared criteria for bounding the research with distinct purpose and grounded theory. Figure 8 shows the four research questions utilized in this study.

- Research Questions
1. Can an instrument be developed to measure the construct the organizational efficacy in a reliable and valid manner, consistent with the proven principles of instrument development?
 2. Will the instrument demonstrate convergent validity with existing instruments that measure collective efficacy, specifically Schwarzer's Teacher Collective Efficacy scale (1999) and the Riggs et al. (1994) Collective Efficacy Scale?
 3. Will the instrument demonstrate discriminate validity with constructs that are dissimilar, specifically self-efficacy, as measured by Schwarzer, and Organization-Based Esteem, as measured by Pierce et al. (1989)?
 4. Will the instrument show criterion validity with measures normally used in a business setting, specifically customer satisfaction, as measured by Kotter and Heskett (1992) and Employee Satisfaction as measured by Buckingham and Coffman (1994)?

Figure 8: Dissertation Four: Research Questions (Bohn, 2001, p. 9).

The researcher also addressed the potential contribution of this study noting how an organizational efficacy instrument could be used to assess many levels of organization dynamics including team confidence, organization change, and strengths and weaknesses for future growth. The literature review focused on specific theories relevant to the effort. Self-efficacy, for example, was included as well as efficacy concerns for career choices, occupational roles, and organizational decision-making. There was also a brief discussion of how efficacy emerges in the work environment.

Research Design

Because this is an original development of a new survey instrument, it was important to approach development in a methodical and systematic way so the instrument could be formulated, tested, assessed effectively, and modified appropriately. Therefore, this study used a robust grounded methodology for ensuring reliability and validity.

In this approach, the methodology included two testing points. The first test was designed to assess convergent/discriminate reliability (p. 9). The second test was a complete factor analysis of the instrument's validity. To accomplish these two phases, Bohn (2001) solicited 142 participants for the first test. The second test employed an even larger group of respondents (n=619) from an anonymous organization. Both tests were based along the South East Wisconsin border, where researcher access to participants could be accomplished. The subjects were noted as employees primarily from midsize manufacturing companies in the noted geographic region.

Because a grounded theory methodology was employed, the research design took on the characteristics of both qualitative question design and quantitative instrument functionality analysis. Bohn (2001) even offered five hypotheses to be tested as shown in Figure 9.

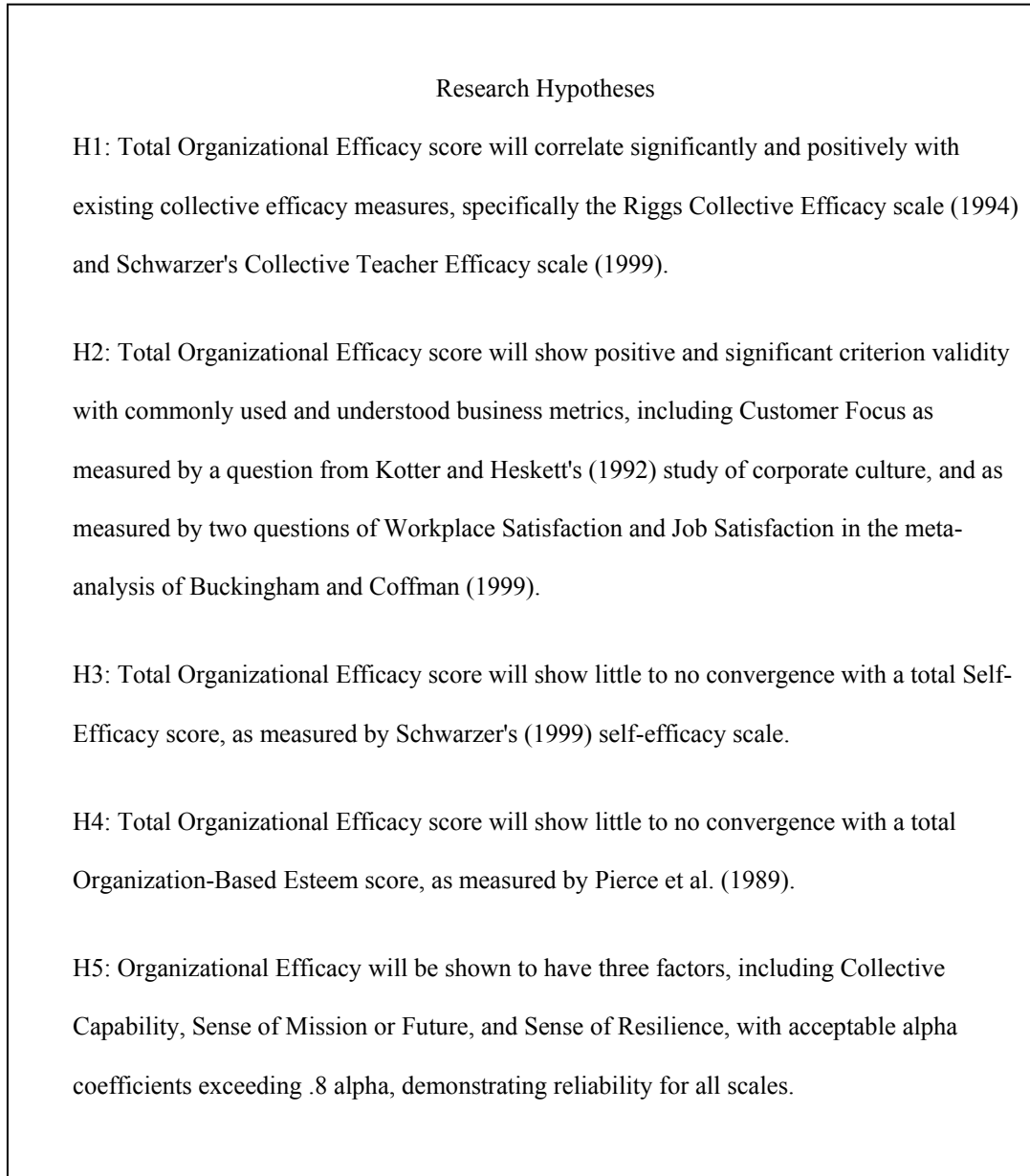


Figure 9: Dissertation Four: Research Hypotheses (Bohn, 2001, p. 47-48).

The grounded theory framework combined two established concepts for developing the organization efficacy survey: (a) the Teacher Collective Efficacy scale originally designed for assessing social systems in educational faculty, and (b) Collective Efficacy as drawn from operational contexts in a large Midwestern university (p. 28). In the latter, Bohn (2001) asserted that an assessment of operational efficacy among administrators, clerical, mechanical, and janitorial personnel warranted the viability of an organizational efficacy approach. The former suggests collective efficacy in a school system ought to be transferable to the workplace. A third theory was also presented showing the importance of organizational esteem in the working environment (p. 29). This synthesis was then developed further with references from work in organizational commitment, climate, and citizenship, all of which were used to develop the organizational efficacy construct.

Bohn's (2001) discussion of specific methodology for creating this instrument begins with the contention questionnaires are well accepted vehicles for making assessments that retain scientific value, anonymity, and economy in use. Questions 1- 4 were derived from multiple sources including first-hand conversation with people in organizations, open-ended sentence completion exercises, observation, and interviews (p. 52). Likert responses were constructed with a six-point scale to specifically remove the neutral category and force respondents to make a choice about the degree of agreement. Notably, the discussion did not include the researcher's rationale for question order or scale orientation. However, the researcher did suggest the instrument was initially designed for completion in less than 15 minutes (p. 59). Although the questionnaire was developed specifically for English-speaking personnel, it was also translated into Spanish.

Bohn (2001) further noted recommendations in the literature suggesting a full factor analysis needed at least five subjects per question item (p. 60). Validity testing was addressed next. In this case, the researcher pursued convergent validity ratings based on previous instrument design efforts. Discriminate validity was evaluated through the lenses of organization based self-esteem and personalized self-efficacy (p. 64). Criterion validity was incorporated for testing the reliability of specific topic categories embedded in the survey. Bohn (2001) remarked the original question set included 37 [question] items based on: (1) sense of collective capability, (2) sense of mission or future, and (3) sense of resilience (p. 71).

The initial limitation declared in this effort was a "first step" disclaimer. However, further limitations were also declared later in the discussion (p. 129). Convenience sampling, the depth of data collected, and the lack of turnover data from organizations study also limited this study. Bohn (2001) admitted the greatest risk to the instrument's development was lack of personal research experience. Specific assumptions in the research design were never fully declared apart from those inherent to grounded theory.

Analysis and Results

Survey questions were first developed using procedures recommended by grounded theories in the literature. Additional items were adapted from a variety of pre-existing questionnaires (p. 72). Including the 37 customized items, the initial questionnaire contained a total of 80 questions. Once completed, the initial question set was distributed to scholarly experts for reviews of efficacy. Two of these experts provided specific responses, which were then included in the documentation. After this initial construction, the questionnaire

was modified again until 23 final items remained within an additional ten items added for organizational culture comparisons. Bohn (2001) did not discuss the rationale for question order, scale, or the newly added culture items.

The subsequent data analysis was then conducted for specific validation of reliability in the survey instrument. Data in this study were evaluated using statistical measures appropriate to instrument validation, as opposed to traditional descriptive or investigative techniques. Findings were intermingled with the discussion of analysis.

Although specific techniques are similar, such as ANOVAs and correlation coefficients, the application of these techniques differed for examining convergent and discrimination factors in a newly developed survey questionnaire. Therefore, the analysis was structured toward reliability coefficients of the questions themselves. This is an appropriate process because survey responses cannot be validated before the instrument's integrity is established. It is this inward look that creates a scientific foundation for the instrument to be applied in the future.

The data analysis in construction of this instrument began with the first implementation of the questionnaire simply titled, "Study 1". The goal was to isolate question items that were effective for the instrument's intended purpose. Seven out of eight companies participated in this first round. Four hundred thirty-two questionnaires were distributed and 142 were returned for return rate of 32%. Responses reflected thirty varying department types as well as effective demographic equity noted by 46% female respondents, 51% male respondents, and 3% unidentified. Bohn (2001) specifically noted some companies returned all questionnaires while others returned only 10%.

Study 1 tested hypotheses 1 through 4. The responses were collected and evaluated against four comparable instruments according to a cross-referenced correlation matrix based on grounded theories. Using a two-tailed test, convergent and discriminate validity were established by correlations demonstrating very high significance ($p \leq .01$). This test established the organizational efficacy questionnaire as a measure distinct from self-efficacy or organization based esteem (p. 83).

The next step employed ANOVA measures to insure survey item validity varied across the organizations tested. The researcher determined the instrument was capable of reflecting significant differences in the companies assessed because the ANOVA showed very high significance ratings. Of special interest, the results also demonstrated opportunistic insights about the companies assessed. Although these revelations could not be weighted conclusively without the instrument development completed, Bohn (2001) could not help but note findings generated by the responses. For example, high organizational efficacy resulted in the lowest variation of organizational perceptions among respondents, while low organizational efficacy resulted in widely varying perceptions. Additionally, employees gauged their self-efficacy differently than their organizational efficacy. The respondents' egos were not necessarily connected to their sense of the organization (p. 88).

Having established discriminatory factors, the analysis turned to criterion validity. Bohn (2001) used ANOVAs, R squared, and Z tests to determine the ability of the instrument to measure intended concepts. For example, customer focus was introduced as a question on the instrument that closely related to a sense of organizational efficacy and the organization's ability to serve its customers (p. 95). This analysis demonstrated a significant difference in the instrument's ability to correlate customer service with organizational efficacy, instead of

organization esteem, thereby reflecting the instrument's ability to discriminate between concepts. Similar findings suggested the instruments discrimination criteria were properly represented for most items.

After modifying specific items in the questionnaire, the goal of Study 2 was to conduct a complete factor analysis of the final instrument in accordance with hypothesis five. In this phase, the researcher partnered with a third-party organization to facilitate testing and improve the return rate with a larger pool of respondents, greater anonymity and separation from the researcher's influence, and a more professional context for delivery. The sampling strategy was opportunistic and ad-hoc. Bohn (2001) asked the third-party to administer the questionnaire in similar types of companies and eight additional organizations participated in the arrangement. In this phase, 963 surveys were sent 619 returned for response rate of 64% overall. Demographic equity in Survey 2 was less effective than Survey 1 with 73% of respondents reporting male and only 25% female (p. 101).

With these instrument evaluation results, a complete factor analysis was undertaken. The researcher specifically noted data recoding was necessary to perform the calculation (i.e. converting scores from 1 to 6 etc.). Bohn (2001) used principal component extraction along with Varimax and Kaiser normalization techniques for data rotation to assess the ability of individual items to measure particular concepts of organizational efficacy. These concepts were defined as follows: (a) sense of collective capability, (b) sense of mission or future, and (c) sense of resilience.

The factor analysis concluded with Eigenvalues and significant Alpha scores, which demonstrated reliability for the three areas intended and validating hypothesis five (p. 106). Batteries of ANOVAs were further conducted to reinforce validity in the variance among

responses. And, regression analysis identified some unique findings that could be garnered by this instrument. For example, personal demographics were less important than organizational structure for predicting organizational efficacy (p. 111). Finally, Pearson correlation coefficients were used to reinforce criterion validity and show the instrument would reflect commonly used business variables (p. 115).

Remarkably, the work presents an unexpected third study as well. Although not anticipated in the original design, Bohn (2001) was able to conduct a post-hoc response comparison on one of the organizations included in the original pilot study. In this instance, the length of time between the two assessments was four months. Because the study had changed, only 20 common and proven questions were used in the analysis and results of the two assessments (p. 178). This effort sought to test the instrument in application (presuming the instrument would be validated).

Unfortunately, the attempt was largely unsuccessful. The subject organization was embroiled in an ongoing change effort, which made longitudinal comparison difficult. The attack of September 11, 2001 further confounded the attempt by introducing a serious economic anomaly into the already short time period between the assessment points. The post-hoc study was further statistically challenged because it lacked sample and test-retest validity (p. 129). Thus, the results gained from this opportunistic attempt survey were inconclusive even though the instrument itself was constructed and evaluated appropriately.

Conclusions and Implications

First, the process of developing this instrument led to the conclusion that organizational efficacy was not a product of self-efficacy, contrary to opinions noted in prior

literature. Secondly, Bohn (2001) found that common business measures such as customer focus, employee workplace satisfaction, and employee satisfaction could be reflected by organizational efficacy measures. Additional conclusions were drawn from these findings suggesting organizational efficacy could be enhanced by a strong customer orientation within the company. And, by acknowledging genuine accomplishments in a way that improves collective perceptions of resilience within the organization.

Bohn (2001) also found that measuring organizational efficacy was not bounded by personal demographics (i.e. organizational role, gender, or ethnicity) as might have been suspected. Instead, the researcher suggested "watercooler" conversations were much more meaningful to organizational efficacy (p. 125). Perhaps more importantly, was the incidental validation of the three characteristic themes for organizational efficacy: (a) sense of collective capability, (b) sense of mission or future, and (c) sense of resilience.

The sense of collective capability was deemed the most important factor for gauging the degree of organizational efficacy present in an organization. All were proffered as significant contexts to be considered when drawing on organizational efficacy to effect organizational change (p. 131). Finally, the researcher concluded that perceived competence in the organization was a performance factor inherently linked to the manifestation of organizational efficacy. Overall, Bohn (2001) concluded the instrument developed was effective, appropriate, and long overdue.

Reviewer's Critique

This research effort was very effective for its intended purpose and the approach to instrument construction and validation combined elements of both qualitative and

quantitative analysis. The documentation was thorough but also succinct. Furthermore, Bohn (2001) demonstrated great commitment to both methodology and goals (as outlined in a combination of a problem statements, research questions, and research hypotheses) grounded in both literature and reliability testing. The depth of reliability and validity testing in this research produced the highest level of credibility among the dissertations reviewed.

These issues, such as discriminate reliability criterion validity, and convergent reliability, may be inherent to the process of developing an instrument. However, attention to reliability and validity are fundamental principles transcending research contexts. Bohn (2001) was able to outline a stepwise approach and meticulously follow the methodology to a successful conclusion. And, although a post hoc assessment study was not part of the original research design, Bohn (2001) appropriately included the information for the benefit of follow on efforts.

By way of critique, only a few technical points appeared noteworthy. For example, although a third party facilitated data collection for the questionnaire's final draft, a limitation was incurred in the sample selection. While the sample was large enough according to precedence in the literature, the participating companies may have been overly homogenous in size and type. These sample constraints did not discredit the significant validation efforts employed, but do bound conclusions to the parameters of the actual sample.

There are no assurances this instrument would also be appropriate for other industries or other types of organizations beyond medium-sized manufacturing companies. Yet, Bohn (2001) did address these issues appropriately in the research design. Interestingly, several declarations of hypotheses were included. However, it was difficult to discern where these

hypotheses had been investigated. Finally, the research design was formulated without specific declarations of assumptions and limitations in the study.

Overall, this dissertation was a fine example of research context, purpose, methodology, and statistical analysis. Based on this design, the conclusions are well substantiated, replicable, and valuable for further studies

Discussion

It should be emphatically stated that new scholars to the field should not blindly follow the patterns [of others] for their own personal research agendas....To do so would be to discourage creativity and innovation, and this would not be a desirable outcome for any academic discipline. At the same time, one message comes through clearly from the experts surveyed: namely, the desirability that quality research be grounded in the theory and literature of the field. It is for this purpose primarily that fledgling scholars should heed the experts' judgments. (Carroll, 1994, p. 27)

The dissertations examined were Cooper (2000), Lyle (1998), Brown (1998), and Bohn (2001). Each demonstrates a variety of strengths and weaknesses that may be translated into external results or challenges. The most profound observation noted here, is a pattern of waning commitment observed in almost every effort. Commitment is manifested partially in the research design and execution, but even more so in the documentation of the effort. This discussion will identify the contrasts in these research efforts and explore the critical factors that emerged from the critique process.

Comparing and Contrasting Observations

Cooper (2000) began with the strong purpose for quantifying and evaluating organizational culture elements as they relate to performance. However, as the execution of

this research unfolds it becomes clear there's a lack of attention to detail that pervades the analysis. As the research unearthed a maze of complexity in comparing cultural inventories to financial performance over a variety of years and circumstances, several critical elements of the analysis were either missed or undocumented (i.e. present value of financial data, time series of organizational culture comparisons, and neglecting to specifically address the original hypotheses).

Lyle (1998) began by seeking qualitative interviews of industry elite informants through personal associations; then expanded the data gathering effort to include sources outside her personal network. This tendency of personalized methodology continued in the research design and execution thus demonstrating innate vulnerabilities of researcher bias in a qualitative approach. Triangulation through external sources would have provided greater validity but was mitigated by the researcher during analysis.

Brown (1998) embarked on a three-phased mixed methodology. Phase I produced a logical and quantitative analysis of organizational demographics and operating factors. However, Phase II strangely characterized a scaled culture survey as the qualitative portion of this approach. Phase III was intended to augmented the qualitative component with executive interviews. But, Phase III data were conspicuously absent from the analysis leaving open questions about follow through for the qualitative portion of the study.

Bohn (2001) demonstrated the strongest showing of mixed methodology techniques when constructing and validating a new survey instrument (or questionnaire). This effort employed a variety of analytical techniques including pilot testing, grounded theory, expert review and triangulation, modification and retest, and robust quantitative analyses of

reliability and validity. Thus, the synthesis of these results provided higher levels of credence to the work leaving only sample size as the constraining force for generalizability.

In sum, the scholarly results of these dissertation efforts are each founded on the validity of design and documented analytical execution. But, there was no way of confirming questions about reliability within the documentation provided. Therefore, transparency is the vehicle needed to convey research integrity and commitment.

By way of example, the quantitative design advanced by Cooper (2000) formulated important insights about the character of organizational culture as an indicator of performance. But, these insights were obscured and vulnerable because of access limitations in the sample as well as mistakes in analytical form. Alternatively, Lyle (1998) presented a qualitative research effort painfully fraught with subjectivity, poor rigor, and overly internalized analysis. Interestingly, the ability of the grounded theory process embedded in Lyle's (1998) research approach produced significant insights that were simply obscured by procedural problems. Brown's (1998) approach to mixed methods were highly vulnerable to external challenges from the classification of survey data as qualitative evidence and the conspicuous absence of Phase III interview data which could be construed as hidden or omitted from the analysis.

The most credible results are reflected in the work of Bohn (2001) where the scientific process of creating and validating a survey instrument demonstrated the value of a well attended mixed methodology. Despite a few technical concerns, Bohn (2001) produced results (i.e. a survey instrument) that are the direct product of the research design. The research is clear, appropriate, and followed carefully so that the reader is able to follow the logic of the researcher and replicate the effort.

Examining Reliability, Validity, and Transferability

Each dissertation includes the essential design elements necessary for gauging reliability, validity, and transferability. While some addressed these issues directly, others embedded them in the design expecting the reader to decipher confirmability on his or her own accord. Most attempts fell short of transparency in analysis and documentation.

In the quantitative approach, confirmability and generalization may be perceived as intrinsic characteristics of a statistical analysis. This may or may not be true based on the design of population, sample, and data structures. Alternatively, qualitative methods demonstrate confirmability by the researcher's actions toward removing: (a) subjectivity in the data, (b) bias in interpretation and analysis, and (c) the extent to which informants represent the population defined (Atkinson, 2000; Scandura & Williams, 2000). A mixed method effectively doubles these efforts. However, the return on this investment for the researcher is a heightened sense of value attributable to both depth and breadth in the work.

The most important lesson in the review of these four dissertations is the problem of generalizability (Scandura & Williams, 2000). Because these particular research projects are often funded privately (Kautz, Newell & Swan, 2001) or by the researcher themselves, it is extremely difficult to reach a sample size appropriate to the largest definitions of population. Under these circumstances, the pursuit of scholarly knowledge might be best facilitated by firmly establishing reliability and validity in the process undertaken. Thus, diversification in methodologies across the field of study becomes a mechanism for building generalizability from synthesizing smaller divergent samples.

Pursuing Ethical Standards

Ethical connotations in the types of research reviewed here are founded in the context of scientific process and open disclosure. For instance, Cooper's (2000) quantitative study demonstrated vulnerability from data integrity. Had the researcher fully declared the time value of money as a factor recognized and addressed, the results would have been far less subject to misinterpretation. Unfortunately, Cooper (2000) addressed neither periodicity nor data cleansing as a component of the design.

Lyle's (1998) qualitative research effort introduced other ethical dilemmas. Anonymous participation is a serious concern (Cooper & Schindler, 2003). The contract between researcher and participant is governed by societal covenants perhaps even over and above the pursuit of knowledge. The fundamental paradox in scholarly research is that learning what is harmful must be performed in a way that does no harm. In this case, Lyle (1998) appropriately documents both the approach to human participation and the execution of ethical principles with respect to informants. Additionally, ethical issues may stem from data corruption incurred by transcribing and coding interviews in a closed loop environment (without external triangulation) or where objectivity becomes lost in the interpretative analysis of textual data.

Naturally, mixed methods take on double duty in the pursuit of ethical research efforts. Each step in the process must be executed by the ethical guidelines of the technique employed. This was problematic for Brown (1998) when the more comfortable statistical analysis turned toward personal interviews. While the numerical analysis was effective, vulnerabilities emerged where the documentation avoided presenting qualitative analyses in a manner consistent with open disclosure and replication. The researcher is then forced to

defend the work against challenges that could have been defused by transparency and follow through in execution. Contrarily, Lyle (1998) presented the opposite problem where the documentation declares so many rationalizations and defensive statements that one is forced to wonder why the analysis was so guarded. "The lady protests too much, methinks."

- Hamlet (III, ii, 239)

Conclusions

This discussion has examined the nature of research in the growing body of knowledge about organizational science as well as reviewing specific research projects with varying degrees of obstacles and success. Many lessons can be internalized by reviewing the efforts of others. Even more are sure to follow in the review's own experience of designing and conducting a personal research effort (Atkinson, 2000).

Lessons for Future Efforts

The lessons to be drawn from this discussion focus primarily on four distinct aspects of conducting research in the field of organizational science. First, the research design ought to be approached in a way that constructs a guiding framework for execution and replication (Ehrenberg & Lindsay, 1993). Cooper and Schindler (2003) provided thought tools, such as a research decision and ethical hierarchy (p. 122) that are able to guide the development of a research design and help the researcher identify critical elements of the project.

Documentation is also critically important. The value of knowledge cannot be realized if discoveries are kept secret (Allen, 1996). In order for the work to be valued as a scholarly pursuit of knowledge, the researcher must document the effort thoroughly and

ethically. The foundation of research value is built on the ability of others to follow the researchers' logic and apply conclusion to other settings. Therefore, the documentation must present a logical and orderly execution of ideas, design, data collection, analysis, and conclusions, all formed within the framework presented. This lesson is not to be interpreted as a constraint to sincere but resource limited pursuits, but instead the need to recognize the obstacles facing the effort. The researcher must orient the design, investigation, and documentation to those who are not privy to the full scope of complexity and execution experienced by the researcher (often in closed quarters).

Replication is the best mechanism for validating the "confirmability" of a research effort (Ehrenberg & Lindsay, 1993). But, confirmability is a double-edged sword. Internal reliability and validity are vital to defining confirmability as a characteristic of a particular research effort and are defined by the integrity of the scientific process employed (Cooper & Schindler, 2003). Variety in methodologies employed can enhance scholarly value, but do not relieve the researcher of the need for scientific objectivity and logic in each phase of the approach (Maggs-Rapport, 2001).

As reliability and validity are ingrained in a research project, confirmability becomes a necessary metric for scholarly acceptance. In the reviews offered in this discussion, it is clear that reliability and validity form the greatest challenges to researchers constrained by time, resources, or access to subjects in the sample. However, the larger lesson learned from these reviews lays in the responsibility to clearly annotate the design framework (Eaves, 2001). This means the researcher must not avoid documenting assumptions, limitations, hypotheses, research problems, sample constraints, and mechanisms employed for objectivity (i.e. statistical techniques, third party or expert to review, or triangulation).

The final point in this discussion is gained by reflecting on ethical vulnerabilities that emerged in the dissertation reviews and critiques. Failing to address design constraints or data integrity issues only invites ethical challenges from power regimes and discerning societal forces of the day (Reyna & Schiller, 1998). These particular researchers may or may not have violated scientific process in their actual conduct, but consistency and disclosure issues leave these questions open in the research documentation.

Recommendations for Reviewer

The author is both reviewer and prospective researcher in this discussion. Therefore, it is appropriate to address recommendations, which could be applied to future research. While still in the conceptual phase, this future effort will pursue truths about the importance of social dynamics in an organizational culture as they relate to organization performance.

First, this discussion has shown the importance of utilizing a research design construction hierarchy and a clear procedural framework. While the research effort will grow from the author's personal interest in work and social dynamics, there will also be a responsibility of objectivity and detachment in execution. Documenting this future study might be best accomplished in a stepwise fashion starting with research questions, a problem statement, and hypotheses. Then, a clear and sequential approach to the specific research design tasks will ensure the effort is well planned and conducted efficiently.

Because this investigation is centered on the intersection of productivity and human relationships, it seems appropriate to employ a mixed methodology. The design ought to encompass both qualitative aspects of the human dynamics and quantitative elements of the performance outcomes. As such, the reviews in this discussion have demonstrated that the

best approach may be constructed in a series of phases where each component of the research is constructed within the methodological boundaries appropriate to that phase.

Assumptions and limitations will also need to be documented as well as design constraints recognizing the techniques employed. For example, obstacles encountered in a survey mailing (i.e. response rate or legibility) might be concerns in a quantitative phase while qualitative interviews would depend on appropriate informant selection criteria and externalized triangulation.

In the analysis of a future research effort, this discussion has demonstrated the need for commitment and elegance in documentation. Here, the recommendation is to follow the scientific processes that define each phase of the project and document actions forthrightly. Should the original design be sufficient for completing the investigation, the author ought to stay within the parameters of the proposed design. However, if the data collected were either insufficient or very robust, the author ought to consider modifying the design. A meticulous editing process will be needed to ensure both form *and* function are equally represented in the research documentation.

Further recommendations include maintaining a logical discourse throughout the investigation. For example, specific results need to be clearly referenced to specific research phases and the design constructs employed. Quantitative analysis ought to indicate the decision-making factors involved in the statistical approach and their impact on stated hypotheses. Whereas, qualitative analyses ought to clearly describe mechanisms used to ensure the integrity of objective coding processes and interpretive analyses. Grounded theory is a design construct that may be extended to qualitative and quantitative methods alike (Eaves, 2001).

Finally, this dissertation review has demonstrated the importance of clarity in documenting conclusions and implications. While the scientific process governs the conduct of the investigation, the researcher ought to ensure wisdom grown from the effort is not lost or obscured by personal zeal or bias in recording.

Summary

Perhaps, the greatest point to be gained from this discussion comes from the work of Bohn (2001), who took great pains to separate ego from process. If developing an original survey instrument was the most successful effort of the research projects reviewed, then one must recognize the true products of a concerted research effort are not the personal revelations of the researcher or even the highly coveted acceptance signatures sealing a dissertation. Instead the product of a research effort is the logical discovery of even a single grain of knowledge. Research efforts that can withstand scrutiny and confirmability while adding new insights to the body of knowledge available to society are those that matter most to both the researcher and academia.

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