Knowledge Area Module 7:

Research

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Abstract

Breadth

The Breadth demonstration explores the theoretical foundation of case study research design and methods. The discussion critically examines the work of Yin, Creswell, and Singleton and Straits in the approach to case study methodology. The Breadth section also compares and contrasts case study research against grounded theory, survey, and mixed methods research approaches presented by Babbie, Charmaz, Creswell, Creswell and Plano Clark, and Singleton and Straits.

Abstract

Depth

The Depth component critically examines the strengths and weaknesses of case study research. The secondary objective of the Depth section is to identify and explain the steps and processes required to successfully apply the case study method. The Depth explores the mechanisms, analytics, and critical review processes necessary to construct and execute a proper case study.

Abstract

Application

The Application component develops and explains the research and design approach for a mixed method case study based on the requirements for chapter 3 specified in the Walden dissertation rubric. The specific project is a research study of existing quantitative pre and post treatment data available from an emergency 911 communications center in King County, Washington. As exploratory research, the methodology seeks to determine whether or not self leadership as the independent variable has a statistically significant effect on critical independent variables such as job commitment, job satisfaction, and employee turnover. Qualitative input provides contextual material related to the pre existing and post intervention environment and conditions.

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Breadth

AMDS 8710: Research Methods

The Breadth demonstration explores the theoretical foundation of case study research design and methodology primarily addressing the approach of Yin. The section also examines and includes the approaches of Creswell and Singleton and Straits, including their views of case study research in the context of other research methods. Babbie, Charmaz, Creswell, Creswell and Plano Clark, and Singleton and Straits are examined to compare and contrast case study research against grounded theory, survey, and mixed methods research approaches.

The Theoretical Framework for Case Study Research

Creswell (2007) defined case study research as the analysis of a topic or subject in a specific setting explained as a bounded or defined system. Through a purely qualitative lens and as a methodology, case study research involves detailed and in depth data collection over time that may include interviews, observations, audio visual materials, documents, and reports (Creswell, 2007). Applying these same data parameters and including instruments such as surveys, case study and mixed method scholars also established the quantitative purpose and application of the case study methodology. Yin (2009) specifically challenged the broad presumption that case study research is strictly a qualitative method.

Considering further the concept of a setting or bounded system as a specific event, the case study method permits a researcher to capture and explore the more significant and substantive characteristics of real life incidents in measurable ways. This important distinction

provides a framework for application of the method to capture events such as small group behavior, organizational and managerial process, neighborhood change, school performance, international relations, and the growth and evolution of industries (Yin, 2009).

As a scientific consideration, Babbie (1990) suggested that case study methodology is radically different from other methods relative to specific objectives. This definition brings isolation to the case study method as a means and mechanism to analyze and generalize a single event versus a goal of generalized understanding for other forms of research such as experiments, content analysis, and analysis of existing data (Babbie, 1990).

Pragmatism

In the qualitative research context, the pragmatist world view suggests that the research environment evolves as the result of some condition or situation where an action is required (Corbin & Strauss, 2008). Creswell (2007) framed pragmatism in the theoretical realm as a methodological construct that (a) has a focus on outcomes, (b) seeks to find solutions to problems, and (c) seeks to find what works in addressing research questions and problems in practical terms.

The pragmatist researcher understands a freedom of choice and chooses methods to fit specific needs. To seek an outcome or solution, researchers may pursue several approaches such as (a) testing multiple hypotheses, (b) providing multiple perspectives, (c) collecting data to deduce what works to address the question, and (d) knowingly collecting and combining both qualitative and quantitative data to execute the research process (Creswell & Plano Clark, 2007).

On a broader scale, the practical concept of pragmatism in research encourages mixing methods to obtain and analyze both qualitative and quantitative data, driven by the quest to answer *what* and *how* questions (Creswell, 2007). As such, the *how* and *what* inquiry via a pragmatist's approach or philosophy lends itself to the case study methodology (Corbin & Strauss, 2008; Creswell, 2007).

Pragmatism Applied

Both case study and mixed methods researchers share the same view of utilizing many approaches to collecting and analyzing data as opposed to pursuing only one method. For example, the convergence triangulation model, as a traditional mixed methods design, collects quantitative and qualitative data separately but on the same phenomenon (Creswell & Plano Clark, 2007). The data is then converged, or compared and contrasted during the interpretation phase of the research (Creswell & Plano Clark, 2007). This method works to compare results or to "validate, confirm, or corroborate" quantitative results with qualitative data (Creswell & Plano Clark, 2007, p. 65).

Yin (2009) argued for openness to the application of a mixed method philosophy in case study research, suggesting that certain conditions and objectives will dictate how the case design will emerge. Noting that the conditions or boundaries are not always clear, mixed method philosophy applied to case study research allows the researcher to address broader and more complicated research questions (Yin, 2009).

These particular observations play to the underlying research methodology and design under consideration, using both quantitative and qualitative data analysis in a case study

triangulation model. Corbin and Strauss (2008) outlined several key assumptions in the pragmatist methodological philosophy.

Specifically, the assumptions of the pragmatism philosophy suggest relational connections that gravitate towards case study research environments such that

- interactions generate meaning
- actions are embedded in interactions
- contingencies arise during the course of action(s)
- actions are accompanied by temporality
- courses of interaction arise from shared perspective
- actions are connected to reflexive interaction
- interactions may be followed by reviews and evaluations of actions
- actions are not assumed to be rational
- actions have an emotional component
- means/end analysis does not fit the action/interaction view
- the embeddedness of action in interaction implies intersection of actions
- many participants in the interactional course aligns their respective actions
- social membership affects perspective and thus interactions
- problems require thought and evolve to interactions separate from the routine (Corbin & Strauss, 2008, p. 6)

The weight placed on the consideration of actions, interactions, and membership as a function of the pragmatist philosophy is relevant to case study research definition. These assumptions also provide context for case study issues such as behavior and data relationships.

Creswell (2007) differentiated the case study as a methodology in the sense of case study being a product of the overall inquiry and thus an output at the end of actions, interactions, and member and participant conduct.

In the larger sense, the issue of actions, interactions, and member and participant conduct moves toward a behavioral view of pragmatism in relation to case study research. In a practical sense of pragmatism as a behavior-driven philosophy, a true case study evolves and emerges as a multi point data construct that is anchored in the observation of human conduct as actions and interactions occurring in the course of trying to solve problems (Corbin & Strauss, 2008).

Broader Worldviews

Considering case study in the context of a mixed methods approach and theoretical philosophy, Creswell and Plano Clark (2007) advocated the advantages of applying multiple worldviews rather than a tight application of paradigms specific to either strictly qualitative or quantitative research. In this regard, they suggested that mixed methodology as a broader research concept is a more practical vehicle when the researcher desires or needs the flexibility to use all methods possible to address a research problem. To that end, postpositivism and pragmatism fit the case study as a mixed methods approach (Creswell & Plano Clark, 2007).

Specifically, the postpositivism and pragmatism philosophical concepts of: (a) empirical observation and measurement, (b) theory verification, (c) consequences of actions, (d) problem

centering, and (e) real world practice orientation, combine in a practical sense around the case study format in a mixed methods approach (Creswell & Plano Clark, 2007).

Similar to case study research, pragmatism in particular seems to best fit mixed methods, especially noting that a single study may use both qualitative and quantitative methods driven by the notion that the research question is of primary importance to the project and process (Creswell & Plano Clark, 2007). Simplifying this to a case study as a mixed method design, the intersection of qualified and quantified worldviews may best be represented as the difference between asking the question of what people think versus measuring what they think.

With the qualitative power of the open ended question and the quantitative value of what is specifically measured, the philosophy and logic of the case study in a worldview context is presented. As such, the scientific benefit of the case study emerges as both a descriptive and an explanatory value (Babbie, 1990).

Case Study Types

Case studies can either involve a single case or multiple cases. A multiple case study can cover multiple cases and draw on a single set of cross case conclusions. Yin (2009) also pointed out that the case study method can be limited to, and function strictly as, a quantitative research design through both the analysis and presentation of evidence.

Typing evidence as qualitative or quantitative does not distinguish research methods. As such, the case study can effectively perform as mixed method research. Other facets of the method include: (a) applicability to evaluation research, (b) the ability to explain presumed causal links in real life interventions that are too complex for surveys or experiments, (c) ability

to describe a real life intervention and its context, (d) ability to illustrate specific topics within an evaluation, and (e) ability to enlighten an intervention that has no clear set of outcomes (Yin, 2009).

Creswell (2007) typed case studies such that: (a) single instrument studies deal with one issue in one bounded case, (b) multiple or collective studies have one issue but multiple cases to illustrate the issue, which could be multiple programs at multiple sites or multiple programs at a single site, providing different perspectives, and (c) intrinsic case studies focus strictly on the evaluation of a program or individual, driven by unique or unusual situations or circumstances that present themselves for analysis much like a narrative study. In general, the overarching premise of the case study type is that they are not research designs that allow the investigator to generalize from one case to another, but rather, to generalize from a collection of representative cases (Creswell, 2007).

Case Study Rationale

Using the case study method anticipates some critical research question drivers such that: (a) there is a need to explain a present set of circumstances, (b) there is a need to understand and answer *how* and *why* questions, and (c) there is a need to provide an extensive and in depth description of the underlying phenomena (Yin, 2009). The anticipated project involves call center environments as a platform to analyze self leadership theory in relation to autonomous job roles. Potential areas of inquiry may revolve around circumstances that exist, such as persistent and high rates of turnover coupled with perceived low morale and job self esteem. To that end,

case study research is appropriate to address individual, group, or even organizational phenomena related to call center operations (Yin, 2009).

The case study, as a method, lends itself to the investigation of structures and environments (Yin, 2009). Similarly, the method can be useful to provide insight into more holistic and meaningful characteristics of real life events such as: (a) behavior(s) of groups, (b) organizational and managerial processes, (c) performance, and (d) change dynamics (Yin, 2009). In broader applications, the challenge becomes one of defining the case under study by way of developing and articulating a clear, bounded environment. A case study may be the correct choice when the researcher has clearly identifiable cases with discernable and clear boundaries (Creswell, 2007). Yin (2009) noted that these choices and parameters may not be abundantly clear.

Additionally, the implied need is one of developing an in depth understanding of an individual case or a comparative analysis of several cases. As a qualitative design, case studies are identified by the size of the bounded case, which can range from an individual to several individuals, a group, an entire program, an activity, an organization or even a country (Creswell, 2007).

Application and Attributes

Aside from scientific or academic applications, case studies have relevant uses for business and especially marketing purposes. The case study is a flexible methodology that lends itself to business applications when considering work units as unique social environments (Yin, 2009). In this setting, case study methodology is useful for analysis of behaviors, change, and

managerial process and structures in a general business context. This duality of application from scientific and academic to a functional presence in the private sector supports the argument that case study research is one of the more unique of the research methods (Creswell, 2007).

Because of an overall flexibility that encourages data collection from many sources, case study research has explanatory, descriptive, and exploratory power (Yin, 2009). Each of these types of approach are driven by certain conditions or requirements such that the investigator can determine: (a) the type of research question, (b) the extent of the control that the researcher will have over behaviors, and (c) the degree of focus in the inquiry on contemporary versus historical events (Yin, 2009).

The exploratory research track seeks to address the question. Seeking to determine what it is that can be learned in the exploratory process of an investigation fits most all research methods. At the other end, the explanatory track addresses more of the *how* and *why* questions in research. The explanatory process is especially valuable to experiments or treatments and supporting the efficacy of actual theory behind treatments (Yin, 2009). Driven by operational links over a given period of time, the explanatory function is a good fit for case study research (Yin, 2009).

With descriptive power, case study research can present: (a) sequences of events; (b) descriptions of cultural structures, and (c) a detailed examination of discovered phenomena (Yin, 2009). This descriptive capacity provides a mechanism for generalizability relevant to: (a) individual performance, (b) group structures, and (c) social structures of small groups (Yin, 2009).

While there are similarities to a history structure and method, case studies can deal with a greater variety of evidence, such as documents, interviews, and observations. Additionally, the format and evidence processes can offer access to observable behavioral events in the form of examination of an actual experiment or the examination of relationships that have causal meaning (Yin, 2009).

Challenges

The method is subject to most criticism around the ability to identify, understand, and define a case from the perspective of the concept of boundaries. Yin (2009) pointed to criticism in the research community related to case studies and the implied challenges of determining relevant and applicable data given widely varying case environments. Additionally, questions also arise related to methodology for applying the data in a coherent, cohesive, and credible research framework. Can the researcher provide a bounded case and do they have the capacity or ability to define what a bounded case looks like?

Some criticism and scientific arguments suggest that case study is only good for the exploratory phase of investigation (Yin, 2009). Additional questions that emerge from the scientific community revolve around whether or not case study research can demonstrate and deliver causal and explanatory value. These are attributes more closely aligned with experiments and quantitative study. However, Yin (2009) suggested that case studies can deliver descriptive value and provide the ability to test theory.

Additional commentary regarding case study research includes: (a) challenging the rigor of the method, (b) the confusion of the method as a teaching tool as opposed to science, (c) the

perception that it is method that takes to long, and (d) the lack of causal value relative to true field experiments (Yin, 2009).

Comparisons: Grounded Theory, Survey Research, and Mixed Methods

The particular methods selected for the discussion that follows are of interest relative to a research study under consideration. In exploring these methodologies, various authors advocate a central theme that helps to drive the discussion. Specifically, the issue for the investigator is one of having clarity in the research question sufficient to allow a method then to be selected that will achieve the objectives of the inquirer as well as deliver a successful study (Yin, 2009; Singleton & Straits, 2010; Creswell, 2007; Creswell & Plano Clark, 2007; Corbin & Strauss, 2008).

Additional common ground for the selected methodologies emerges from the worldviews that relate to the four methods under review here. While the case study is the focus, it is interesting that in its various forms and possible constructs, it shares the general philosophical traits of pragmatism with the other methods. Citing a historical foundation in pragmatism and positivism, even Charmaz' (2006) constructivist grounded theory approach places a priority on the phenomena of study, seeking the how and why around the meanings of events and actions.

Case studies can be explicitly qualitative, quantitative, or even a mixed method social research study. Yin (2009) further explored the descriptive value of case study in validating theory as well as its general ability and flexibility related to survey methods and as a powerful ally in mixed method design. In comparing theses outcome driven methods, a common theme emerges such that each method generally seeks to deliver the pragmatism philosophy of using

the available tools and uncovering the data necessary to best answer the research question by the most practical means (Creswell, 2007).

Grounded Theory

Grounded theory emerged from analytic ideas developed as a result of long interviews conducted by 1960's sociologists Glaser and Strauss (Charmaz, 2006). The process represents an evolution from data collection to methodological strategies that can apply to the study of social topics. The concept as a research method advocates for developing theories from research grounded in rich data. As a research method, grounded theory differs from the quantitative research process of seeking testable hypotheses from existing theories (Charmaz. 2006).

Singleton and Straits (2010) included grounded theory as a field research method, noting and concurring that a critical goal of field research, like grounded theory, is to get an insider's or subject's view of reality. This approach lends itself to providing a detailed picture of social structure from the point of view of the participant. While field research itself may involve several different investigative methodologies such as ethnographies and survey research, one of the key similarities to grounded theory research is an overall belief that field work should be directed toward the discovery of a theory. Achieving this occurs through a more loosely structured study design that seeks to encourage theory to emerge from the field study process (Singleton & Straits, 2010).

As a qualitative design, the grounded theory research process focuses on generating an explanation in the form of a theory to explain a process, action, or interaction that evolves from the perspectives of a large number of subjects in a study (Creswell, 2007). The actual subjects of

a study experience some process that helps to provide the researcher with a strong base of data. This data provides the foundation to formulate theory intended to explain the experience, going beyond a general description of the occurrence or experience (Creswell, 2007).

In the worldview arena, grounded theory revolves primarily around constructivism and postmodernism (Corbin & Strauss, 2008). As such, the philosophies behind grounded theory involve a variety of attributes, including

- understanding
- multiple participant meaning and reality
- social construction
- theory generation
- participant views that evolve to patterns, theories, and generalizations (Corbin & Strauss, 2008; Creswell & Plano Clark, 2007).

The constructivist point of view clearly and plainly articulates that concepts and theories are "constructed" by investigators. This is possible through a process of gathering the stories of subjects who are trying to explain and present their version of the reality behind a given phenomenon, which may be an actual event or simply their own lives (Corbin & Strauss, 2008). The aggregation of these stories and recollections or explanations provides the data set for an investigator to then construct a theory grounded in the data provided by the storytellers.

The constructivist approach differs from the systematic approach to grounded theory in that the systematic approach advocates a process where the investigator develops a theory that explains process, action, or interaction on a topic in the context of a specific phenomenon. The

constructivist view furthered by Charmaz (2006) is more closely aligned with the interpretive approach to qualitative research, with an emphasis on the views, values, beliefs, feelings, assumptions, and ideological worlds of individuals involved in a study rather than on a delineated process, method, or system (Creswell, 2007). In short, the contemporary Charmaz view frames grounded theory research as an evolving process that requires investigator fluidity, flexibility, and openness to the experiences, views, and realities of the subjects (Creswell, 2007).

Corbin and Strauss (2008) also contributed a relevant view of the meaning of a theory in the context of the grounded theory definition. Relative to grounded theory formation, a theory itself represents well developed themes or concepts that connect methodically through a series of relational statements. Collectively, these statements form a theory framework that explains some phenomenon. Theorizing as a process is interpretive and involves consolidating data into concepts and arranging those ideas into an explanatory framework or theme. The connectivity of the theory, taken as a sequence of relationships in the form of a theme, emerges as a broad explanation to answer any of the why, when, where, how, or what questions of something (Corbin & Strauss, 2008).

Grounded Theory Attributes

As a more evolving and abstract process, grounded theory has several defining components that distinguish the method from other research. Charmaz (2006) cites several key attributes that frame grounded theory process

- simultaneous data collection and analysis
- constructing analytic codes from data, not preconceived hypotheses

- use of the constant comparison method of data analysis
- driving the development of theory as a continuous process during each step of data collection and analysis
- memo writing is a discipline in the process that is rich and extensive in order to elaborate categories, specify their properties, define relationships, and identify gaps
- the literature review is conducted after developing and e3xecuting a full and independent analysis

The benefits of the grounded theory process overall suggest that

- there is tighter control of the research process
- there is an increase in the analytic power of the work attributable to the discipline of constantly evolving the theory through constant data analysis
- the method and process yield an abstract, conceptual understanding of the phenomena under study (Charmaz, 2006).

From the scientific perspective, the yield of the method is such that

- there is a close fit with the data
- the overall usefulness of the study is enhanced
- there is conceptual density
- the output and outcomes are durable over time
- the process is modifiable
- there is enhanced explanatory power

- there is a useful blending of positivism and pragmatism such that a social phenomenon is grounded in continuously evolved data (Charmaz, 2006).

In the final analysis, the researcher manages and participates in an evolving investigative, data driven process, making decisions and evolving a theory or theories as the knowledge emerges from the data and process. The theories emerging from this process are substantive because of the bounded and delimited issues addressed in very specific and substantive areas. As a result of this flexible emergence, quantitative researchers are adopting grounded theory in mixed methods applications in particular where flexibility is a requirement (Creswell, 2007; Charmaz, 2006).

Grounded Theory Challenges

One of the toughest issues for a grounded theory researcher is being able to abandon preconceptions about existing theory that might interfere with the overall objective of creating a theory from the process. Since the overall goal is to allow a theoretical explanation of a phenomenon to emerge, the investigator must be able to set aside theoretical knowledge and frameworks that might interfere with the grounded theory process (Creswell, 2007).

Because of the emerging nature and evolving construct of discovery supporting the grounded theory process, there are generalizations that both define a finished grounded theory as well as help to create a level of ambiguity about what specifically constitutes a finished product. These varied views of what constitutes a finished grounded theory include:

- an empirical generalization
- a category

- a predisposition
- an interpretation of a process
- a relationship between variables
- an explanation
- an abstract understanding
- a description (Charmaz, 2006).

These differing views of what a grounded theory actually is as a completed body of work, point to the basic premise of theorizing and the relationship to research. Charmaz (2006), as a constructivist, addresses the challenge by focusing primarily on theorizing as a research process such that the act of theorizing in the grounded theory method requires that one (a) see possibilities, (b) establish connections, and (c) ask questions. The approach then seeks to remove the obstacles created by differing views, placing priority on the phenomena under study and seeing data and analysis as emerging from shared experiences and relationships with participants and data sources (Charmaz, 2006).

Survey Research

The survey practice is currently one the most widely applied research methodologies in the United States and is most consistently applied in the areas of (a) census taking, (b) commercial polling related to products, politics, and opinions, and (c) scientific application throughout the academic community (Babbie, 1990). It is most widely used in the social sciences in the areas of sociology and political science for explanatory and descriptive application (Singleton & Straits, 2010).

The method further extends to applications such as the secondary analysis of data and to the collection of data relating to the study of social problems and social phenomena. Secondary analysis in particular provides the advantage of significantly expanding the survey sample by combining data from several surveys. Survey research is often valuable as a behavioral analysis tool in areas that include (a) leadership, (b) communications, (c) economics, and (d) professional topics (Babbie, 1990). As such, survey research is a valid, freestanding method that becomes even more effective and powerful when applied with other methods.

Babbie (2009) notes that survey research has deterministic value, providing a data sourcing mechanism valuable in identifying cause and effect relationships. Because of its ability to reach and include significant populations, survey research is also valuable in exposing the frequency of certain characteristics of populations or groups, especially where the goal exists to understand a larger population (Singleton & Straits, 2010).

Related to explanatory power, survey research helps to focus on the development of generalized concepts or discussion about human behavior (Babbie, 2009). This evolves through investigative relationships between two or more variables in a process that helps to establish or explain cause and effect. On the descriptive end, survey research provides a distribution of a population's characteristics, attitudes, or experiences (Singleton & Straits, 2010).

Characteristics and Attributes

The primary characteristics of survey research include: (a) the choosing of significant numbers of respondents through probability sampling to get a representative distribution of the population of interest, (b) systematically applied instruments or procedures to ask prescribed

questions that generate recorded answers, (c) numerically codable answers that can be properly analyzed, and (d) varying forms of procedures and degrees of freedom to explore in a range from structured, to semi structured, and unstructured and open ended formats (Singleton & Straits, 2010).

As a numerical proposition, survey research is capable of generating significant amounts of both qualitative and quantitative data. Large numbers of cases in a given survey, for example, can yield replicable findings among individual and combinations of various subsets within a sample. As a means of social description, surveys offer the most effective means of providing extraordinary detail specific to very large, heterogeneous populations. The investigative value is that the method then provides a mechanism to be able to, within statistical limits of sampling error, accurately describe a larger population (Singleton & Straits, 2010). This provides value to the method as both a free standing exercise or a value added proposition to a mixed method project.

By nature of the process and data gathering, survey research naturally seeks to uncover correlations (Babbie, 2009). Additionally, replication of findings among different subsets within samples strengthens the ability of survey research as a method to produce generalizability. This is valuable when looking at the data as a measure of social phenomena. Babbie (2009) also notes that careful method reporting through the survey process allows for testing and retesting of generalizability.

While the units of analysis in survey research are most often individuals, the method can also include larger units such as companies, schools, or even entire nations. Another feature is

that survey research provides empirical verification. This is considered a critical scientific characteristic because of the collection and quantification of data (Babbie, 2009).

Broad classification scope in survey methodology provides the investigator with a range to explore narrowly within the method or as an expansion and depth tool in mixed method designs. Considering a mixed methods case study, relevant and expansion minded survey research inquiry could address categories such as

- social background information (critical demographic information)
- reports of past behaviors (related to historically significant performance or actions)
- attitudes, beliefs, and values (related to the issues or problem at hand)
- behavioral intentions (individual intentions or contemplated acts related to affecting the current environment
- sensitive questions (personal opinion or thoughts related to the problem or individuals associated with a problem; i.e., a manager or coworker) (Singleton & Straits, 2010).

Survey methodology is similar to experiment research in the desire to control for variables. Achieving this goal occurs through subject group definitions and subgroups where separations help to rule out extraneous variables. Coding also serves as a method of content analysis, especially where open ended questions provide data that requires a mechanism to capture and code the responses of participants.

Challenges of Survey Research

Babbie (2009) noted too that the critical scientific challenge of survey research related to social science applicability is generalizability and the required operational methods to achieve it.

Overall, the problems of sampling and generalizability are most significant in the social sciences. The challenge is to capture, measure, and approximate ideals or emotions. However, survey research can provide a means of measurement in abstract social concepts. Relevant examples might include prejudice or consumer confidence.

As discussed as an enhancement to other methods or to bolster a mixed methods approach, the survey can be a mechanism that allows respondents to crystallize an opinion, providing more sophisticated understandings of research issues (Babbie, 2009; Singleton & Straits, 2010). In abstract areas where the challenge can be both conceptualization and measurement, the survey can serves as a valid mechanism to provide the data to measure.

Disadvantages that apply to survey research relate to explanatory power. Singleton and Straits (2010) note that beyond association between variables, cause and effect relationships are generally more clearly delineated with experiments that with survey research efforts. Additionally, testing for and controlling or holding extraneous variables constant requires anticipation and measurement in the interviews or questionnaires followed by statistical control in the data analysis. Because of this process, causal inference is weaker in survey research than with experiments (Singleton & Straits, 2010).

Additional shortfalls as method considerations include (a) survey methods are generally standardized and less flexible and adaptable during the course of a study compared to other methods that can adjust more readily in the early stages {although interviews and questionnaires can be pretested and evaluated before significant rollout commitments}, (b) survey methods are susceptible to reactivity bias where respondents are inclined to attempt to provide the right

answers, (c) the tendency of surveys to report on behaviors rather than observations of behavior, producing measurement error, and (d) the lack of depth related to context where behavior is only briefly captured or observed compared to the types of depth that can be attained in field research (Singleton & Straits, 2010).

Mixed Methods

In reviewing forms of research methodology, a clear theme emerges when addressing the various strengths and weaknesses of the primary approaches. The central theme is that individually, single research methods have inherent limitations and biases (Singleton & Straits, 2010). As one way to address this issue, social science research applies the concept of triangulation as a means to use different research methods or measures to a problem with the objective of targeting individual methodological weaknesses in the form of errors and biases. This is the basic premise of mixed method research design. Mixed method approaches allow the investigator the opportunity to investigate trends, prevalences, and outcomes while simultaneously looking at meaning, context, and process (Creswell & Plano Clark, 2007).

Creating a more holistic and in depth explanation of the mixed method approach, Creswell and Plano Clark (2007) argue that one must first understand some critical definitions around research such that (a) methodology is the philosophical framework and assumptions of research, (b) design represents the action plan linking philosophy to project execution, and (c) method represents the techniques of data collection and analysis. With those broad definitions, several key anchors then apply to define mixed methods research

- there are philosophical assumptions that define the methodology

- there are philosophical assumptions that guide the collection and analysis of data
- there are philosophical assumptions that guide the mixture of qualitative and quantitative approaches across a research process
- there is a method to collect, analyze, and mix both qualitative and quantitative data
- there is a method that uses the combined qualitative and quantitative data in a single study or series of studies
- there is a central assumption that the combined application of qualitative and quantitative approaches is stronger than either method alone (Creswell & Plano Clark, 2007).

Worldviews

Because of the cross application of various methods and the integration of qualitative and quantitative approaches, mixed methods research engages a noteworthy discussion of worldviews. As a set of beliefs that guide action, Creswell (2009) noted that it is perfectly acceptable to use multiple paradigms or worldviews in qualitative study as long as they are compatible. Other argument suggests that there are three key stances to consider in the scientific community related to applying paradigms to mixed methods research

- there is one best worldview- pragmatism
- multiple worldviews can be applied in a mixed methods study, requiring that investigators only be explicit in their use
- worldviews applied to mixed methods study will vary and thus depend specifically on the type of mixed method design chosen for a given study (Creswell & Plano Clark, 2007).

The literature suggests that pragmatism is the preferred worldview for mixed methods research (Creswell & Plano Clark, 2007; Creswell, 2007). Given the flexible aspects of mixed methods research, this makes a certain amount of sense when considering that (a) the pragmatic worldview is included to focus on the outcomes of the research and the actions, situations, and consequences of the inquiry, (b) the pragmatic worldview seeks to find solutions to problems, and (c) the pragmatic worldview researcher will use multiple methods of data collection, employ both quantitative and qualitative sources of data collection, and focus on the best research methods to best answer the research question (Creswell, 2007). It is noteworthy that these platforms apply to case study research in the context of a mixed methods case study design.

Characteristics and Attributes

Mixed methods research advocates the merging or mixing of qualitative and quantitative approaches and data. There are three methods by which data sets can be mixed (a) merging or converging two data sets by bringing them together, (b) connecting two data sets by having one build on the other, and (c) embedding one data set in the other so that one data set provides a supporting role for the other (Creswell & Plano Clark, 2007).

It is also important to understand the nature of qualitative and quantitative data as critical characteristics relative to mixed methods research. This understanding provides a foundation for constructing the relational significance and contributions of the converged approaches. As closed end data, quantitative data sources information that may emerge from a variety of instruments that provide attitude, performance, or behavioral information. Qualitative data is open ended information that the researcher generates from interviews. This type of data may also emerge

from observations, documents from various public and private sources, or audiovisual sources available for coding and categorization (Creswell & Plano Clark, 2007).

The combination of qualitative and quantitative approaches and data offers a logical proposition that a better understanding of a research problem may surface than would be possible by either method alone. The mixed method approach provides a cumulative affect of strengths that can offset the weaknesses of qualitative and quantitative research individually (Creswell & Plano Clark, 2007). As has been discussed, mixed methods research encourages the application of multiple worldviews in the context of answering a research question and solving a specific problem.

Considering the potential toolbox available to the researcher with a mixed method suggests a strong likelihood of developing a more comprehensive base of evidence. The approach also provides the opportunity to address complex questions that may arise or be prohibited or precluded by either method individually, especially when considering the opportunity to integrate qualitative and quantitative approaches and data (Creswell & Plano Clark, 2007).

Evaluating various structural characteristics of a mixed methods study helps to identify several potential applications. Key attributes of more common method formats include

- quantitative instruments collect data that is then addressed in focus groups in an effort to find common ground in the results
- qualitative data is collected to help in the design of an experiment where quantitative measures assess the impact of a treatment on outcomes

- a quantitative survey is followed up with interviews of some of the participants to help gain deeper insight into the nature of certain responses
- an interview process is used to explore topical areas that will help to inform specific questions for a survey of a larger, target population
- a study mixes both qualitative and quantitative approaches throughout, yielding both qualitative and quantitative data and providing the researcher with the opportunity to provide both qualitative and quantitative analysis and interpretation of the data (Creswell & Plano Clark, 2007).

Challenges

There are several challenges associated with the mixed method model, not the least of which is the personal organization required to successfully execute a credible and simultaneous quantitative and qualitative study. Creswell and Plano Clark (2007) specifically directed the most critical challenges of the mixed method toward the skills of the investigator, arguing that it is advisable to first demonstrate independently the ability to execute each of a qualitative and a quantitative study.

The differences in key areas between qualitative and quantitative research also pose challenges for the investigator. For example, the role of the investigator can differ. Whereas the investigator is an engaged, up front participant in qualitative research, they are more likely to largely function as a background player in quantitative research. Establishing validity varies considerably between methods as well. Qualitative research is concerned with the quality of the

final report where quantitative research validity is established through the accumulated, supporting evidence (Creswell & Plano Clark, 2007).

In a broader, functional context, the time and resources generally required to design and implement such a study are also critical considerations. The resource question further extends to the overall base from which to collect and analyze quantitative and qualitative data. Finally, in the academic arena, larger questions emerge around the validity of mixed methods research and whether or not mixed method study is credible and accepted (Creswell & Plano Clark, 2007).

Comparative Discussion

Considering the methods discussed here in very practical terms, grounded theory represents the outlier with respect to overall research process and in relation to case study. Its strongest argument for isolation revolves around the free form and open approach to discovering a theory while deliberately striving to abandon any and all preconceptions derived from existing theories. As a social research discipline, it presents a great personal challenge for investigators if prescribed theory distancing is a learned skill.

Yet grounded theory supports much if not most of the central, worldview philosophies of case study, survey, and mixed methods research. From the pragmatism philosophy and perspective, there is a Machiavellian overtone of disciplined freedom in the sense that evolving knowledge in the form of discovering data is possible by any means necessary. This thematic thread runs through the methods explored here, including grounded theory. The distinct difference in grounded theory is the ongoing quest to discover a theory or theme that is the direct result of a continuous and simultaneous process of data collection and analysis (Charmaz, 2006).

Positioned largely as a qualitative approach, it also appears quite possible and logical that an open ended survey instrument is applicable in a grounded theory study to gather rich data, providing quantifiable contributions to the theory building process. Charmaz (2006) discusses in depth the value and potential of incorporating texts, government records, questionnaires, interviews, and other codable and quantifiable data that can contribute to the process of maturing the researcher's perspective and a discipline for evolving a grounded theory or explanation.

As a multifaceted tool, the survey research method becomes a flexible hinge pin that can clearly stand on its own merits or serve to enhance, support, or function from within any number of methodologies. The method is argued as valuable especially in its exploratory and explanatory power as well as its capacity to provide descriptive knowledge through the distribution of a population's unique circumstances (Babbie, 1990; Singleton & Straits, 2010). Related to behavioral study, an additional benefit of survey research is an ability to examine the frequency of certain characteristics within a population of interest, providing deterministic value and helping to identify and quantify cause and affect relationships (Singleton & Straits, 2010).

Relative to a case study, the survey is a logical support instrument relative to achieving greater understanding of conditions and behaviors observed in an environment. In terms of worldviews, pragmatism clearly aligns with the survey method, particularly in relation to the employment of both quantitative and qualitative sources of data and a focus on outcomes of the research (Creswell, 2007). Survey research provides added value in the context of helping to establish, argue, or anchor generalizability and provide empirical verification, which are considered weaknesses of case study research (Babbie, 2990; Creswell, 2007).

The discussion converges logically to the inclusion of the mixed methods approach in relation to case study. Looking at a case as a bounded environment yet an open palette of information to be evolved as knowledge, data collection and analysis should be able to rely on the availability and application of all the research tools that are available (Creswell & Plano Clark, 2008). This multi tool approach also extends to the application of multiple worldviews in the mixed method environment, which helps to support the integration of mixed methods and both quantitative and qualitative data within a case study (Creswell, 2007; Creswell & Plano Clark, 2008). This creates a relational logic for developing and validating a case study through the mixed method lens.

In Creswell's (2007) validation strategies, one of the eight key points revolves around the triangulation philosophy of engaging and exhausting the available range of sources, methods, investigators, and theories to provide sound evidence. To that advice, it is readily conceivable to be able to construct a valid case study that embodies those validation parameters which align clearly with the mixed method approach.

Conclusion

A common misconception about case study research lies in a belief that it functions most commonly as the exploratory phase for some other type of research method (Yin, 2009). Other misconceptions that have been discussed here include (a) a general lack of rigor, (b) confusion about teaching versions of case studies versus legitimate case study research, (c) the lack of generalizability, (d) that case studies are unwieldy, overblown documents, and (e) that they

simply are not true experiments in the sense of being able to substantiate or validate cause and effect relationships (Yin, 2009).

Within the discussion of the shortcomings of case study research also emerges confusion about whether the method is simply in reality, a form of ethnography or participant observation (Creswell, 2007; Yin, 2009). It is arguable that elements of both contribute to the general make up of a case study. The case study however, distinguishes itself by focusing on the desire to understand a real life phenomenon in depth. This is a broader context from the perspective that a case study may develop around any type of setting from a social group to a grade school classroom or a business unit. This is philosophically different from describing and interpreting the patterns of values, behaviors, beliefs, and even language of a culture sharing group that defines an ethnography study (Creswell, 2007; Yin, 2009).

As a flexible methodology, the case study allows the investigator the opportunity to critically narrow or expand the scope of a study. From a technical perspective, this further distinguishes the method and helps to underscore the applicability of the case study where the research question may require quantitative and qualitative processes. Yin (2009) explains the technical characteristics as (a) the ability to adapt to environments with many variables of interest but few data points, (b) an affinity to triangulation because of the convergence of multiple sources of evidence, and (c) a natural relationship to existing theoretical concepts that ultimately drives data collection and analysis.

One of the revelations about the case study methodology in comparison to other methods is that there is no standard format for reporting case research (Creswell, 2009). Yet it is this type

of overall flexibility and worldview grounding in pragmatism that makes the methodology particularly capable of performing research ranging from simply describing a spectrum of behavior to generating theory (Creswell, 2007; Yin, 2009).

Depth

AMDS 8720: Selected Research Methods

Literature Review Essay

The Depth section critically examines the strengths and weaknesses of case study research. The secondary objective of the Depth section is to identify and explain the steps and processes required to successfully apply the case study method. The Depth explores the mechanisms, analytics, and critical review processes necessary to construct and execute a proper case study.

Case Study Research Strengths and Weaknesses

One of the hallmarks of the case study is the general advocacy for collecting data from a variety of sources, thus anchoring the method in triangulation. Creswell (2007) insisted that this particular characteristic earns case study research a position as a true methodology. On the other end of the spectrum, case study research is also looked upon as a loose design, implying that the number of available choices require focus, discipline, and a principled approach to executing such a study (Meyer, 2001).

Understanding the strengths and weaknesses of the case study requires a better understanding of the discussion relating to the conceptual application of this methodology in research. The case study addresses contemporary phenomena in real life settings, allowing the researcher to explore processes or behaviors that may be little understood or not understood at

all. As has been noted, this observation emerges to a scientific application to address *how* and *why* questions within the context of a contemporary set of events (Meyer, 2001).

Conceptual Bearing

The literature points to the fact that there are many accepted general reviews of case study methodology (Levy, 2008). Yet a key issue that emerges from this review is the lack of clear consensus on the definition of what a case or a case study really is. This wide field of definition creates even broader typology interpretation as well as conceptual definition of what case study research is and how and why it is relevant. To that end, articulating the various strengths and weaknesses may best follow specific applications as much as the general definitions of case study research as a methodology.

On one end, a case is aligned with instances of events that create historical episodes, defining a point in time that represents a class of events. Thus, the case study itself becomes an in depth examination of an aspect, or phenomenon, of an historical episode that can develop or test historical explanations which in turn may be generalizable to other events (Levy, 2008). On a completely different plane, the case study is conceptually aligned with human learning as it relates to context dependent knowledge. As a construct for analysis, this argument extends then to why case study research is globally valuable in learning environments (Flyvbjerg, 2006).

These two extremes do logically converge in an important way. From the researcher's perspective, there is closeness in a case study to real life circumstances and the related wealth and volume of details that emerge from an historical event. This contributes first to a completely

nuanced view of reality when assembled as a case study and secondly, it provides a contribution to the researcher's own context based learning capacity. Thus the breadth of conceptual application and interpretation helps to set the stage for a key argument here that case study research is an emerging, learning based methodology when taken in the context of the two conceptual bookends discussed here.

Qualitative methodologists view a case to include a quantity of observations on the same variable. This expectation helps to establish a key main task of case study analysis, which is to generate a maximum number of testable implications around various hypotheses in a given case (Levy, 2008). From a theoretical perspective, the case study is then open to the use of theory or conceptual categories that provide a guide for the research and analysis of data (Meyer, 2001).

Establishing this premise helps to support the argument for a quantitative value and applicability in case study research. An example would be a detailed study of individual cases incorporating significant and substantive statistical analysis with the intent of being able to generalize to other cases (Levy, 2008). This is one scenario for the application of a qualitative and quantitative mixed method case study.

The Weaknesses

It has been mentioned here that some criticism and scientific arguments suggest that case study is only good for the exploratory phase of investigation (Yin, 2009). Additional commentary regarding case study research includes: (a) challenging the rigor of the method, (b) the confusion of the method as a teaching tool as opposed to science, (c) the perception that it is

method that takes to long, and (d) the lack of causal value relative to true field experiments (Yin, 2009).

Going forward, it is worth noting that while this discussion is extremely limited in scope and review of the literature on the topic, a central theme seems to be that many of the cited weaknesses related to case study research are based more on academic and scholarly opinion than established scientific tests that substantiate specific method problems (Yin, 2009).

One way to consider this observation is to consider two more practical weaknesses of case study research. First, it is noted that the simple logistical issues of a case may come into play (Seawright & Gerring, 2008). Does a case represent the immediate convenience of an opportunity as opposed to the most compelling situation or conditions relative to the research question? Access to an issue or phenomenon sufficient to address the underlying question is fairly simple logic. A second practical consideration is the within case characteristics of a case as a methodological concern.

When considering case selection and quantitative concepts applied to a case study, issues that potentially weaken the process or narrow the field may include (a) the population under consideration, (b) sufficient population size if statistical techniques are to be applied, and (c) typical statistical considerations such as identification, specification, robustness, and measurement error. In this context, the challenge of the validity of the case selected becomes one of how the case fits into the theoretically specified population (Seawright & Gerring, 2008).

Additionally, weaknesses and strengths can be viewed from the more general perspective of the methodology in its universe as well as in more detailed design and execution context. The latter tends to frame issues more in terms of cautionary advice than specific shortfalls of the method. Other criticism does deal directly from the perspective of issues encountered in method application. These observations also evolve in the form of cautionary discussion and considerations for investigators that may become potential pitfalls (Seawright & Gerring, 2008).

Flyvbjerg (2006) addressed opinion regarding the weaknesses of case study research by framing the discussion in terms of common, contemporary misunderstandings. This approach provides the opportunity to consider thematic views related to the case study methodology from a perspective that seeks to address the historical view of weaknesses. There are five common misunderstandings related to case study research

- theoretical knowledge is more valuable than practical knowledge
- you cannot generalize from a single case, therefore, the single case study cannot contribute to scientific study
- the case study is most useful for generating hypotheses, where other methods are more useful for hypotheses testing and theory building
- the case study contains a bias towards verification
- it is often difficult to summarize case studies (Flyvbjerg, 2006).

While it is beyond the scope of this document to address these misconceptions in detail, the summation of the meaning of these misunderstandings is that the primary weaknesses of case

study research revolve around theory, reliability, and validity and the credibility of case study as a scientific method (Flyvbjerg, 2006).

Other approaches to methodological shortfalls emerge from the perspective of philosophy and the conceptual framework of case study research. These conflicting views grow out of differences in philosophical assumptions from dissenting voices in the positivistic, interpretivist, and critical realist schools (Piekkari, Welch, & Paavilainen, 2009). In this universe of case study doubt, the focus of challenge revolves around case study process that includes (a) theorizing, (b) case selection, (c) data sources, and (d) boundary setting.

Considering the philosophical universe to challenge the construct of case study process, it is understandable that there is a struggle to simply come up with a consistent case study definition. The underlying perception of weakness that inures to case study research in this setting evolves from a perspective where philosophical differences create doubt or conflict such that (a) judgment is affected about the proper role of case studies in research, (b) how case studies should be conducted is unsettled, and (c) there is doubt about the criteria for evaluating the quality of case study research (Piekkari, Welch, & Paavilainen, 2009).

Interestingly, Flyvbjerg (2006) created an argument in defense of case study methodology by sticking closely to the construct of human learning and context dependent knowledge, citing phenomenological studies about learning to defend the position. In basic terms, the argument is that case study methodology has been credibly established as a foundational element of human learning. From that perspective, the methodology is a

scientifically valid construct for more context dependent knowledge in the legitimate research arena, creating valid competence by its mere existence and continuing execution (Flyvbjerg, 2006). Perhaps not so simple; but certainly a compelling thought!

Dooley (2002) generalized support for the context dependent learning validation argument by suggesting that the case study researcher is generally interested in a specific phenomenon. In that regard, the investigator chooses to understand the phenomenon thoroughly and completely, accomplishing this by not controlling the specific variables but by methodically gathering, observing, and analyzing all the variables and their interacting relationships. Other criticisms of case study, observed as weaknesses, cite it as a restrictive, narrow method that can only lay the exploratory foundation for more credible methods (Dooley, 2002).

Probably the more scientifically significant and detailed arguments against case study research in the form of weakness revolve around the issue of generalizability. The cornerstone of the argument focuses on the question of whether or not one can legitimately generalize to a single case. Yin (2009) suggested that the same position can be taken relative to a single experiment as well. The differentiation is made in the context of multiple cases and from the philosophical perspective that like experiments, case studies are generalizable to theoretical propositions and not necessarily to populations or universes (Yin, 2009; Flyvbjerg, 2006).

The challenge for the researcher to overcome the issue of generalizability is perhaps more of an operational charge in the selection of a case or cases where the case itself is asked to heroically represent a population of cases that is most likely larger than the case itself (Seawright

& Gerring, 2008). Other views on this philosophy note that purposeful, theoretical sampling can aid in choosing cases that that are likely to replicate or extend the relevant theory or fill theoretical categories (Meyer, 2001).

In concluding this discussion, it is therefore appropriate to note that challenges in generalizability in the form of weakness occur in the area of (a) case selection, (b) representativeness, (c) variation on relevant dimensions, and (d) the challenge of distinguishing the actual case from the background cases or the population that surrounds the case being studied (Seawright & Gerring, 2008). This is a known area of shortcomings that create a general tension between pursuing replicability in multiple cases and a more analytical generalization through new theoretical insights that may emerge from the single case design (Piekkari, Welch, & Paavilainen, 2009).

Strengths

There is a clear lack of consensus around many aspects of case research from definition to its legitimate value in research. The criticisms about what the method is or is not, emerge through a substantive list of statements in the affirmative that summarize much of the dilemma and lack of agreement. Interestingly, the scope of disagreement is framed almost conveniently through the lens of the method's arguable strengths

- case study research is a legitimate form of research
- case study research can involve or include one or more cases

- case study research can engage multiple research paradigms or philosophies on a single case or with multiple cases
- case study research can rely on quantitative data, qualitative data, or both
- case study research can be applied to theory building
- case study research can be used for exploratory, descriptive, or explanatory purposes
- case study research allows the investigator to maintain the holistic and meaningful characteristics of real life events
- case study research emphasizes triangulation by embracing the collection and use of multiple sources and types of data which strengthens substantiation of constructs and hypotheses
- case study research is useful for both generating and testing hypotheses, but is not limited to those research activities alone
- case study research provides a distinct advantage in situations when a *how* or *why* question is being asked about a contemporary set of events where the investigator has little or no control
- case study research can provide strong evidence in the examination of *how* and *why* a treatment or experiment worked (Dooley, 2002; Yin, 2009; Flyvbjerg, 2006; Meyer, 2001).

Flexibility is one of the more understated strengths of the case study methodology. This thought is more clearly articulated when considering that case study research has the ability to

(a) wrap itself around a single or multiples cases, (b) to embrace and include both qualitative and quantitative data, and (c) to engage multiple research philosophies (Dooley, 2002). As the discussion of the various attributes of the method are many, so are the definitions that can add to the appreciation for the value of case study research methodology. In the context of flexibility, the case study is sometimes looked at as a descriptive research document in a generally narrative form that is based on a real life situation or event (Dooley, 2002).

Others narrow the definition functionally by looking at a case study as an intense, qualitative, quantitative, or combination analysis of a single unit or small number of units where the investigator's role is to understand a larger number of similar units (Seawright & Gerring, 2008). In this definition, it is implied that case study research has mixed discipline flexibility with a goal of generalizability to a relevant population outside of the defined case structure.

In exploring definitions, Seawright and Gerring (2008) noted that the typical case, defined as a stable, cross case relationship, exemplifies the ability of a case study to legitimately explore the causal mechanisms that are at work in a case environment. From the perspective of interventions, Edwards (1998) explained that the theoretical application, in the causal environment, can establish generalizable linkages and some predictability. This applies on the assumption that if conditions elsewhere have similar conditions, then approximately similar consequences should occur (Edwards, 1998). In this regard, the case study, in the appropriate conditions, can establish a causal relationship between an intervention and it effects (Edwards, 1998; Yin, 2009).

To further look at strengths, typologies of specific applications help to demonstrate the evolution of the method and the general breadth of relevant applications. This can be viewed in quantitative, qualitative, and mixed method concepts given potential case scenarios. For example, the typological discussion may be extended into a theory testing area whereby existing theory can be reviewed in quantitative concepts (Seawright & Gerring, 2008). Such descriptions of applicability also provide a scholarly view into the strengths of case study methodology in large *N* or large sample applications. This is a noted strength of case study research where various case types form the foundation for several qualitative and quantitative case type options that include

- typical cases with examples of cross case relationships to confirm or disconfirm causal mechanisms related to theory
- diverse cases which examine X and Y values in exploratory or confirmatory terms
- extreme cases that examine unusual X and Y values lying many standard deviations away from the mean of X and Y, providing exploratory application
- deviant cases that deviate from cross case relationships in the form of an outlier, providing both exploratory and confirmatory use
- influential cases that have confirmatory uses where there are influential configurations of independent variables
- most similar cases which are similar on specified variables and when broadly representative of the population, provide the strongest basis for generalization

- most different cases that are different on specified variables and serve both exploratory and confirmatory uses to (a) eliminate necessary causes, or (b) provide weak evidence of a causal relationship (Seawright & Gerring, 2008).

The typology platform expands further as a means to articulate the more global attributes of case study research. In some respects, the appearance of deliberate efforts to expand the definition, discussion, and defense of the methodology serves to build the argument for the strengths of case study research. Combining research objectives and case selection techniques, Levy (2008) contributed a simplified list of case study typologies. The purpose was to help clarify and articulate the distinct strengths and underlying flexibility characteristics of case study research within specific typologies. The list includes the following categories

- ideographic cases, segmented by sub types of inductive and theory guided case studies, which are intended to describe, explain, or interpret a specific single case
- hypothesis generating cases, which examine one or more cases with the intent of generalizing beyond the data
- hypothesis testing cases, which combine theory confirming and theory informing categories
- plausibility probes, which are illustrative case studies that are a process step between hypothesis generation and hypothesis testing (Levy, 2008).

Generalizability

Case study methodology lends itself to generalizability through a testing mechanism known as falsification. This process is a significantly rigorous testing method for scientific propositions, and especially for establishing the potential, on a case by case basis, for valid generalizability of a single case (Flyvbjerg, 2006). The method states that if just one observation does not fit with the proposition, it is considered not valid generally and then must be revised or rejected (Flyvbjerg, 2006).

To better understand this argument for case study testing rigor, an analogy is constructed relating to swans and the possibility for the existence of the proverbial *black swan*. Using the proposition that all swans are white, the existence or observation of just one black swan negates or falsifies the proposition. Flyvbjerg (2006) argued that this would have general significance and thus generate further investigation and theory building.

It is easy to conceptualize the black swan concept to a broad range of case or other types of applications. The case study is suited for uncovering *black swans* because of the in depth approach and commitment to using a variety of data sources in a triangulation method. Often, the end result can be that what appears to be a white swan, after in depth examination of the data and evidence, is not. This yields the proposal that the case study methodology can be generalizable to a single case and provide valuable scientific discovery as a "supplement or alternative to other methods" (Flyvbjerg, 2006, p. 228). If the single case study does in fact lend itself to uncovering *black swans*, then the methodology may be arguably a better choice among others for

understanding and evaluating the effects of a single intervention in the context of an established theory.

Expanding on this principle as case study strength, it is important to reemphasize the overall flexibility of the method and the ability to generate theory, provide simple descriptions, or examine complex themes that are theory based or attempting to execute a theoretical proposition (Creswell, 2007). From an historical perspective provided by investigators, it is noted that the case study process, combined with the *white swan* presumption, has caused many researchers to discover that their hypotheses were wrong (Flyvbjerg, 2006). Furthermore, after intensive, in depth case studies, researchers have publicly noted that their preconceived views, assumptions, and concepts were wrong, compelling them to revise their hypothesis simply on the falsification principle. This leads to the argument that falsification, not verification, is one of the more compelling strengths of case study research (Flyvbjerg, 2006).

A summary and consolidation of case study strengths is an interesting proposition. One gets the impression that the methodology, for all intents and purposes, has struggled in the scientific and academic communities for broad acceptance and legitimacy. However, there is no question that the case study methodology has a significant historical foundation as valid research in psychology, sociology, political science, business, economics, anthropology, social work, education, nursing, and community planning (Yin, 2009). The similarities to ethnography and historical studies cannot be overlooked. However, the case study is in fact unique in its focus on

the theoretical relationships to a specific phenomenon or time constricted event. Case boundary matters and separates the method from its closest methodologies.

While it has been argued here that a consistent definition of a case study is largely elusive, it may be best summed up in terms of what differentiates it from other methodologies from the perspective of the advantage or opportunity for the investigator. In that regard, Flyvbjerg (2006) generalized that a case study represents the opportunity to gain a certain proximity to reality. This proximity to the reality of an event or phenomenon generates an investigative momentum and intense observation. Not unlike Grounded Theory, this discovery process, aided by diverse data sources, tends to allow the researcher to abandon preconceived notions and theories as the process unfolds. This same process of inquiry then guides a researcher through a learning process which ultimately leads to some level of advanced understanding about a real event or phenomenon (Flyvbjerg, 2006).

What Must Go Right

It is apparent within the scope of the present study that Yin, Eisenhardt, and Stake are considered to be the foremost experts on case study methodology (Creswell, 2007; Babbie, 1990; Creswell & Plano Clark, 2007; Piekkari, Welch & Paavilainen, 2009; Dooley, 2002; Edwards 1998; Meyer, 2001; Flyvbjerg, 2006). Yin (2009) will be the cornerstone of the following discussion addressing the requirements of a successful case study research project. This is predicated on the prevailing opinion gleaned from cited works in this section that Yin has established the pioneering view of the credibility of the case study in addressing (a) strong,

quantitative and qualitative mixed method case design, and (b) the argument of exploratory, descriptive, and explanatory power of the method, and (c) where the case study methodology is applicable in taking on research questions seeking to determine the effectiveness of a theoretically based treatment or intervention (Yin, 2009).

Method Applicability

The strategic development and design of a case study is a key process model necessary to understanding Yin's (2009) approach to executing a successful research project. Addressing the appropriateness of using the case study methodology is where the development evaluation and discussion begins. The basic premise of the applicability of the case method or any other research method is first predicated on three specific conditions (a) the type of research question, (b) the control that an investigator actually has over behavioral events, and (c) the focus on contemporary rather than historical phenomena (Yin, 2009).

Given those qualifying conditions, the case study method is preferred when (a) *how* and *why* questions that have substance and form are the research focus, (b) the investigator has little or no control over the actual behavioral events, (c) the focus of the study and proper questions revolve around a contemporary phenomenon within a real life context, and (d) the more the research questions require an in depth description of some social phenomenon (Yin, 2009, pp. 2-4). This concept plays out when considering the explanatory value related to *how* and *why* questions where the investigator is seeking operational links that are trackable over time as opposed to simple frequencies or incidences (Yin, 2009). Related to the research project under

consideration around a 911 call center intervention, the *how* and *why* mechanisms in the case study design appears to be relevant.

The Design Process Model

The critical element to the success of case study research is the design and the design process. The elements of the design begin with a clear picture and plan for the process of developing and executing a case study:

- plan
- design
- prepare
- collect
- analyze
- share (Yin, 2009).

The design itself requires a critical thinking process that creates the investigator's pathway to (a) define the unit of analysis and the likely case(s) to be studied, (b) develop the theory, propositions, and issues that formulate the basis or foundation for the anticipated study, (c) identify the case study design: single, multiple, holistic or embedded, and (d) define the procedures necessary to sustain and maintain the quality of the case study (Yin, 2009, p. 24). This method specific logic should also coincide with basic guidelines that drive the issue of research quality identified as (a) construct validity, (b) internal validity, (c) external validity, and (d) reliability (Yin, 2009; Singleton & Straits, 2010; Creswell, 2007).

Case Study Research Design

The success of case study research evolves from the core blueprint, or design of the actual investigation (Yin, 2009). Various descriptions of research design involve key characteristics which align with the broader framework of case study. For example, Creswell (2007) notes that good research starts with (a) assumptions, (b) a worldview, (c) the potential use of a theoretical lens, and (d) the study of problems that are intended to address the meaning that individual or groups assign to a given social or human problem.

Specific to case study, five critical elements or components of the design are especially important when relating design to the success of the actual study. Those elements are

- the study's questions
- the specific propositions, if there are any
- the unit or units of analysis
- the logic linking the data to the stated propositions
- the criteria for interpreting the findings (Yin, 2009).

Understanding these elements, their intended parameters, relationships and contributions, and successful execution in the case study process provides guidance as to the overall factors that define a properly performed case study research project (Yin, 2009).

The study's question(s), most preferably addressing *how* and *why* issues, provide a key challenge early in developing the study. The challenge of framing the questions clearly and substantively can be achieved in three stages (a) using the literature to narrow the field of interest

to a topic or two, (b) examining a study or studies around the key topic of interest, looking for the nature of the questions addressed and if there is opportunity to close loops or take on recommended new research areas, and (c) examining studies on the same topic where the investigator may find support for potential questions or suggestions on narrowing or focusing the intended area of research (Yin, 2009).

The study's propositions then direct the researcher's attention to the issue or issues that should be examined in the study. Yin (2009) maintains that if and only the investigator takes the time to develop propositions that connect to the *how* and *why* questions, will the project move forward. It is noted that experiments, surveys, and many other research methods do not have propositions per se, but in fact are driven to execute an exploratory function. This may also apply to case studies such that it is still important to be able to provide an explicit rationale, explanation or stated purpose, including the criteria required to judge the effort successful (Yin, 2009).

The unit or units of analysis in case study goes to the fundamental issue of defining specifically what the case is. This is one of the more critical issues of success as it one of the more consistently raised challenges about the methodology overall (Yin, 2009). A case may legitimately be an individual, event, or entity. Defining the case clearly by understanding and articulating its boundaries, contributes to the likelihood that the specific questions and propositions will also contribute to keeping the case as a whole, and within manageable limits (Yin, 2009). The definitions of the case and the unit(s) of analysis are one in the same and should

be aligned or related to the way the research question or questions are defined. This is noted to occur when the investigator accurately specifies the research question. It is also noteworthy that the units of analysis can be adjusted when new discoveries or significant revelations emerge from the data collection process (Yin, 2009).

Defining the unit of analysis is a key to success as it becomes the primary definition of the case (Yin, 2009). Additional considerations around the unit of analysis can help to (a) focus the study, (b) head off confusion related to definitions in the case and the units of analysis, and (c) help to

- define groups or members of groups when applicable
- set time boundaries to define the beginning and the end of the case
- provide a collective mechanism through these steps that will contribute to defining the scope of data collection in such a way that the investigator is able to differentiate between data about the subject of the case, the actual phenomenon, and the data outside of the phenomenon that provides the case with its context (Yin, 2009).

Establishing the boundary definitions is especially critical in the general context of providing a frame for the event or phenomenon under observation and a time period. Additionally, the relevance of creating the spatial, temporal, and other necessary boundary relationships is at the core of staying on track with a real life event as opposed to mistakenly pursuing an abstraction such as a topic, argument, or unrelated hypothesis (Yin, 2009).

A final advisory note on the importance of proper definition of the unit of analysis in case study research relates to seeking guidance from previous research. Available research literature can provide critical insight and can help to guide the process of defining a case and the unit of analysis. Successful case studies and their units of analysis ideally are similar to previous bodies of work or at least should innovate in operationally clear ways (Yin, 2009).

Data linking is the step where the investigator draws upon specific methods to link the data to the propositions of the case. The process is a success factor and provides the mechanism to actually combine or calculate the data as a "direct reflection of your initial study propositions" (Yin, 2009, p. 34). The critical issue for a successful case is to consider the available choices and how they can serve the investigator's objectives when developing the design for the case study. Specific methods for data analysis related to case study research include

- pattern matching
- explanation building
- time series analysis
- logic models
- cross case synthesis (Yin, 2009)

This phase of the research is an area where the investigator may find that they have either too much or too little data with the latter scenario forcing a return to the data collection phase.

Interpreting the findings of the study is the final component and area required for a successful case study. In addition to straightforward statistical analysis applied to quantitative

data that has been planned into a case study design, the researcher must also be able to apply alternative strategies around qualitative information that will provide the tools to identify and address rival explanations (Yin, 2009). As a case study design issue, the intellectual and critical thinking challenge is to anticipate and separately identify the important rivals to the degree that information about them can be developed in the data collection phase. Failing to anticipate and account for rival explanations in the design phase will suggest the rationale for future study, but fail to address the rival issues in the current project (Yin, 2009)..

Finally, understanding the role and developing and applying a preliminary theory is a critical feature of the design that distinguishes case study research from other methods such as ethnography and grounded theory (Yin, 2009). The theory development process as part of the design phase is essential, whether the case study project's intent and purpose is to develop or test a theory. Yin (2009) notes that one of the key failures evolves from the mistaken practice of running off to do the field work and collect data before there is an understanding or theory of what is actually being studied. Considering the five components essential for a successful design, the theory related to case study creates an overarching theory of what it is that is being studied. The primary goal of theorizing in the design is to develop a proper blueprint for the study supported by theoretical propositions that drive the underlying story of why "acts, events, structures, and thoughts occur" (Yin, 2009, p. 36).

Given this premise, a more complete research design evolves that provides both the evidence and strong guidance in determining what specific data to collect and how to formulate

the strategies to analyze the data. This assumption provides the backdrop that Yin (2009) establishes for the successful execution of case study design as a quantitative, qualitative, or mixed methods design that can address explanatory, descriptive, and exploratory situations and applications.

Conclusion

Case based research projects are successful when executed in a step by step manner. This manifests itself in a process where the value of each step and its contribution to a successful effort is dependent upon the validity of the preceding steps (Edwards, 1998). Clearly, the ability to apply multiple sources of data and a broad range of research techniques distinguishes the methodology and provides the investigator with a broad palette of options for the purposes of a credible study. Through proper design and methodical execution, it has been demonstrated that the case study can assure the critical elements of proper scientific research, delivering construct validity, internal validity, external validity, and reliability (Dooley, 2002).

Application

AMDS 8730: Research Design

The Application component develops and explains the research and design approach for an embedded single case study based on the requirements for Chapter Three specified in the Walden dissertation rubric. The proposed research study will build from a range of both quantitative and qualitative data, including existing records, notes, internal and external surveys, and interviews. Additionally, survey and other data from a recent emergency 911 communications center intervention in King County, Washington, will contribute to the research.

The proposed methodology will consider whether or not self leadership theory in the context of a specific, single case, has a significant and measurable effect on variables such as job commitment, job satisfaction, and employee turnover. Qualitative input provides a contextual basis and in depth insight related to the pre existing and post intervention environment and conditions.

Yin (2009) and Flyvbjerg (2006) argued that a single case study may have generalizability given the right case and right evidentiary circumstances. Embracing that theory, one of the critical strengths of case study research is the ability to work and build across a variety of both qualitative and quantitative data. An embedded single case study design provides a broad vehicle to converge different forms of quantitative and qualitative evidence for the purposes of addressing the researcher's exploratory questions (Yin, 2009).

While caution and restraint must be exercised in evaluating the generalizability of any conclusions, a case study design might provide the opportunity to expand and further examine the relationships and applicability of self leadership concepts in a broader range of autonomous job positions.

Overview

Call centers are a public and private sector communications interface with acknowledged and seemingly universal problems in areas such as employee job satisfaction, commitment, and retention. Call receivers function autonomously in high stress, self-directed environments where burnout, low motivation, absenteeism, low morale, and high turnover are commonplace. Whether public or private, there is a high social and economic cost implied when constant and significant turnover is coupled with potentially negative and unhappy employees interfacing with the public.

Various approaches are found in the management literature for dealing with issues such as motivation and job satisfaction, job enrichment, and job enhancement. However, there is an opportunity to broaden the discussion for autonomous job roles by studying possible relationships between validated self leadership concepts in the literature and a body of existing call center public survey data, notes, and employee records as well as interviews and pre and post employee survey evidence.

The goal of the proposed study is to (a) determine if meaningful relationships between dependent and independent variables exist in a single call center improvement effort, (b) examine how or why those factors or relationships are related to self leadership

theory, and (c) determine what relevant outcomes, if any, occurred as a result of the single event in question.

Applying the case study methodology to an individual 911 call center intervention may provide valid feedback and help to expand the discussion or knowledge around self leadership specific to individuals in autonomous job roles. Additionally, existing data from the single case could provide insight into causal relationships, success factors, and perhaps suggest other approaches to deal with known problems such as absenteeism, turnover, and low moral and productivity.

The case study results may also raise additional questions and suggest appropriate areas for further research or additional experimental interventions, driven or supported by self leadership or other concepts that could emerge from the research. In either of the public and private sector, refinement of existing and validated self leadership or similarly focused strategies could contribute to improved performance, morale, job satisfaction, and reduced employee turnover, among other measurable variables.

The proposed study will follow the view that the research questions should determine and drive the research design (Creswell, 2007; Yin, 2009; Creswell and Plano Clarke, 2008). The study is looking at a single event in isolation seeking to answer *what*, *how* and *why* questions. The case study is a valuable tool for capturing and examining the results of a point in time phenomenon of interest, event, intervention, or experiment. The value of this methodlogy is to explore very specific questions about the event, including

specific behaviors related to the event (Yin, 2009). A case study also has the ability to mix quantitative and qualitative evidence. Broadly, the research questions under consideration include

- Is the Gallup assessment instrument an effective tool for developing measurable change strategies in a 911 call center?
- To what degree did the findings of the Gallup tool relate to employee perceptions of problems in the call center?
- What was the effect of the call center intervention on
    - absenteeism
    - sick leave
    - overtime
    - turnover
    - morale
    - complaints
    - motivation
    - job satisfaction
- How were these variables affected?
- Why were these variables affected?
- How do the outcomes relate, if at all, to established principles of self leadership?
- Based on the outcomes, what, if any, were the unintended consequences?

- How can this information advance further study of E911 call center change initiatives?

Self Leadership: A Theoretical Design Framework

Self leadership theory is grounded in social learning, cognitive evaluation, self control, and intrinsic motivation theories (Manz, 1986; Neck & Houghton, 2006). Self leadership distinguishes itself from more narrow intervention theories and concepts, which tend to be more self help oriented work tools. Self leadership takes a more holistic, long range view by focusing on intrinsic motivators and rewards that can be addressed through targeted behaviors (Markham & Markham, 1995).

As an independent variable, the theory has been applied critically in the research literature, focusing on those variables associated with behavior, natural rewards, and constructive thought strategies (Manz, 1986). These variables form the underlying application strategies. The question becomes to what degree do they apply in a given situation. The dependent variables reflect commonly predicted individual outcomes from the application of self leadership theory, and include

- commitment
- job satisfaction
- creativity and innovation
- psychological empowerment
- self efficacy

- positive affect
- potency
- independence
- trust (Neck & Houghton, 2006).

Self leadership theory is a good fit with the proposed study generally and an embedded single case study design that draws on data triangulation and convergence practices. This conclusion is drawn from several critical attributes of the proposed study, the call center environment, and design criteria where (a) key dependent variables are recognized as central to call center problems related directly to individual employees, (b) the theory as an application seeks to address problem solving in real world applications and with real phenomena, (c) the theory has a direct relationship to behaviors and behavioral targeting as a solution mechanism, and (d) the theory as a treatment aligns with the pragmatism world view of applying what works, of using multiple and diverse approaches, and considering and applying both subjective and objective knowledge to follow a design that places the research question at the front of the effort (Creswell & Plano Clark, 2007; Yin, 2009; Neck & Houghton, 2006).

Method Discussion

In an application setting considering autonomous job roles generally, research questions and opportunities still remain around possible relationships and the effect of self leadership as a an independent variable. In the proposed study, a body of research exists that supports and drives

an assessment tool used to help structure a cultural change initiative in the call center. From the results of this effort, the scope for the proposed study narrows to questions around economically based dependent variables such as employee turnover, absenteeism, job commitment, and productivity (Houghton & Neck, 2002).

The proposed study also has identifiable social change implications. The measurement or discovery of any potentially effective strategies that could contribute to reducing cost and better performance or service delivery would be a public benefit. Other potential social benefits include increased public satisfaction and even life safety. These types of services are costly. While any findings or conclusions are not likely to be generalizable, it would ultimately be beneficial if further study followed that would continue to address individual behaviors and performance in autonomous job roles.

Given measures such as turnover and absenteeism, there are also questions about causal relationships that other behaviorally focused interventions or approaches may have. Further study may determine whether or not other methods, variations, or approaches can contribute to the self leadership discussion in the context of autonomous job roles. This is a contemporary consideration given the existence, seeming growth, and emerging reliance on all types of call center operations.

Doing business over the phone is nothing new. But perhaps the autonomous job and social perspective wrapped in a more intense and holistic focus on how employee relationships and behaviors contribute to doing business over the phone is justified. Organizations of all kinds

increasingly leave a variety of complex transactions, along with the image and perception of the organization, to the discretion of individuals in highly autonomous environments such as call centers. As this practice expands globally, both inbound and outbound, complex cultural and behavioral issues related to providing this type of service might naturally deserve and receive more intense social scientific attention.

Going a step further, there may be increasing value in understanding the behavioral context and social implications in the autonomous environment generally by extending the self leadership concept to emerging non verbal communications practices. While we all seem to be increasingly familiar with e-mail as a baseline, the generation behind appears to be extremely comfortable with having most if not all of their transactions and interactions personalized and available in their hand instantaneously. What are the implications for training, education, and behavior management if business success relies on how effectively each and every employee communicates individually and in constantly changing non verbal business environments? This discussion is not ignorant of the obvious question of a rehash of business writing or communications skill development and management. The underlying practical assumption is that there exists an emerging social and behavioral world tied to a new generation's culture. From a design and inquiry perspective this assumption drives the underlying premise of the proposed case study.

Looking to our children's children, in our lifetime, it is fair to consider and ask new questions about old ideas. As such, it is worth asking and pondering how changing and evolving

interpretation and meaning of language relates to understanding and managing behaviors in very specific contexts. Is it rational to isolate and examine a single case, as a point in time, in relation to various forms and styles of generationally driven written and verbal communication? Another assumption in this process is that certain expectations related to changing communication environments are continually emerging and being redrawn. As such, those notions are relevant to understanding cause and effect relationships in autonomous job circumstances.

Design Fit

After considering potential research questions and the opportunity to actually study the topic, arriving at a specific design requires a thoughtful review of the more classical qualitative research options. Creswell (2007) identified and advocated five specific approaches to qualitative inquiry that include:

- narrative research, defined as a method to explore text with a specific focus on stories told by individuals
- phenomenological research, defined as a method to describe the meaning for several individuals related to their common experiencing of a specific phenomenon or event
- grounded theory research, which has as an underlying intent to move beyond description or a descriptive process and to specifically generate or discover a theory specific to a process, action, or interaction that emerges from the views of a large group

- ethnographic research, which focuses on an entire cultural group and the description and interpretation of the shared and learned patterns of values, behaviors, beliefs, and language of an entire culture sharing group.
- case studies, defined as a the study of a specific issue explored through one or more cases within a bounded or otherwise defined system

To determine the design fit, it is important to consider the circumstances of the proposed study. It is worth repeating that the primary design criteria should focus on the research questions for the purposes of determining which methodology and design are most appropriate (Yin, 2009; Creswell & Plano Clark, 2007; Corbin & Strauss, 2008; Creswell, 2007). The proposed research considers outcomes related to a single event where the primary unit of analysis is an individual E 911 call center operation.

Additional design factors include the theoretical context and the world view where the research concepts best fit. The call center is an autonomous work environment. Therefore, the study will contemplate the significance of variables such as individual job commitment, job satisfaction, and employee turnover in relation to self leadership theory. Going further to apply the pragmatic world view, the researcher seeks to determine what methods or approaches best serve to solve a real world problem. This is as an essential component of the researcher's overall design approach and fits with the real time application of the proposed case study method.

Other important considerations include the data environment for the study. The proposed inquiry will draw from a variety of both qualitative and quantitative evidence. The data sources

will also include historical records in the form of notes and interview files. Other evidence will take the form of semi structured interviews developed specifically for the proposed study.

Qualitative Design Review

Prior to fully committing to a specific methodology and design, it is incumbent upon the researcher to evaluate the different models and processes in order to determine which specific methodology will provide the best fit. The following discussion is around the general research questions related to the single 911 call center. Given the circumstances of interest that would support the study, this section also proceeds under the assumption that the proposed research project will be qualitative research supported by both quantitative and qualitative evidence.

Narrative is not a good approach because it focuses most exclusively on storytelling by individuals (Yin, 2009). This is a poor fit simply on the basis of the research interest of exploring a single case event in the context of a very specific assessment tool and self leadership theory. The narrative might be an interesting methodology for exploring the process and experiences of the individual responsible for administering the intervention in the call center in this particular study. It might also be useful to examine the perceptions of a member or members of the group or sub units of the primary unit of analysis such as supervisors who participated in the 911 call center intervention.

Ethnographic design also does not apply given the circumstances of the proposed study. Ethnographic research is defined by a focus on an entire cultural group. In that regard, the call center receivers as a cultural group would fit the member definition of the ethnographic design. The point of separation relative to the proposed study emerges at the point where the ethnographic study seeks to describe and interpret the shared and learned patterns, behaviors, beliefs, and language of a culture sharing group (Creswell, 2007). Given that description, the ethnographic study would be an appropriate design for a call center as an information gathering study to better define the cultural factors. This approach may best serve as perhaps a precursor to doing an experimental treatment or some other type of intervention. It might also be valuable to create a greater understanding of the cultural environment and circumstances in the call center amongst call receivers.

A phenomenological design has some applicability in its overall intent to explore and describe what all cast members in a study have in common through the experience in relation to a given phenomenon (Creswell, 2007). The methodology also has a very strong what and how component and intent in terms of pursuing the research questions (Creswell, 2007). The philosophical parameters of the phenomenological design suggest that (a) study members all share a lived experience, (b) members view the experiences as conscious ones, and (c) the essence of the experience can be described and not necessarily explained or analyzed (Creswell, 2007).

There could be a fit for the phenomenological methodology in the proposed study if, for example, the research questions sought to drill down into the actual description of the experience members had in relation to the intervention in a qualitative context. For the purposes of refining the self leadership treatment or intervention process, a phenomenological design would be appropriate. Without that research intent in the proposed study, a phenomenological design does not fit.

Considering the study in a purely qualitative view, grounded theory emerges as one of the more logical choices for the proposed research project. The systematic procedure for grounded theory follows a path where the researcher explains process, action, or interaction on a specific topic (Creswell, 2007). Given the particular underlying event for the proposed investigation, the broader intent of grounded theory would be a good fit. One of the stronger arguments for considering this design option relates specifically to the variety of data inputs available and the opportunity to examine and explore the social processes and interactions in a call center as a result of a specific intervention. It is arguable that the grounded theory process could in fact yield a theory or explanation related to the experiences held by call receivers as a social group (Corbin & Strauss, 2008; Creswell, 2007).

The proposed study seeks to explore and examine the outcomes of a single call center event. In context, the inquiry will be executed in relation to self leadership theory and a substantive body of existing research that supports an assessment tool used in the

911 call center intervention. The project will be substantively grounded by data obtained from the field. This will include existing surveys and new inquiries designed to address issues uncovered in the analysis of existing data. The critical point of distinction is that the proposed research does not seek a new theoretical explanation around the call center intervention or the assessment instrument used by the consultant.

A grounded theory design is used on the premise that no theory exists to describe a phenomenon or that existing theory is inadequate to describe the phenomenon (Creswell, 2007). The conditions, evidence, and existing theory to be considered in the proposed study contribute to eliminating grounded theory as a best choice for a study design in this particular instance. However, it is worth noting that it is also possible that some new theory could emerge from the case study process (Yin, 2009; Creswell, 2007).

Given the review of the five major qualitative designs, case study research emerges as the appropriate choice for the study because of the (a) ability to isolate a specific phenomenon in a bounded event, (b) ability to address descriptive and exploratory challenges, and (c) ability to draw on and integrate into a logical design, a variety of both quantitative and qualitative data (Yin, 2009; Creswell & Plano Clark, 2007).

Proposed Case Study Design

The proposed study addresses a single intervention event in an emergency 911 call center. The environment and internal and external social conditions are nothing new. People

need help and a way to ask for it. The telephone and call centers are a long standing mechanism to seek instant help. As we evolve in a technologically specific, specialized, and compartmentalized manner, call centers also extend to a broad range of applications and constituents from product services to animal welfare, and a broad array of very specific crisis interventions.

One of the advantages of a case study design in this application is that it captures, in isolation, a specific social phenomenon for the express purpose of considering the research questions around a behavioral event. Addressing *how* and *why* questions, a case study design can provide valuable evidence related to interventions, treatments, and various types of experiments (Yin, 2009, p.16). This view also emphasizes the flexibility and applicability of the methodology from the perspective of the design criteria, functions, and attributes

- a study's specific *how* and *why* questions
- the study's theoretical propositions around pointing attention, limiting scope, and suggesting possible links between phenomena
- the study's units of analysis where the main units must be at the same level of the study questions and comparable to those previously studied
- the overall logic linking the data to the propositions, such that there is an opportunity to match various pieces of information to rivals
- the criteria for interpreting the findings include an imprecise analysis of iterations between propositions and data, matching contrasting rival patterns to the data (Yin, 2009).

Embedded Single Case Study

The proposed design is an embedded single case study. The design will be enhanced by incorporating concepts and techniques associated with the convergence and triangulation of data (Yin, 2009; Creswell & Plano Clark, 2008). There are complementary relationships in this approach that will contribute to the overall depth of the proposed study. The use of triangulation within a case study can enhance the investigation of more complicated questions while developing a more robust array of quantitative and qualitative evidence to support the researcher's findings and arguments (Yin, 2009).

The embedded single case study design is applicable when there is an opportunity to test the propositions of an existing and established theory such that the research can function to confirm, challenge, or extend the theory (Yin, 2009). The single case can apply to consider the correctness of a theory's propositions or whether some other explanations might be more relevant. As a qualitative design, a single case can constructively contribute to knowledge and theory building (Yin, 2009, p. 47). The proposed case study will examine a single intervention in the context of self leadership as theory and as an independent variable given the theory's focus on behaviors, thought processes, and rewards (Manz, 1986).

The study examines a process developed from a significant body of work conducted by Buckingham and Coffman (1999). The consultant who administered the call center intervention drew upon 13 critical perceptual statements designed by the Gallop researchers. The sample behind these statements, measured on a Likert scale of agreeableness, represented data collected

from over 105,000 employees in over 2,500 business units across 24 companies in 12 different industries (Buckingham & Coffman, 1999).

The generalizations and conclusions specific to the survey statements were supported by 25 years of quantitative and qualitative data. The data were consolidated in a meta analysis in support of the 13 statements designed to gauge employee perceptions covering (a) customer satisfaction and loyalty, (b) profitability, (c) productivity, and (d) turnover (Buckingham & Coffman, 1999; Harter, Schmidt, Killham, & Asplund, 2006). This body of existing data and research will be examined with other findings and evidence available through the call center. The process and the evidence will provide a basis to compare and contrast self leadership theory propositions such as the ability to facilitate a broader, higher level perspective on individuals' guiding standards (Manz, 1986).

These standards will contribute conceptually and help facilitate the development of theoretical propositions and rival hypotheses specific to the proposed study. Self leadership theory suggests that intrinsic motivations are a powerful intervention that can affect commitment, productivity, and intent to stay with a job. These motivations can be triggered in any number of ways, creating a rival explanation opportunity related to the case study on many different levels (Manz, 1986).

The call center project has been a yearlong effort focusing intensely on the call center and its members. The attention alone given the autonomous job role environment, could provide one explanation of any number of outcomes. Is the attention paid to the unit alone enough to address

workers' long standing issues such that actual behaviors and attitudes change measurably? And does the nature of the members' self awareness as it relates to the intervention, provide a logical or viable connection between the self leadership theory and the grounded assumptions behind the Gallup research? Yin (2009) suggested that considering rival explanations and theoretical propositions prior to embarking on a case study is critical to the final product and its validity.

The embedded single case design is used when the research indicates the need to include quantitative, qualitative, or both types of data to answer a research question in a predominantly quantitative and qualitative study (Creswell & Plano Clark, 2008). In this setting, one data set may provide a supportive, secondary role that is based on the other data type. The proposed study will incorporate existing quantitative data in the form of internal and external surveys and employee records that include relative data such as turnover, absenteeism, and attrition. There are also the conclusions and findings of the mentioned meta analysis supporting the Gallup research. As an exploratory process, this information will be considered in the context of existing intervention data and theory based on the generalizations attributable to the Gallup Organization 13 statement platform (Buckingham & Coffman, 1999).

It is an appropriate approach given the ability of case study design to suggest propositional and theoretical links between phenomena and to evolve and examine relationships as the data unfolds (Yin, 2009). The theoretical propositions set out in self leadership research will provide the opportunity to examine the data in a comparative environment with the Gallup

propositions. This is an important element of case study design where it is critical to explore and consider rival explanations and theories (Yin, 2009).

Challenges to the design emerge around maintaining a proper focus on the primary unit of analysis. Often, researchers spend too much time examining the embedded units and lose sight of the overall objective of study in the form of the primary unit of analysis (Yin, 2009). Proper focus is sustainable in this type of design by anchoring the research question concepts in very basic terms

- did the intervention being studied actually work?
- why did it work?
- how does the outcome relate to the theoretical propositions of self leadership?
- are there relationships between self leadership theory and the theoretical premise supporting the Gallup assessment instrument and the findings it generated?

The embedded case study can employ more than one unit of analysis in the form of sub units (Yin, 2009). In this particular application, the call center is the primary unit of analysis under investigation. The sub units also identified as embedded units will include (a) call receivers, (b) call dispatchers, who have a different but parallel function, (c) first line supervisors who oversee both groups, and (d), two critical managers who oversee the entire unit.

The E 911 call center is a free standing entity within the global universe of that type of call center, and is also a sub unit of the Sheriff's Office as the global organization in this case.

By definition, this construct and individual unit attributes create an embedded case study design (Yin, 2009, p. 50).

Employing techniques and concepts from the triangulation and convergence of quantitative and qualitative evidence will create a method and process to bring different types of data together that have been developed separately. This approach creates the opportunity in the design to compare, contrast, and interpret the different data sets and results or findings as they are converged (Creswell & Plano Clark, 2008).

Given the existing employee data and the quantitative data supporting the assessment instrument and self leadership theory, a general case study embedded profile will be used (Yin, 2009). This model suggests that qualitative inquiry and data will be gathered and applied to support and strengthen the quantitative findings relative to research questions and theoretical propositions (Yin, 2009).

The embedded single case study process using data triangulation and convergence simply follows a straightforward path. For the proposed study, the process is initiated and led by the initial quantitative data that is available. New evidence will be primarily qualitative. The overall design process flow is (a) evidence collection, (b) analysis, and (c) final interpretation (Creswell & Plano Clark, 2008).

Data Gathering

The primary data sample will be drawn from a single E 911 call center. Quantitative and qualitative data will be gathered for this design from a variety of existing and accessible

employee records for the King County Communications Center. There are approximately 90 call receivers and dispatchers, 19 supervisors, and 2 general managers. All of the players in this unit have participated in some way in the actual consultant led intervention. Internal surveys based on the 13 Gallup statements were completed by all unit employees and were anonymous. There were no qualitative responses required related to the initial survey. Existing qualitative data is available in the form of meeting notes and in depth discussion notes taken in a series of organized events with shift based employee groups in the unit throughout 2009 and 2010. This evidence will include notes, observations, and reports provided by the consultant administering the treatment, the Loyalty Solutions Group of Seattle, Washington.

The time boundary for the data used in the study will cover two ranges. Historical data, such as employee records, will not go back further than five years but not less than three years. The specific and final date range will be subject to the time availability of human resources department personnel in the King County Sheriff's Office to pull the raw data.

The observation period related to the treatment will be from the consultant's project commencement in June of 2009 through the data available or where surveys have been commenced through August of 2010. The initial input and start up notes and observations kept by the consultant and possibly other managers in the organization may be important to provide initial perceptions around what problems were initially perceived as targets of the engagement and what expectations around outcomes and solutions were initially established.

Six specific sources of evidence are associated with case study designs

- Documents, which may include letters, agendas, progress reports, meeting notes and minutes
- Archival records, which include service records, hiring, attrition, and training records, budgets, and generally publicly available records
- Interviews, which are typically open ended, but may include focused, structured, and surveys
- Direct observation, which can be formal or casual
- Participant observation, which entails assuming a role in the situation or environment under study and documenting an inside view of the events
- Physical artifacts (Yin, 2009).

The focus of the intervention has been on receivers, dispatchers, and supervisors. All notes and meeting records will be available for coding and qualitative analysis. Specifics of the data includes

- historical hiring, turnover, and attrition data for the past 3-5 years will be obtained from the King County Sheriff's Office HR department through the period of June 30, 2010
- exit interviews for the past 3-5 years will be obtained from the King County Sheriff's Office HR department
- treatment notes specific to the 2009 and 2010 intervention will be obtained from the consultant firm, the Loyalty Solutions Group, and members of all participant groups where notes were taken or kept

- an employee environmental survey executed, including line workers and supervisors and other internal customers of the unit involved, will be obtained from the Loyalty Solutions Group
- a planned post treatment employee survey within the treatment unit only may be executed in June or early July 2010 and will be available from the Loyalty Solutions Group
- a 2009 public survey specific to E 911 call center service delivery and perceptions will be obtained from the King County Sheriff's Office

Additional data collection sources will include

- semi structured interviews with employees designed to follow up on knowledge and observations from existing qualitative and quantitative data
- semi-structured follow up interviews with supervisors, management, and the treatment administrator will be conducted for the study
- an internal customer survey specific to patrol deputy interaction with call receivers and dispatchers is proposed and may be executed by the consultant in June 2010
- a follow up public survey (pending) on service delivery may be conducted in June, 2010
- a comparative survey of 2-3 regional call centers using the identical treatment survey instrument (pending) may be conducted by the consultant in June or July of 2010
- Organizing the data will first require separation into quantitative and qualitative categories.

Quantitative data for analysis will be organized as

- historical employee records
- pre and post public and internal survey results
- comparative call center survey results
- Gallup meta analysis data
- relevant self leadership data

The assembled quantitative data can be organized and reviewed in a variety descriptive ways. The study will seek to determine a baseline understanding of average employee attrition rates, absenteeism, and sick leave. There will be a focus on length of employment and turnover as a historical matter. This will provide an opportunity to examine and evaluate the same evidence in the context of the consultant's intervention. The Gallup statements used in the intervention's assessment phase are administered as a survey with a five point agreeableness scale ranging from 1 representing strongly disagree to 5 meaning strongly agree. If control or comparative surveys are possible through other E 911 call centers using the same instrument, additional descriptive analysis will be possible.

Factor analysis may be employed to compare and contrast for possible relationships between self leadership factors established in the literature and the specific employee responses emerging from the Gallup survey. Correlation analysis between specific and potentially related concepts in the theory and the treatment, such as may be related to turnover, may also be employed. This may contribute to specific areas of inquiry for semi structured interviews with participants. These descriptive efforts may at least yield some feedback for the direction of the

study in the qualitative data gathering and analysis or it may indicate areas of further and future study between the two approaches.

Qualitative data for analysis will be organized and coded as

- Unit employee meeting and discussion notes
- Consultant and management pre, during, and post intervention notes
- Semi structured interview data obtained from sub unit interviews

In this project design, the quantitative data and analysis represents the primary embedded data that will be explored and further enhanced by qualitative data collection and analysis. It is worth noting that the various sub units are also considered to be embedded in the broader context of the case and its units of analysis. It is also important to distinguish between units of data collection and the actual units of analysis (Yin, 2009, p.88).

This a point of clarification for correctly gathering, differentiating, and coding ranges of data. Differentiation can clarify, delineate, and reflect individual issues such as behaviors and perception measures. This is in contrast to organizational data such as turnover rates and overall unit performance perceptions held by the public or other internal customers of the call center. Attention to these types of data integration protocol issues contribute significantly to the reliability of an embedded single case study design (Yin, 2009).

Semi structured interviews will be designed and developed after a critical review of both survey results and coding and analysis of existing notes related to the intervention. The interviews will provide a critical opportunity to probe and explore a variety of *how* and *why*

questions and to gather opinions related to perceptions of (a) the unit culture, (b) the intervention in a theoretical context, (c) autonomous work, and (d) any perceived outcomes.

Linking Data to Propositions and Findings

The data triangulation and convergence approach in an embedded case study design will increase construct validity of the case study overall (Yin, 2009). This is achieved by (a) using and applying multiple sources of data, (b) creating a proper data base of the evidence, and (c) maintaining a proper chain of evidence (Yin, 2009). Maintaining a proper chain of evidence requires that

- a link is established and indentified between the initial study questions and the study procedure, including the circumstances of evidence collection
- the data collection is executed to the established protocol for the design
- evidence is properly stored in a database for later checks and reviews
- there is proper citing of the data base and evidence collected is maintained throughout the final report (Yin, 2009).

Focusing on threats to validity is a means to stay on track within the design. When applying data triangulation and convergence tactics in a case study design, some of the more likely threats to be aware of includes

- introducing bias through data collection
- not following up on contradictory results
- inadequate data transformation approaches

- poor methods of converging data
- not addressing the same questions the same with like quantitative and qualitative approaches
- poorly choosing individuals for follow up and interviews
- poor design where validity and reliability are concerned
- choosing weak qualitative and quantitative results for follow up and analysis
- not designing considerations for validity into the overall protocol (Creswell & Plano Clark, 2008).

Given the awareness for threats and having a protocol for following a case study through, the final phase before writing the case study report is conducting the actual evidentiary analysis. The analytic strategy for the proposed study considers the integration of embedded single case study with data triangulation and convergence protocols. To better understand the integration, it is helpful to first examine the approaches from the perspective of case study and mixed method experts.

Data triangulation and convergence protocol advocates for a concurrent form of analysis (Creswell & Plano Clark, 2008). The general assumption is that the researcher will conduct a separate, initial data analysis for the quantitative and qualitative data bases. For the qualitative data this includes (a) coding, (b) theme development, and (c) identification of theme interrelationships. For the quantitative data, this process primarily entails descriptive analysis (Creswell & Plano Clark, 2008).

The critical step is to merge and converge the data sets so that the supportive data set from the embedded design can form a complete picture while allowing the supportive data to reinforce or refute the primary data set findings (Creswell & Plano Clark, 2008). In the proposed study, the qualitative data will provide this function.

Given these processes, the design then poses a critical analytic question that seeks to determine what additional information or knowledge is obtained from the qualitative data. Another view is that of a sequential process where the supporting data may best serve to inform or help to support the correlational understanding of the primary data set (Creswell & Plano Clark, 2008).

On the purely embedded case study side, Yin (2009) suggested five analytic techniques. These include:

- pattern matching, which seeks to find relationships between predicted and empirical patterns involving the dependent and independent variables of a study, and even rival explanations as patterns
- explanation building, a special type of pattern matching where the goal is to analyze the case data by building an explanation about the specific case under study
- Time series analysis, which seeks to is to explore the match between the observed trend and either (a) a specific theoretical trend specified before the investigation, or (b) some rival trend that was also specified prior to the investigation

- logic models, which are often specific to case study evaluations and are designed to match empirically observed events with theoretically predicted events
- cross case synthesis, which is expressly intended for use in multiple case studies (Yin, 2009).

The integration of processes also suggests a necessity for the careful, measured, and structured integration of data analysis techniques. The overall analysis picture at this point is a flow where the embedded structure is coupled with a convergence of the data. In this analysis model, the qualitative knowledge provides a critical supporting role that will also help to drive the exploratory process in the design.

Conclusion

Several key factors support the case study approach for the proposed study. Linking and integrating an embedded single case study design with data triangulation and convergence practices is a good design given the research objectives, general research questions, and the data and venue access for a study. From a theoretical perspective, there is a sound base of literature around both self leadership and the Gallup meta analysis supporting the survey instrument which is one of the targets of the proposed study. The available information to this stage suggests that there is appropriate evidence to drive and explore the theoretical propositions that will be developed through the study.

Given the proposed design approach, Yin (2009) cautions that there is a real potential to lose focus and for the entire study to become overly complex. There are also a variety of bias

risks due to the fact that there is a professional proximity between the researcher and various members of the unit under study as well as its management team. These issues must be kept in mind as the design evolves into a living investigation. Conversely, some historical knowledge of the subject matter and the operation generally also provide the researcher with some context for approaching the problems and questions.

Developing a manageable execution protocol, including data management and evaluation, will help to keep the project and this particular design on track. Accepting the acknowledged array of execution risks, one of the more compelling reasons to pursue this design is the level of access to a substantive body of existing quantitative and qualitative data. Additionally, there is a significant opportunity to purse new qualitative data in the form of field interviews via ready access to the unit members who participated in the intervention. It is also likely that the consultant administrating the intervention will have access to other 911 call centers in order to get several control surveys completed using the Gallup statements. Given the opportunity, there is a real potential for this project to provide meaningful insight into a host of relationships, behaviors, and attitudes related to autonomous job roles and self leadership theory.

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