

**AN INVESTIGATION OF BUSINESS TRANSFORMATION DISRUPTORS  
AT THE MILITARY STRATEGIC COMMAND LEVEL**

by

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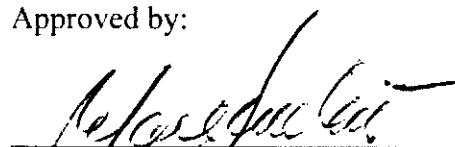
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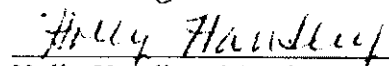
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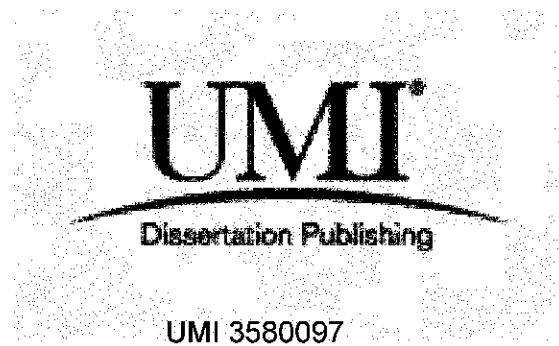
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## ABSTRACT

### AN INVESTIGATION OF BUSINESS TRANSFORMATION DISRUPTORS AT THE MILITARY STRATEGIC COMMAND LEVEL

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This dissertation contributes an empirical research on business transformation disruption in the military. Specifically, this exploratory research seeks a better understanding of disruption of business transformation and some of the factors that are likely to impact the transformation process at the military strategic command level. A lack of empirical studies existing in the literature, coupled with the continuous transformation challenges faced by military organizations, make it necessary to conduct this empirical study of business transformation disruption in the military.

This research was carried out utilizing a two-phase mixed-methods approach. The first phase included qualitative data gathering through a series of discussions and focus groups that provided an initial understanding of the phenomena and the basis needed to formulate the research conducted in the second phase. From this initial phase, three main research categories were established which focused on *Leadership Turbulence*, *Resistance to Business Transformation*, and *Lack of Agility in Military Culture*. A quantitative data collection and analysis was conducted in the second phase to test a set of seven hypotheses. A total of 1,095 data points were collected from senior level military and civil servants of a U.S. Army strategic command organization (Training and Doctrine Command) using a self-administered online survey.

The results of this investigation suggest that a) frequent turnover of a commander or commanding general, b) perceived inconsistencies of leadership guidance, and c) perceived disincentives for achieving organizational process efficiencies are associated to disrupting business transformation goals and initiatives. Conversely, this initial investigation failed to support that d) collaboration with colleagues, e) reluctance to adopting different business processes, f) perceived negative assessments of process improvement initiatives, and g) dissent tolerance are associated to the disruption of business transformation efforts at the military strategic command level. The findings of this study highlight the importance of considering a wide range of critical success factors in the transformation of military strategic commands. The results of this research can be used by engineering managers, practitioners, and academics as a complement to their research and teaching efforts with respect to organizational change and transformation.



Copyright, 2014, by Thomas Bock, All Rights Reserved.

This dissertation is dedicated to my *soulmate* and best friend – my beloved wife '*Seneca*'.

Thank you for all of your continued and unwavering support, inspiration, and encouragement throughout this entire journey.

You always have been and always will be my *beacon*.

I love you with all my heart!

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## CHAPTER 1

### INTRODUCTION

#### 1.1 Background

Over the last several decades, the U.S. Military has been confronted with more complicated and complex problems which are intensified within a geopolitical and global context. Events such as the bombing of the World Trade Center on September 11, 2001 have hastened the need for more innovative and time-sensitive military solutions. Consequently, senior leaders and executive-level planners have a critical need for new tools, strategies, and technologies to help enable them to ensure U.S. military force readiness and, more specifically, competitive advantage in warfare. These 21<sup>st</sup> century realities have given rise to the need for greater attention and focus on business transformation within the U.S. military. For instance, there are several domains that require continual re-adjustments so that our military forces are prepared to leverage what they learn from field experience(s), knowledge, and processes. Some of those areas include military culture, process improvement, knowledge management, and human factors/behavior. Therefore, command-wide business transformation efforts to increase both effectiveness and efficiency have become urgent. This urgency is made evident by the standing up of the Deputy Chief Management Office (DCMO) and Office of Business Transformation (OBT) (Department of Defense, 2013; Office of the Deputy Chief Management Officer, 2011). For the purposes of this study, the term *business transformation* refers to large-scale change processes directed from the command-level within a military environment (Department of Defense, 2013).

The publication *The Impact of Leadership on Change Readiness in the U.S. Military* illuminates research indicating that organizational change/transformation efforts have significantly high failure rates (i.e., approximately 70% to 80%). Therefore, such initiatives often miss their intended strategic goals (Lyons, Swindler, & Offner, 2009). This is important as it helps substantiate the need for this research in order to uncover what may be some of the likely contributing factors to disruption of the command's goals and objectives. While expanding the existing body of knowledge regarding the nexus between leadership and transformation management, much of the literature fails to speak to many other possible contributors or related factors, such as giving specific attention to leadership turnover or planned switch-out.<sup>1</sup>

## **1.2 Purpose Statement**

Given increased levels of complexity and uncertainty in the national defense environment and more specifically in the military domain, the purpose of this study was to investigate factors which disrupt business transformation processes in military organizations at the strategic command level. Based on the available literature for this specific domain (i.e., business transformation within strategic military commands), it is recommended that the existing body of knowledge requires an extension to better understand the change phenomena and factors that either a) have not received enough consideration or b) have not been considered at all.

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<sup>1</sup> Disclaimer: The views expressed or implied in this publication are those of the author and do not reflect the official policy or position of the Department of Defense, Department of the Army, or other agencies and departments of the U.S. Government.



### **1.3 Intent of Study**

The intent of this study is to provide insights and understanding of relationships between specific variables which are likely to disrupt business transformation processes. Project scoping required the research to be restricted to strategic commands (i.e., military organizations on the 3- or 4-star flag officer/general officer level) only.

### **1.4 Organization of the Study**

The remainder of this research is organized into four chapters. Chapter 2 provides a review of existing literature within the change management domain. Here, topic-related publications were analyzed and summarized in order to substantiate the need for expanding the body of knowledge in this chosen field. Chapter 3 focuses on providing the reader more information on the selected methodology (i.e., a mixed method using both qualitative and quantitative research elements). This chapter also highlights the underlying research assumptions and delincations. Chapter 4 includes the data collected (through means of a survey instrument) as well as an overview of the analytical methods applied in this research. Chapter 5 concentrates on the results and recommendations of the study. Finally, this research concludes with the bibliography section and appendices.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Literature of Emerging Themes and Associated Aspects

A literature review of the main categories under consideration – Leadership Turbulence (LT), Resistance to Business Transformation (RBT), and Lack of Agility in Military Culture (LAMC) – is presented below.<sup>2</sup> More specifically, the literature review and gap analysis were focused on exploring the extent to which seven associated aspects have an impact on business transformation disruption.

##### 2.1.1 *LT: Frequent turnover/change of a Commander/Commanding General*

There is a vast array of literature available which considers leadership, both in industry as well as military environments. Exhaustive studies have been conducted by a number of universities, research institutes, and other academic settings. The noted theorist and author, John P. Kotter, provides well-documented and widely respected insights into change management through his work, *Leading Change: Why Transformation Efforts Fail* (1995). Others, such as Ruvolo and Bullis – in their work *Essentials of Culture Change Lessons Learned the Hard Way* – point out leaders must make the case that culture change is necessary. They also highlight the importance of ensuring considerable attention is given to leadership development in terms of preparation for large-scale change processes (Ruvolo & Bullis, 2003). While their article

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<sup>2</sup> During the initial research phase (March/April 2012), several focus groups were conducted. Based on feedback from the participating senior military officers and civilians, a total of eighteen emerging themes were established. As part of scoping the research, three themes (i.e., categories) and their associated aspects were selected. Please see Appendix D for additional details in support of the selection process for the research categories: *Leadership Turbulence*, *Resistance to Business Transformation*, and *Lack of Agility in Military Culture*

investigates leadership, it does not consider whether the frequency of turnover (i.e., the change-out of a Commander or Commanding General on the strategic command level) may contribute to disruption toward military transformation goals.

In *Managing Cultural Change in Your Organization*, Kenneth Shere reveals that in order to effectively manage cultural change during transformation efforts, top leadership must show commitment to the change initiative and supporting improvement efforts, particularly through methods such as Lean Six Sigma (Shere, 2006). Further, the article notes such commitment must be sustained over time. Next, it points to several salient discoveries such as a) duration of change; b) focus on strategy; and c) communication across the entire organization – all of them are factors that must be considered. Finally, according to Shere, aligning an organization with the change strategy can often take up to two years, so it is vitally important for planners to include realistic time horizons in the overall strategy.

As indicated in Section 1.1, *The Impact of Leadership on Change Readiness in the U.S. Military* illuminates research indicating that organizational change/transformation efforts have significantly high failure rates (i.e., approximately 70% to 80%). Therefore, such initiatives often miss their intended strategic goals (Lyons, et al., 2009). This is important as it helps substantiate the need for this research in order to uncover what may be some of the likely contributing factors to disruption of the command's goals and objectives. While expanding the existing body of knowledge regarding the nexus between leadership and transformation management, much of the literature fails to speak

to many other possible contributors or related factors, such as giving specific attention to leadership turnover or planned switch-out. Hence, an important question shall be addressed in this research: *Is consistent pressure to routinely rotate Commanders (e.g., every 21 to 34 months) positively related to disruptions in transformation processes, especially from the staff members' perspectives?*<sup>3</sup>

Finally, authors Alarcon, et al. (2010) suggest in their collaborative work (*Understanding Predictors of Engagement within the Military*) that leadership can be viewed a source, either supporting or hindering one's engagement in the work environment. They also suggest transformational leaders – as opposed to transactional leaders – are most suited to being better facilitators of change initiatives (Alarcon, Lyons, & Tartaglia, 2010). For example, they studied the importance of a) role clarity, b) peer-group formation, c) organizational culture, d) leadership, and e) turnover intention. All of these sources may benefit the research study, particularly the work on peer-group formation and organizational culture for hypothesis category H3 (*Lack of Agility in Military Culture*). Also, the leadership assessment Alarcon, et al. used might be modified to help formulate survey questions pertaining to leadership turnover of a Commander or Commanding General.

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<sup>3</sup> In accordance with military protocol and standard procedures, Flag Officers/General Officers (FOGOs) must continuously demonstrate a wide variety of experience in different military operations (both joint and non-joint). Given the nature of a military career (e.g., on average 30 years for most generals), Commanding Generals/Commanders frequently rotate in order to qualify for a next higher level command.

### 2.1.2 LT: Guidance inconsistencies

A literature review was conducted to ascertain the extent scholarly research is available and/or being conducted to address the level of guidance inconsistencies which often exist within strategic military commands, particularly from the staff members' perspective. Authors such as Sutterfield, et al. have been studying conflict management based on a project-conflict framework (Sutterfield, Friday-Stroud, & Shivers-Blackwell, 2007). They note their case study – *How NOT to Manage a Project: Conflict Management Lessons Learned from a DOD Case Study* – fills a void in the existing body of knowledge by three specific dimensions of organizational conflict (i.e., interpersonal-based, task-based, and process-based conflicts). This work can be useful to extend a basis to conduct further research in the areas of risk management and large-scale transformation processes, especially since top-level managers often face difficulties that challenge project success due, in some part, to resource pressures placed upon them from command-level leaders within strategic commands. A case can be made which draws parallels between a) consistently shifting resource allocations and b) perceived guidance inconsistencies by staff members. Further, when there are task-based and process-based inconsistencies – making it difficult to achieve transformation goals – a staff member may sense certain directions from senior leaders as inconsistent when compared to previously provided directives. Moreover, inconsistencies are often based on some level of conflict. Essentially, the extent to which a worker/employee and organization manage conflict has a direct impact on project success and effectiveness (Tjosvold, 1998). Next, in his study, K.W. Thomas found managers dedicate an average of 20% of their time managing conflict (Thomas, 1992).

Another study (*Services Acquisition in the DoD: A Comparison of Management Practices in the Army, Navy, and Air Force*) conducted by Rendon, et al. presented the results of several empirical studies looking at management practices in the areas of a) acquisition management, b) use of project management approaches, c) acquisition leadership, and d) ownership requirements within various branches of the military (Rendon, Apte, & Apte, 2012). The study sought to analyze and compare research data collected through surveys within the Departments of the Army, Air Force, and Navy. This study suggests that, in certain situations, mismatches between increasing workloads and decreasing workforce – coupled with the unique challenges faced by Services' acquisition – have possibly created an environment not conducive to following best practices as well as a challenging level of internal inconsistencies. For example, from 2001 to 2009, the General Accounting Office (GAO) reviewed conditions within contracting services and issued 16 reports highlighting trends, challenges, and deficiencies. The Office of the Inspector General (OIG) issued some 142 reports pointing to deficiencies in Department of Defense (DoD) acquisition and contracting processes. Using the initial work of Snider and Rendon as an initial basis, Rendon, et al. also studied significant staff turn-over (i.e., less than three years in their job/position), project life-cycle challenges, as well as risks in general (Rendon, et al., 2012).

### *2.1.3 RBT: Collaboration with colleagues*

Scholars and researchers in the change management community consistently provide a great deal of investigation into a whole host of subject matters within this field of study. The literature is wide and varied, including primary and secondary research.

case studies, investigations, and new perspectives. Further, a review of older literature penned by such notables as Dr. Rosebeth Moss Kanter (Harvard professor and former editor of *Harvard Business Review*) as well as MIT's Dr. Edgar Schein was conducted. In 1983, Kanter produced pioneering work on change management in the book *The Change Masters: Innovations for Productivity in the American Corporation* (Kanter, 1983). She called for American corporations to devote attention, resources, and time to finding ways and means to become more innovative and adaptive to certain and impending change. Her scholarly pursuits and dedication to this area of study are still considered some of the most widely used and trusted in academia, research and industry, and in the military community. The work of Edgar Schein was also reviewed, particularly those publications focusing on organizational culture and organizational change (Schein, 1992). Dr. Schein is respected for his straight-forward and well-documented original research. He is viewed by many as one of the pioneers in the study of change management and culture where he advises industry leaders about the importance of culture in preparation for change initiatives.

Secondly, a review of more contemporary research efforts was conducted within both the military and industry context. For example, in *Embracing Change: Examination of a "Capabilities and Benevolence" Beliefs Model in a Sample of Military Cadets*, Donald J. Campbell hypothesizes high learning-oriented cadets are more likely to have positive attitudes toward change even when controlling for cadets' general dispositional resistance to change (Campbell, 2006). Essentially, in Campbell's research, *dispositional resistance to change* is defined as an opportunity for improvement and enhancement.

Using historical studies conducted by (Quinn, Kahn, & Mandl, 1994), Dr. Campbell acknowledges much of the work done in this area focused on macro-level organizational change or micro-level oriented resistance to change (Tichy, 1983). An important distinction is made that speaks to the paucity of research around a better understanding of dispositional characteristics associated with individuals' attitudes and reaction to change. He goes on further to say the existing body of knowledge only gives some insight into this matter from a "coping with change" perspective. Moreover, much of the research considers such variables as a) locus of control, b) generalized self-efficacy, and c) tolerance for ambiguity (Campbell, 2006). Therefore, looking at resistance to change from a primarily negative viewpoint does not permit a more nuanced study to be conducted where other dimensions might be considered. This study also considers tolerance for ambiguity, which may be useful for testing hypothesis H1<sub>c</sub> (i.e., "guidance inconsistencies" as part of leadership turbulence) discussed earlier.

In *Trust, Collaboration, e-Learning and Organizational Transformation*, Mason and Lefrere found that trust and collaboration tend to be enablers of transformation, particularly within information-based and knowledge-based economies (Mason & Lefrere, 2003). These findings can prove to be important since collaboration and interoperability are central facilitators of building effective sustainable knowledge-based and information-based economies. Trust can be used as an enabler to facilitate the establishment of e-learning environments and other processes such as consensus-building and knowledge-sharing. The search was further enhanced by including journal articles which address the role of top managers in organizational change processes. One such



article that *speaks* to this is *Organizational Change and Managerial Sensemaking: Working through Paradox*. Authors Lotte S. Luescher and Marianne W. Lewis make the point that managers are responsible for operationalizing change initiatives by interpreting and facilitating executive mandates (Luescher & Lewis, 2008). They are “lynchpins” of organizational change serving as intermediaries between executive level staff and front-line workers. Luescher and Lewis incorporated findings from previous related studies (Balogun & Johnson, 2004; Huy, 2002).

In *Transforming Government Through Collaborative Innovation*, the author addressed the trend toward establishing network-based models in place of the hierarchal models, typically found in governmental systems like the military (Nambisan, 2008). He addressed the role of collaborative innovation which harnesses vast resources of public, private, and non-profit sectors in order to improve the quality of innovation outcomes and solutions in general. It further discusses some of the contemporary goals of the government such as increasing the number of innovative-minded workers such that the government becomes an innovation seeker, catalyst, and champion.

Finally, the search revealed several other peer-reviewed articles such as *Enterprise Transformation Research Approach and Strategy* which was published in the *Information Knowledge Systems Management* journal. Professors Leon McGinnis and William Kessler discuss the four stages of an effective transformation process (McGinnis & Kessler, 2012). They posit that the stages include: 1) understanding the scope; 2) identifying the knowledge gaps toward risk; 3) filling those gaps with appropriate

research; and 4) deploying the knowledge. This work will prove to be extremely useful for the research project under consideration especially because there are (apparently) significant knowledge and research gaps within the strategic command-level domain.

#### *2.1.4 RBT: Adoption of different business processes*

A literature search to identify supporting research studies related to Resistance to Business Transformation (RBT) is outlined below. More specifically, the review focused on those aspects that deal with extent to which workers adopt different business processes. Several articles were located primarily investigating business transformation as a field of study in general. As it relates to this study, there are some aspects within the existing body of knowledge that may be helpful in framing the research proposal. Apparently, however, none speak directly to resistance to change and adoption of new business process at the strategic command level.

In the article *Journey To the North Face: A Guide To Business Transformation*, the authors start out by making the point that transformations are difficult to implement and “prone to failure” (Hoyte & Greenwood, 2007). They suggest that transforming businesses require at least three specific phases: 1) cultural transformation; 2) implementing a lean tool; and 3) extending the lean principles into the value stream outside the business. Unlike other research endeavors looking at transformation, this work also points out that those individuals most likely to lose from the major change will play a role in obstructing the process in some manner. Hoyte and Greenwood reference Niccolò Machiavelli, Italian historian and philosopher, who wrote in his book *The*

*Prince*: “Anyone who would invent a new system must expect the undying opposition of those who profit from the present method, and only lukewarm support from those who would benefit from the new” (Machiavelli, 1514). The article for the most part discusses why and how particularly Lean Six Sigma models can be used to improve positive outcomes during transformation initiatives. The researcher views this article as important given its focus on employees’ resistance to change.

Further investigation revealed several additional articles that *speak* to transformation in general. For example, in *Mosaic Transformation in Organizations*, the researcher P. Hoverstadt, examines the importance of change in attitudes, group cohesion, and management as key tenants of successful transformation initiatives (Hoverstadt, 2004). He studied large-scale organizational change within the context of complexity to try to gain a better understanding of why such initiatives have such high failure rates. Hoverstadt relied upon previous research conducted by other scholars (Beer, 1994; Checkland, 1981) on systems theory, complexity, and variety. This study refutes the often consistent claim that failure can be attributed to leadership. Instead, the author asserts while leadership may play a role in failures, there are other factors such as the nature and structure of the change program itself. An additional point made to support this study is that both managers and consultants often reported: *What is needed is a change in culture*. Thus, this change forms a basis for developing a rationale for a new approach to change management where individual attitudes are viewed as disruptors or facilitators to create or prevent change. Again, there appears to be a lack of

fundamental research which investigates factors such as “adoption of new processes” and workers’ perceptions of frequent turnover, etc.

Finally, in the work *Building Competitive Advantage Through People*, authors Bartlett and Ghoshal consider the evolutionary process of theory building as it relates to change management (Bartlett & Ghoshal, 2002). They studied change processes of more than 20 companies observing structures, impediments, and processes. They hypothesize that contemporary change management managers must modify their understanding of the processes to match current realities in an ever-changing social and economic environment. Also, they aptly point out very few executive leaders have been able to transform themselves, let alone the organizations they lead. Executives have been unable to make the leap from being such analytically driven strategists to more people-oriented coaches and framers. One of the central problems of preparing new managers as stated by the authors: “Hence, today’s managers are trying to implement third-generation strategies through second-generation organizations with first-generation management” (Bartlett & Ghoshal, 2002). Again, this article can be useful to explain the research context, but much still remains unanswered in the way of focusing on the specific factors under consideration for the research topic.

#### *2.1.5 RBT: Evaluation of required changes*

In an effort to get a global perspective and to see how scholars in an international setting view transformation and change, the search was further expanded. A literature review to uncover existing research that addresses the military culture’s lack of agility

was conducted. Two articles from the *Journal of Change Management* were selected for this assignment. The first research paper investigated the extent to which theories developed in stable environments are useful for analyzing change in turbulent environments. The *Triangular Model for Dealing with Organizational Change* is one such article. Using 243 Estonian companies, the author's ultimate purpose was to establish a model for analyzing change during a transition economy (Alas, 2007). While considerable research has been conducted in other countries (Alas & Vadi, 2006; K. L. Newman & Nollen, 1998; White & Linden, 2001), not much has been done with respect to transformation within a military context. As they discuss support processes during change, the authors point out – as changes take place – this process gives rise to redistribution of power and influence regarding decision-making. Often these sorts of dynamics can lead groups and individuals to disrupt or oppose outright the change process if they perceive a reduction in their decision-making power (Katz & Kahn, 1966). They suggest there are four central components to change: 1) organizational learning; 2) readiness for change; 3) employee attitudes; and 4) organizational culture. It is a well-researched chapter with a variety of supporting documentation. Yet, it still does not speak to how the model may be used to study military culture or within a military context.

In the paper *Managing Purposeful Organizational Misfit*, Voelpel, et al. briefly touch upon disruption. They encourage organizations to consistently innovate and create newer business models even if these new innovations cannibalize or disrupt existing business models (Voelpel, Leibold, & Tekie, 2006). The authors suggest this is

necessary in order to maintain a competitive edge in turbulent and competitive environments. They further go on to say that fitting to existing business models may be necessary, but is not likely to lead survival and sustainability for the long-term. In essence, Voelpel, et al. frame disruption in terms of innovation that causes unpredictability and volatility. The article references the well-respected work of such scholars as Harvard Business School professor and innovation expert Clay Christensen. In his book *The Innovator's Dilemma*, Dr. Christensen espouses the notion that innovation can be broadly categorized in two domains – *continuous/sustaining* or *discontinuous/disruptive* (Christensen, 1997).

#### *2.1.6 LAMC: Disincentives for increased organizational process efficiencies*

A literature search was conducted to help identify journal articles focusing on either challenges or conflicts in respect to organizational change. Topic-related research was found in the publication *How NOT to Manage a Project: Conflict Management Lessons Learned from a DOD Case Study* (which was also reviewed in support of hypothesis H1<sub>c</sub>). With respect to the research *Lack of Agility in Military Culture* (LAMC), this article was also useful in support of hypothesis H3<sub>a</sub> (i.e., “disincentives for increased organizational process efficiencies”). For example, this publication indicates managers who demonstrate effectiveness are often “punished” by having their funds re-allocated to under-performing parts of the business/organization (Sutterfield, et al., 2007). This article was found to be useful and relevant to this particular hypothesis.

Another way of looking at this issue is through the lenses of workforce agility and the use of information systems. The British scholars and authors Breu, et al. reference other published work by (Eisenhardt & Sull, 2001; Hannan & Freeman, 1984). More specifically, in the publication *Workforce Agility: The New Employee Strategy for the Knowledge Economy*, Breu, et al. indicate that organizations often face consistent challenges in ever-increasing complex and dynamic environments which are fraught with uncertainty and change (Breu, Hemingway, Strathern, & Bridger, 2002). Further, they make the case that what is not clearly understood is how environmental pressures for increased agility impact managers and non-production workers. In this case, workers are referred to as knowledge-workers (Drucker, 1959). Although this area of research may require additional investigation, this particular issue lies outside the scope of the study.

In the research article entitled *Organizational Effectiveness: Changing Concepts for Changing Environments*, author Joseph McCann explores the evolution of systems theory, complexity, and pace of change in organizations by tracing the concepts across a wide range of management fields (McCann, 2004). He goes on to further distill the research topic by focusing on organizational agility and resiliency, particularly as it relates to human resource management. It is a well-researched study using almost over 50 years of previous work including Michael Porter's noted publication *Competitive Strategy: Techniques for Analyzing Industries and Competitors* (Porter, 1980). He also references Emery & Trist's work *The Causal Texture of Organizational Environments* which was published in the *Human Relations* journal (Emery & Trist, 1965). As part of more contemporary research, McCann points to the work of scholars and experts such as

Rosabeth Moss Kantor and others (Kanter, 1983). Another interesting point is the use of new and emerging nomenclature to help describe new and innovative skills needed to effectively manage transformation/change in a sustainable manner. For instance, in what is now called “adaptive capacity,” the need for executive leaders to have a keen understanding of agility, resilience, and change is absolutely essential in modern complex organizations. Thus, managers will need to have awareness and appreciation of human behavior, potential enablers, facilitators, and disruptors.

In Lu and Ramamurthy’s work *Understanding the Link Between Information Technology Capability and Organizational Agility: An Empirical Examination*, the authors report on their findings and conceptualize that agility may be embedded across three dimensions: 1) IT infrastructure capability; 2) IT business spanning capability; and 3) IT proactive stance (Lu & Ramamurthy, 2011). The study also looked at whether or not information technology (IT) could enhance – or even impede – organizational agility. As an initial empirical study, their research found that IT capability dimensions together enhance agility. Further, they recommend organizations integrate into their planning increased competency levels and skills building in order to realize a more robust, stable, and efficient basis for agility.

#### 2.1.7 LAMC: Dissent tolerance

Author John D. Stanley offers an historical retrospective on dissent in organizations within varying contexts (e.g., cultural, religious, and governmental) in *Dissent in Organizations* (Stanley, 1981). He purports dissent is most often not tolerated or



encouraged. Further, Stanley indicates that lack of dissent can give rise to miscalculations as well as significant tactical and strategic errors at the managerial level. Moreover, Stanley points out how, in not allowing dissent, leaders in early 1900s Europe suffered. In a specific instance, such as Czarist Russia, the German General Staff suffered from – in other terms – “lack of alternatives.” He goes on to look at cross-cultural examples of various means by which some cultures actually attempt to allow for dissent. For example, the Roman Catholic Church, Japanese business firms, and the British Government all claim to have such pathways available. According to Stanley, in the case of the Catholic Church, they employed *advocatus diaboli* (i.e., devil’s advocate) which is a strenuous decision-making process which helps to avoid church leaders making unwise or ill-advised decisions and to help improve the validity of executive decision-making (Herbert & Estes, 1977). Alternatively, Japanese employ a system called *ringisei* – or “system of reverential inquiry about a supervisor’s intentions” – which allows for decisions to be initiated from within the bottom rungs of leadership. And, lastly, the British official sparring began in 1784 with Charles James Fox vs. William Pitt. They referred to this as loyal opposition which is to some degree still employed in the British House of Commons. The author includes a reference to a literature review which brings to bear notable scholars from past eras, such as Kurt Lewin who is known for his work on *Group Decisions and Social Change* (Lewin, 1947). Also, he references discoveries of social pressures and judgmental errors in weighing input (Etzioni, 1967). Finally, findings by Stanley indicate rigidity in planning and decision-making in low-dissent environments (i.e., where dissent is discouraged) has led to

failures – often of the highest level. This article is likely to be utilized as a source for the research.

*Breaking the Chain of Command* is a well-researched paper that attempts to make sense of how and why employees circumvent directors and/or dissent (Kassing, 2009). Here, Jeffrey W. Kassing studied dissent through the frame of superior-subordinate relationships and brings in the earlier works of other researchers such as (Graham, 1986; Milliken, Morrison, & Hewlin, 2003). These works reveal that as employees have the need to create awareness of concerns about policies and practices, they often like to use dissent as a means to bring attention. Milliken, et al. found an employee's relational standing with their superior informs their willingness to express dissent. Thus, when the relationship was more positive and supportive, employees and employers may be more willing to express/allow dissent, respectively.

Another important contribution to the body of knowledge is made by Rotmann, et al. in their work: *Learning under Fire: Progress and Dissent in the U.S. Military*. Their investigation of progress and dissent in the United States Military revealed several telling points (Rotmann, Tohn, & Wharton, 2009). For instance, while the military has provided constructs and communication infrastructures to facilitate learning and communication within the military environment, experience showed the military still only qualified in small part as a true learning organization. Also, the authors review early failures in the Afghan war (e.g., Tora Bora) to help illuminate low dissent tolerance in the U.S. military forces. For example, despite early reports and feedback from ground troops – and those

lower in the chain of command – former Defense Secretary Donald Rumsfeld and other command-level officers made decisions without the benefit of those reports causing early signs of significant weaknesses in their decision-making. According to Rotmann, et al., the need to incorporate the knowledge and dissent of ground troops proved very useful in developing a better plan at the operational level later on. This resulted in the eventual establishment of the ‘Counterinsurgency Academy’ for learning amongst junior officers in Iraq. Moreover, open discussion and dissent amongst junior officers is now being looked upon as mechanism for force change at the tactical level (Rotmann, et al., 2009).

## **2.2 Gap Analysis Table**

Table 1 summarizes the selected references used in the literature review (peer-reviewed academic journals as well as published books by subject matter experts). It lists the author(s) and associated publication year in the first column. The literature review entailed an analysis of both primary and secondary publications (indicated with a “P” or “S”, respectively). Cells containing a square symbol [■] indicate that the selected papers/publications provide some insights to the related topics across any of the three research categories (LT, RBT, and LAMC). Alternatively, cells marked with a circle [○] suggest the sources (i.e., selected papers/books) failed to fully address the research topic and, thereby, justify the research need for going forward in order to contribute towards closing this specific knowledge gap.

Table 1. Gap Analysis Table

Authors (Year)	Primary/ Secondary (P/S) Source	Leadership Turbulence (LT)	Resistance to Business Transformation (RBT)	Lack of Agility in Military Culture (LAMC)
Alarcon, Lyons, & Tartaglia (2010)	P	■ ○	○	○
Alas & Vadi (2006)	S	■ ○	■ ○	■ ○
Alas (2007)	P	■ ○	■ ○	○
Balogun & Johnson (2004)	S	■ ○	■ ○	○
Bartlett & Ghoshal (2002)	P	■ ○	■ ○	○
Beer (1994)	S	○	■ ○	○
Breu, Hemingway, Strathern, & Bridger (2002)	P	○	○	■ ○
Campbell (2006)	P	○	■ ○	○

Herbert & Estes (1977)	Hannan & Freeman (1984)	Graham (1986)	Etzioni (1967)	Emery & Trist (1965)	Eisenhardt & Sull (2001)	Drucker (1959)	Christensen (1997)	Checkland (1981)
S	S	S	S	S	S	S	S	S
○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	■○	■○
■○	■○	■○	■○	■○	■○	■○	○	○

Table 1. Continued.

Table 1. Continued.

Lu & Ramamurthy (2011)	Lewin (1947)	Kotter (1995)	Katz & Kahn (1966)	Kassing (2009)	Kanter (1983)	Huy (2002)	Hoyte & Greenwood (2007)	Hoverstadt (2004)
P	S	S	S	P	S	S	P	P
○	○	■○	○	○	○	○	■○	○
○	○	■○	■○	■○	○	■○	■○	■○
■○	■○	■○	○	■○	■○	○	■○	■○

Table 1. Continued.

Newman & Nollen (1998)	Nambisan (2008)	Milliken, Morrison, & Hewlin (2003)	McGinnis & Kessler (2012)	McCann (2004)	Mason & Lefrere (2003)	Machiavelli (1514)	Lyons, Swindler, & Offner (2009)	Luescher & Lewis (2008)
S	P	S	P	P	P	S	P	P
○	○	○	○	○	○	○	■○	■○
■○	■○	○	■○	■○	■○	■○	■○	■○
○	■○	■○	■○	■○	■○	○	■○	○





Table 1. Continued.

Voelpel, Leibold, & Tekie (2006)	Tjosvold (1998)	Tichy (1983)	Thomas (1992)	Sutterfield, Friday-Stroud, & Shivers-Blackwell (2007)
P	S	S	S	P
○	■ ○	○	■ ○	■ ○
■ ○	○	■ ○	○	■ ○
■ ○	○	○	○	■ ○

### 2.3 Literature and Gap Summary

Per Table 1, existing literature in support of the three main categories (i.e., LT, RBT, and LAMC) were identified. Table 2 further expands the literature review through summarizing a) research findings and b) gap of the *primary* literature sources.

**Table 2.** Literature Summary and Gap Summary (primary sources only)

Authors (Year)	Literature Summary	Gap Summary
Alarcon, Lyons, & Tartaglia (2010)	The authors suggest leadership can be viewed a source, either supporting or hindering one's engagement in the work environment. They also indicate transformational leaders are most suited to being better facilitators of change initiatives.	There is a paucity of research which examined the relationship between leadership engagement and frequency of turnover within a military setting. Future research should focus on studies to explore their longitudinal effects and associated organizational variables within military commands.
Alas (2007)	This work investigated the extent to which theories developed in stable environments are useful for analyzing change in turbulent environments.	The author's initial framework primarily studies countries (vs. organizations) that are in "transition." Alas indicates additional work is needed to evaluate relationships between variables such as age, size, or industry. Similar control factors (e.g., rank and experience) within the military domain may provide a fresh perspective as to how staff members evaluate required changes in support of business transformation processes.

Table 2. Continued.

Bartlett & Ghoshal (2002)	The authors considered the evolutionary process of theory building as it relates to change management. Further, they hypothesized contemporary change management managers must modify their understanding of the processes to match current realities in an ever-changing social and economic environment.	While this publication can be useful to explain the research context, some questions still remain unanswered in respect to adopting different business processes (as part of one of the main categories – <i>resistance to business transformation</i> ).
Breu, Hemingway, & Strathern, & Bridger (2002)	Research by Breu, et al. focused on organizations that deal with consistent challenges in ever-increasing complex and dynamic environments fraught with uncertainty and change.	The authors suggest that future research may need to include a costs and benefits analysis based on an organization's workforce agility.
Campbell (2006)	This work includes a hypothesis suggesting high learning-oriented cadets are more likely to have positive attitudes toward change even when controlling for cadets' general dispositional resistance to change.	This work may need to be expanded by investigating dispositional factors associated with proactive change orientation (PCO). As part of this research, it is envisioned to provide new insights on the relationship between the independent variable <i>collaboration with colleagues</i> and the dependent variable <i>disruption of business transformation processes</i> .
Hoverstadt (2004)	Hoverstadt examined the importance of change in attitudes, group cohesion, and management as key tenants to successful transformation initiatives. The study focused on large-scale organizational change within the context of complexity to try to gain a better understanding of why such initiatives have such high failure rates.	There is a lack of fundamental research that investigates factors such as <i>evaluation of required changes</i> and workers' perceptions of <i>frequent turnover</i> .

Table 2. Continued.

Hoyte & Greenwood (2007)	<p>The authors start by pointing out that transformations are difficult to implement and “prone to failure.” Research suggests that transforming businesses requires at least three specific phases:</p> <ol style="list-style-type: none"> <li>1) Cultural transformation</li> <li>2) Implementing a lean tool</li> <li>3) Extending the lean principles into the value stream outside the business</li> </ol>	<p>The authors highlight that – during the initial phases of any business transformation journey – <i>people skills</i> may be more critical than technical skills. This research on <i>business transformation disruptors</i> expands on Hoyte &amp; Greenwood’s narrative to focus on group dynamics and/or cohesion, human motivation as well as socio-cultural realities.</p>
Kassing (2009)	<p>Kassing studied dissent through the frame of superior-subordinate relationships and connected it to previous works from Graham (1986), and Milliken, Morrison, &amp; Hewlin (2003).</p>	<p>This study added to the work conducted by Milliken, Morrison, &amp; Hewlin. It must be noted though that a staggering 85% of the employees he studied remained silent during the research. An additional investigation as to why such a significant percentage of respondents did not provide feedback should be examined. Potentially, there is a relationship as to how <i>dissent</i> (or sharing of constructive feedback upwards in the chain of command) is being viewed in a military organization.</p>
Lu & Ramamurthy (2011)	<p>The authors report on their findings and conceptualize that agility may be embedded across three dimensions:</p> <ol style="list-style-type: none"> <li>1) IT infrastructure capability</li> <li>2) IT business spanning capability</li> <li>3) IT proactive stance</li> </ol>	<p>As pointed out by the authors, future research should further assess antecedents to capabilities in order to better understand capability development and/or organizational learning.</p>

Table 2. Continued.

Luescher & Lewis (2008)	This work suggests that managers are responsible for operationalizing change initiatives by interpreting and facilitating executive mandates. The authors went on to indicate that such are “lynchpins” of organizational change serving as intermediaries between executive level staff and front-line workers.	In their research on organizational change and sense-making, the authors contributed to the body of knowledge through bringing more clarity on the subject of organizational paradoxes. However, they acknowledged that their findings were only moderate and require further extension.
Lyons, Swindler, & Offner (2009)	This research illuminates that organizational change/transformation efforts have significantly high failure rates (i.e., approximately 70% to 80%). The authors point out that change initiatives often miss their intended strategic goals.	While their work expands the existing literature regarding the nexus between leadership and transformation management, it fails to speak to myriad other possible contributors or related factors. These may include areas that require giving specific attention to leadership turnover or planned switch-out.
Mason & Lefrere (2003)	The authors outline that trust and collaboration tend to be enablers of transformation, particularly within information-based and knowledge-based economies.	Mason and Lefrere’s work sheds more light on consensus-building, consultation, and collaboration (all as part of organizational transformation). However, they also suggest that much more research in this field is needed, including the quest for more precise work of terminology development.
McCann (2004)	McCann explores the evolution of systems theory, complexity, and pace of change in organizations by tracing the concepts across a wide range of management fields.	As part of future research, McCann poses the question “ <i>How do you create an organization that is both agile and resilient?</i> ” Further investigation(s) examining how both organizational culture and agility contribute to the success of business transformation initiatives may enhance the existing knowledge.

Table 2. Continued.

McGinnis & Kessler (2012)	<p>McGinnis and Kessler discuss the four stages of an effective transformation process. They are as follows:</p> <ol style="list-style-type: none"> <li>1) Understanding the scope</li> <li>2) Identifying the knowledge gaps toward risk</li> <li>3) Filling those gaps with appropriate research</li> <li>4) Deploying the knowledge</li> </ol>	<p>The authors' contributions prove to be extremely useful for the research project under consideration especially because it is believed that there are significant knowledge and research gaps within this study's scope, particularly at the strategic command level.</p>
Nambisan (2008)	<p>This research addressed the trend toward establishing network-based models vs. hierarchal models (typically found in governmental systems like the military). The author went on by highlighting that collaborative innovation plays a significant role in harnessing vast resources of public, private, and non-profit sectors in order to improve the quality of innovation outcomes and solutions in general.</p>	<p>It is recommended to add to this work by conducting research on collaboration capabilities, such as: a) cultivating a culture of openness; b) creating the right organizational structure; c) developing appropriate leadership and relationship skills; and d) adopting a portfolio of success metrics. While this research may not be able to fully address all of these recommended success factors, it is envisioned that new insights (i.e., within research categories LT, RBT, and LAMC) will emerge and fill a void in the existing literature.</p>
Rendon, Apte, & Apte (2012)	<p>The authors presented the results of several empirical studies looking at management practices in the areas such as:</p> <ol style="list-style-type: none"> <li>1) Acquisition management</li> <li>2) Use of project management approaches</li> <li>3) Acquisition leadership</li> <li>4) Ownership requirements within various branches of the military</li> </ol>	<p>Although this publication focuses primarily on DoD practices in the services acquisition community, management challenges such as mismatch between increasing workload and the continuously decreasing size of the workforce requires organizations to implement more effective business transformation strategies and/or processes. The authors, however, did not test any relationships between project management leadership and <i>guidance inconsistencies</i>.</p>

Table 2. Continued.

Rotmann, Tohn, & Wharton (2009)	The authors conducted an investigation of progress and dissent in the U.S. Military. They suggest that the military has provided constructs and communication infrastructures to facilitate learning and communication within the military environment. At the same time, their work suggests the military still does not qualify as a true learning organization.	Rotmann, et al. indicate that an “active and empowered junior cadre” and a “dissident senior cadre” are considered required <i>ingredients</i> in order to overcome <i>institutional inertia</i> . However, there is no specific evidence/data to support their claim. More research is needed to validate their premise.
Ruvolo & Bullis (2003)	Ruvolo and Bullis point out leaders must make the case that culture change is necessary. Additionally, the authors also highlight the importance of ensuring that considerable attention must be given to leadership development in terms of preparation for large-scale change processes.	While their article investigates leadership, it does not consider whether the <i>frequency of turnover</i> (i.e., the change-out of a Commander or Commanding General on the strategic command level) may contribute to disruption of business (military) transformation goals.
Shere (2006)	Shere’s research revealed that in order to effectively manage cultural change during transformation efforts, top leadership must show commitment to the change initiative and supporting improvement efforts, particularly through methods such as Lean Six Sigma.	The author highlights the necessity to listen to people and understand their concerns. Furthermore, Shere stresses the importance of talking to everyone in the organization when managing cultural changes. Given that dissent is often not valued in a military environment, the research on <i>business transformation disruptors</i> intends to further evaluate feedback from the staff-member workforce. In the end, it may enable increased understanding of how to implement and/or sustain business transformation initiatives more effectively.

Table 2. Continued.

Stanley (1981)	Offers a historical retrospective on dissent in organizations within varying contexts (e.g., cultural religious and governmental). Stanley purports that dissent is most often not tolerated or encouraged.	Stanley highlights that “decision-makers may not perceive their own bias.” The current research attempts to validate that <i>dissent tolerance</i> may have a negative relationship with respect to disruption of business transformation goals and, thereby, might contribute to the larger body of knowledge.
Sutterfield, Friday-Stroud, & Shivers-Blackwell (2007)	Sutterfield, et al. studied conflict management based on a project-conflict framework. They noted that their case study filled a void in the existing body of knowledge by three specific dimensions of organizational conflict: 1) Interpersonal-based conflicts 2) Task-based conflicts 3) Process-based conflicts	This work can be useful to extend a basis upon which to conduct further research in the areas of risk management and large-scale transformation processes.
Voelpel, Leibold, & Tekie (2006)	As part of maintaining a competitive edge in turbulent and competitive environments, the authors encourage organizations to consistently innovate and create newer business models even if these new innovations cannibalize or disrupt existing business models.	Voelpel, et al. suggest that further research is needed to investigate cultural premises of business organizations. This research on <i>business transformation disruptors</i> expands on the authors’ framework which focuses on innovation, value creation, and strategic fitness (all under the concept of change management and risk management).

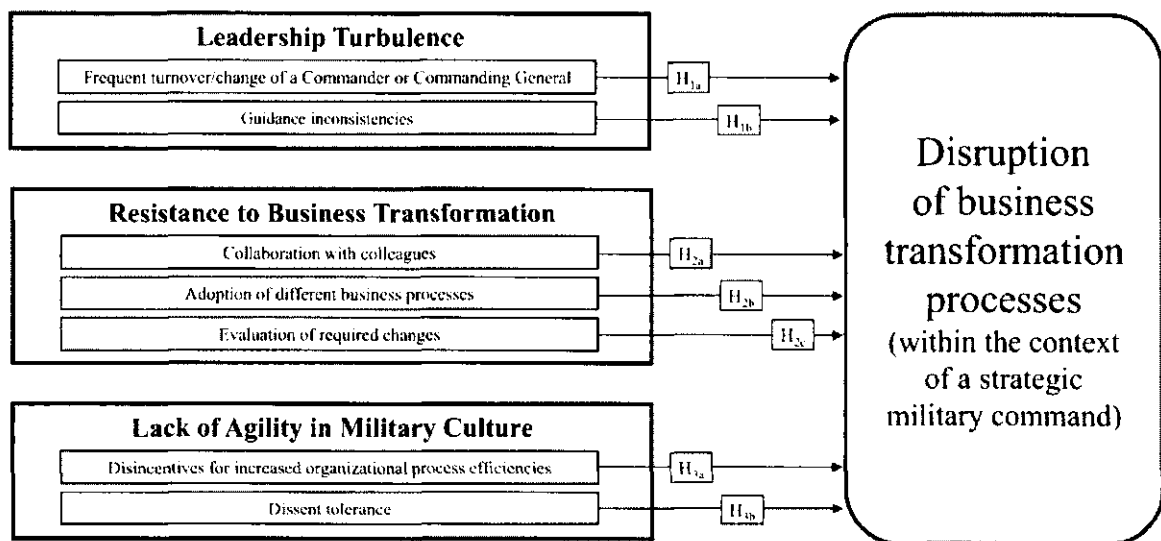


## 2.4 Conceptual Framework and Research Hypotheses

Initial feedback from members of the target population (first phase of the qualitative research convenience sample) generated three main categories (i.e., LT, RBT, and LAMC) and their related aspects.

Based on the available literature for this specific domain (i.e., business transformation within strategic military commands), it is recommended that the existing body of knowledge requires an extension so as to further consider multi-dimensional approaches to better understand the change phenomena and factors that either a) have not received enough consideration or b) have not been considered at all.

Figure 1 illustrates the conceptual framework between both independent and dependent variables.



**Figure 1.** Conceptual Framework

These three categories and their associated aspects were used as antecedents to the hypotheses (Table 3).

**Table 3.** Research Hypotheses

Hypotheses for Categories/Aspects	
LT	H1 <sub>a</sub> Frequent turnover/change of a Commander or Commanding General will be <u>positively</u> related to disrupting business transformation processes.
	H1 <sub>b</sub> Perceived inconsistencies of leadership guidance will be <u>positively</u> related to disrupting business transformation processes.
RBT	H2 <sub>a</sub> Collaboration with colleagues will be <u>negatively</u> related to disrupting business transformation processes.
	H2 <sub>b</sub> Reluctance to adopting different business processes will be <u>positively</u> related to disrupting business transformation processes.
	H2 <sub>c</sub> Perceived negative assessment of process improvement initiatives will be <u>positively</u> related to disrupting business transformation processes.
LAMC	H3 <sub>a</sub> Perceived disincentives for achieving increased organizational process efficiencies will be <u>positively</u> related to disrupting business transformation processes.
	H3 <sub>b</sub> Dissent tolerance will be <u>negatively</u> related to disrupting business transformation processes.

## 2.5 Advancing the Body of Knowledge

Sub-Sections 2.5.1 through 2.5.7 address how the research shall advance the chosen field's knowledge-base. Specifically, they include a discussion as to how each of the seven hypotheses-related aspects may advance the overall body of knowledge of change management and risk management.

### 2.5.1 H1<sub>a</sub>: Frequent turnover/change of a Commander or Commanding General

*Frequent turnover* amongst executive/command-level staff is a constant dilemma embedded in military culture within the U.S. military branches. On average, chief

executive leaders (i.e., Commanders and/or Commanding Generals) are switched out approximately every 21 to 34 months.<sup>4</sup> By studying this particular aspect, it will help to illuminate how military and civilian staff members experience this turbulence and to what degree it may play a role in transformation disruption (Eide & Allen, 2012). Secondly, by conducting a deeper investigation of this premise, engineering managers will begin to appreciate the importance of embracing multi-dimensional approaches that include consideration of human motivation and social interaction impact on project planning, processes, risk management, and knowledge management. It can specifically be useful for those who are responsible for planning large-scale transformation initiatives across multiple sectors within the military as ways to help predict, analyze, and assess risk of failure. For instance, if turnover is high and changes in directions are likely, *how likely* is long-term success when repeated deviations – no matter how slight – help to steer attention and focus away from primary goals and objectives? This is a vitally important question to risk managers, planners, project engineers, government-funding entities, the General Accounting Office (GAO), and other stakeholders such as the recently established Deputy Chief Management Office (DCMO).

### 2.5.2 *H1<sub>b</sub>: Guidance inconsistencies*

*Guidance inconsistencies* tend to be a significant factor pertaining to distraction or disruption of transformation goals. They are likely to be considered major concerns by those who are expected to follow orders/instructions from command-level staff. This is particularly important since humans are confronted with myriad compliance motivators

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<sup>4</sup> Appendix E provides historical data supporting this claim.

and/or disincentives (Frick, 2010). Learning more about how employees perceive, experience, and feel about guidance inconsistencies can prove very useful in knowledge management and risk assessment as well as change management overall.

Even with the newest models and research in change management, what is not known about guidance inconsistencies might be a deficiency in the existing body of knowledge because little is known about how this relates to transformation failures. It is envisioned the research results may offer ways and means to suggest improved techniques to establish military change architectures, timelines, and overall processes to include attention to what research indicates regarding key disruptors and how to help mediate and/or mitigate risk. Therefore, the study may prove to be useful to Commanders and Commanding Generals.

### 2.5.3 *H2<sub>a</sub>: Collaboration with colleagues*

*Collaboration with colleagues* can help expand the body of knowledge by gaining a very specific understanding of the strategic command environment which is responsible for directing business transformation efforts as instructed by the Deputy Chief Management Officer (under the direction of the Department of Defense) (Starks, 2008). The knowledge gained from this study can be shared across the military branches to help streamline their implementation of collaboration strategies. Furthermore, it may facilitate the establishment of common ways and approaches to prevent or mitigate disruption as a matter of change and risk management. Here, change architecture may include risk

management factors such as leadership turbulence and collaboration with colleagues as either a gauge, or for the development of a predictive failure scale.

#### 2.5.4 *H2<sub>b</sub>: Adoption of different business processes*

*Reluctance to adopting different business processes* is not currently studied in sufficient depth to help create greater situational awareness from the workers' perspectives (i.e., within the context of the research environment such as a military strategic command). More specifically, the void which requires filling is one of understanding whether staff members – both military and civilian – reject the concept of transformation in general or just certain aspects such as reluctance to specific business processes that may negatively impact their on-job status, influence, power, or position. This is a fine distinction that requires more understanding of those areas in change architecture which may require adjustments toward improved short, mid-term, and long-range outcomes over time. For example, this means the individuals, experts, and scholars who are involved in providing timely research on change management need to include this understanding in their discussions. Absent this understanding, proponents of change management (industry) and transformation (military) increase the likelihood of consistently high failure rates and diagnosing problems leading to ineffective application of vital and limited resources (Kotter, 1995). Also, the research may lead academia to think about institutionalizing human motivation and social interaction into engineering management course work as engineers tend to operate in a *small box*, often missing opportunities to help avoid project misfires due to lack of fundamental understanding in these domains. Furthermore, projects in the future requiring substantial capital outlay –

paid by American tax payers via the federal government – will continue to place more pressure on planners, designers, as well as implementers for, e.g., more rigorous cost-benefit analysis and/or leaner project timelines. Thereby, the research should be extended through gaining more understanding in change management and engineering project management. This could possibly be incorporated into Lean Six Sigma (LSS) schematics, which are often considered for government project initiatives.

#### 2.5.5 *H2<sub>c</sub>: Evaluation of required changes*

*Evaluation of required changes* or different business processes hypothesizes there will be a positive association between business disruption and perceived negative assessment of process improvement initiatives. Anything learned from how military and civilian staff members evaluate the usefulness of process improvements – within the context of business transformation – may lend itself to a need for more research around transformation disruption in general (Kotter, 1995). It may help to identify subtle nuances regarding the likelihood of acceptance, engagement, or denial of the need for transformation from a worker's perspective. Also, it may facilitate a discussion amongst military leaders and others about whether these nuances present themselves in the same manner or differently from one branch to the next, or system to system (C. S. Miller, 2009). For instance, finding common elements amongst and between branches will go a long way toward improved understanding between human factors and transformation processes. Further, when looking at the nature of complex systems, it is important to take into account myriad dynamic forces. For instance, the introduction of new technological capabilities such as *modeling & simulation* (applied to a command dashboard, for

example) may bring about anxiety and fear amongst workers (Goldberg, 1998). Gaining valuable insight from the workers' perspectives may add another level of understanding as it relates to potential negative evaluations of proposed process changes.

### 2.5.6 *H3<sub>a</sub>: Disincentives for increased organizational process efficiencies*

The premise of this hypothesis is to investigate whether there is a positive relationship between disincentives for *increased organizational efficiencies* and the likelihood that workers will tend to disrupt business transformation goals. Again, there is a paucity of research from the engineering community especially as it relates to workers (i.e., military and civilian staff members) being discouraged to become more efficient during a transformation process (T. H. Miller, 2010). Initial queries suggest a certain level of frustration amongst the target population. Staff members expressed reluctance to devote much human intellectual capital or effort toward becoming too efficient, as it often results in budget cuts, program shrinkage, and/or nullification of the need for their talents, skills, or contributions over the long-term (Kotter, 1995). In terms of the contemporary military culture, it still remains a largely rigid, over-sized complex system, unable to respond effectively or adapt to rapidly changing environmental demands. Thus, new and effective transformation management strategies and tools as well as *tactics, techniques, and procedures* (TTP) will have to be developed to meet demands from the DoD, American public, and global geo-political stakeholders. By studying the rigidity and complexity of military systems, perhaps the research community can get a closer look at the inherent structural challenges within military systems to see if they may be contributing to protracted transformation failures, especially amongst command-level

military environments. Much research on this subject has been conducted within industry but there is still much more to learn about organizational culture and its lack of agility (or ability) to respond to new emerging needs within the socio-behavior realm (Moss Kanter, Stein, & Jick, 1992). If engineers, risk managers, and change managers are going to be placed in a better position to achieve success, they will have to be equipped with how others down the chain of command sense, process, and understand their directives. This work will also play a significant role in respect to better understanding interoperability amongst and between military systems themselves and with those entities with whom they interact such as large domestic agencies and/or international bureaus.

Further, as the military attempts to strengthen or reconcile greater collaboration within legacy systems, the following questions will have to be considered: *Which cultural languages does each branch/system speak? What are their common features or compatibilities? What will the translation mechanisms look like?* Also, questions such as: *What components parts of the translation architecture will need to be discovered, modified, or put in place to facilitate large scale transformation and inter-operability initiatives?* may need to be addressed. These questions can only be answered when a multi-dimensional approach to understanding is instituted so multiple disciplines are under consideration, not just project management or engineering. A solution-focused approach and a healthy curiosity about innovation will be necessary.



### 2.5.7 H3<sub>b</sub>: Dissent tolerance

*Low levels of tolerance for dissent* – another cultural marker for the military – often helps to create an environment in which new ways of thinking or innovation are not valued. Even when directives come from the highest level of both U.S. government and military, internal cultural constructs make it often close to impossible to achieve the goals and objectives of transformation (Hanks, Axelband, Lindsay, Malik, & Steele, 2005). One such challenge is the extent to which dissent is discouraged and not valued amongst both rank and file as well as “top brass.” Therefore, it may be difficult to get a handle on what some of the essential underlying problems are when they are not able to be highlighted or brought forward. In such cases, researchers should seize the opportunity to push for additional understanding about ways in which intolerance for dissent can be an impediment to achieving goals and, therefore, call for more stringent research to understand it from the target populations’ perspective, not just from the command-level view. From the researcher’s standpoint, it is vitally important to consider staff members’ inputs and/or feedback to increase chances of accurate predictions and effective risk management within the context of change management.

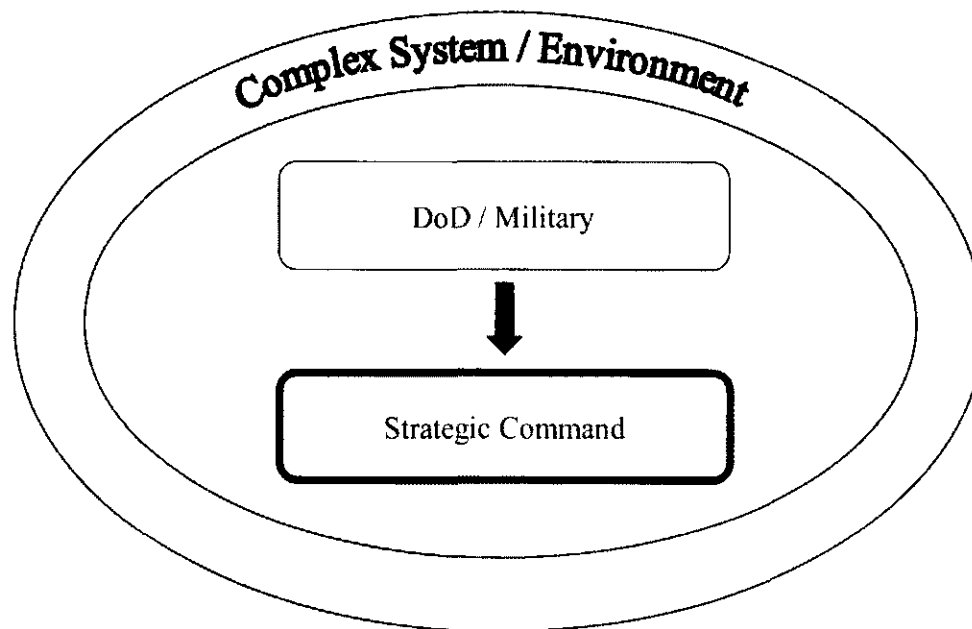
## CHAPTER 3

### METHODOLOGY

#### 3.1 Overview

In an effort to gain useful and meaningful insight into three specific domains of change management (which will later be described in terms of business transformation), initial information was gathered by first conducting a series of qualitative focus and discussion groups as well as key informant interviews. These efforts sought to accomplish the following objectives: 1) justification for primary research would become apparent; 2) the target population would be able to share their beliefs, experiences, and challenges with respect to daily work activities; 3) enough meaningful observations would be collected to justify moving forward along the research pathway; and 4) feedback from the qualitative portion would help frame and establish questions for later survey instrument development (i.e., quantitative portion) in the data-gathering process.

Recognizing the sheer breadth and depth of the engineering management field of study, the aim of this research is to further distill and narrow the scope so as to study the phenomena through the lenses of change management. Further, it is important to point out the study was framed from a workers/followers' perspective. That is, the research is focused on *entrenched* staff members (both military and civilian) who are charged with strategic planning, forecasting, and program implementation (Kotter, 1995). Focusing on this target population and investigating how they experienced various aspects of business transformation shaped this research framework. Figure 2 illustrates the context of the research domain.



**Figure 2.** Context of Research Domain

To help formulate the basis upon which the research topic was developed, it was decided to facilitate several focus and discussion groups in order to collect information from both mid-level and senior military officers (O4 to O6) and senior civil servants (GS-13 to GS-15). After the initial data assessment, the research domain was further constrained to the following three categories: 1) *Leadership Turbulence*; 2) *Resistance to Business Transformation*; and 3) *Lack of Agility in Military Culture*.

The three categories (abbreviated as LT, RBT, and LAMC) include a total of seven associated aspects. These aspects were considered *independent* variables. Alternatively, the *dependent* variable was determined as *Disruption*. Additionally, in support of the dependent variable, the classification variable *Business Transformation Processes* was defined. All operational definitions are outlined in Section 3.8.

### 3.2 Discussion of Philosophical Basis for the Research Methodology

In general, research is underpinned by the researcher's worldview (paradigm). This undergirds and helps to guide and substantiate both the methodology and purpose of a study. Further, the paradigm supports the philosophical assumptions. This research is attempting to understand the *phenomenological* nature of transformation failures and disruption within military strategic command systems and, thus, gaining insights into subjective patterns of meaning. Therefore, a *constructivist-pragmatic* approach was used as the fundamental basis and underpinning (see Table 4).

**Table 4.** Philosophical Worldviews (Constructivism and Pragmatism)

Philosophical Worldview	Description
Constructivism	<ul style="list-style-type: none"> <li>• Holds the assumption that individuals seek understanding of the world they live and work</li> <li>• The researcher intent is to make sense of/interpret the meanings others have about the world (Creswell, 2009; Pazos, 2010)</li> </ul>
Pragmatism	<ul style="list-style-type: none"> <li>• It arises out of actions, situations and consequences rather than antecedent conditions</li> <li>• It is not committed to any one system or philosophy – research can be drawn from both qualitative as well quantitative assumptions (Creswell, 2009; Pazos, 2010)</li> </ul>

Next, for the purposes of this study, a mixed methodology was selected. Here, Phase I of the research process was qualitative and Phase II of the research was conducted using quantitative approaches. The qualitative portion of the study has its roots in cultural anthropology where some of the early researchers used it to understand context, interactions, and behaviors (Maykut, Morehouse, & Manning, 1996). To help avoid the entrenchment of a researcher in exclusively one type, broadening

methodological repertoire may help to mitigate/protect against *trained incapacities* (Reiss, 1968). Moreover, qualitative research in the recent past was typically used in the social sciences such as psychology, sociology, and to some degree education. However, over the last three decades, it has been utilized to help set the stage for more in-depth quantitative research in order to gain an initial understanding of some of the characteristics and features about a target population within their specific context (Creswell, 2009). In the case of this particular study, the context was very specific – a *military strategic command*. More specifically, the research question under consideration addressed how military and DoD civilian personnel experienced transformation processes and the relationship between those processes and potential disruption factors. Quantitative research has been long-held as an extremely important way to conduct research, particularly in applied sciences, e.g., engineering, information technology, and/or risk management. However, this research endeavored to open up new and unique pathways of understanding a problem by introducing a multi-dimensional approach to improve the ability of practitioners, experts, and scholars to establish reasons for additional research. It was viewed as a primary research undertaking as there was a paucity of knowledge (i.e., based on the literature review) given that little initial research had been conducted in the specific context/environment under consideration. That is *not* to say a good amount of research had *not* been conducted on change and transformation management. On the contrary, the field is replete with excellent scholarly research. The problem, however, is within the engineering domain in general (to include risk management, change management, or information technology), engineering professionals often lack the skills and tools to understand the human and social side of the

environments they must work in, particularly as they relate to project management where one is required to achieve project goals through individuals, groups, and teams (Schein, 1996). Further, there is a serious lack of a multi-disciplined approach to research, problem-solving, and basic understanding across the military within a complex system. Thus, one of the main reasons why a mixed-method approach was chosen is to begin ascertaining those nuances typically missed when employing only one sort of research.

Again, it was asserted (by the researcher) that much more knowledge can be learned about the research problem by first starting out with an initial understanding using a more qualitative investigation, involving the participants through the use of focus groups and key informant interviews to help substantiate going forward with the research process. Then utilizing a carefully designed quantitative method facilitates a data capturing method that withstands statistical analyses and rigor required from the research community. Thus, the primary purpose of the qualitative portion was to simply help bring meaning and understanding of the target population and providing a basis to: a) fine-tuning research questions, b) generating meaningful hypotheses, and c) designing questions for the survey instrument.

Furthermore, having used a combination of both qualitative and quantitative research approaches had several benefits particularly when attempting to better understand a problem deeply embedded in human dynamics and socio-cultural realities, particularly when focusing on understanding the meaning of events and processes (Patton, 2002). As mentioned above, bringing in the qualitative approach in the first

phase was justified and supported by the known research theorist John W. Creswell (Creswell, 2009). Also, others such as Maykut, et al. describe it as “doing initial research before doing research” (Maykut, et al., 1996).

More specifically, with respect to selecting the mixed methodology, neither a qualitative nor quantitative design by itself is sufficiently suitable for this specific research topic. In essence, this topic is so complex – steeped in the nexus between both human dimensions and elements of change and project management – it warrants an investigation through multiple lenses as it is a multi-dimensional problem. Furthermore, the lack of understanding from the workers/followers’ (i.e., military and civilian staff) perspective is barely understood in this context. While a fairly reasonable level of research was conducted of how change management and organizational development results in high project failure rates (i.e., mostly from the executive-leadership view), limited knowledge is readily available in terms of understanding potential related factors from the perspective of those interacting in the human and highly acculturated military environment. Additionally, there is such a strong inclination toward the almost exclusive use of quantitative approaches to research within applied sciences amidst ever-increasing high project failure rates (including large-scale transformation projects). Thus, basic research curiosity might justify finding and uncovering additional tools, ways, and means for understanding such phenomena that continue to perplex, taunt, and frustrate decision-makers, planners, executives, funders, and military communities.

A summary of the selected worldview, strategy, and data collection is provided in Table 5.

**Table 5.** Design Strategy

Worldview	Strategy	Data Collection
<ul style="list-style-type: none"> <li>• Constructivism</li> <li>• Pragmatism</li> </ul>	<ul style="list-style-type: none"> <li>• Mixed Method</li> </ul>	<ul style="list-style-type: none"> <li>• Phase 1:               <ul style="list-style-type: none"> <li>○ Qualitative</li> <li>○ Phenomenological study</li> <li>○ Sequential exploratory</li> </ul> </li> <li>• Phase 2:               <ul style="list-style-type: none"> <li>○ Quantitative</li> <li>○ Non-Experimental/Survey</li> </ul> </li> </ul>

### 3.3 Scholarly Criticisms Concerning the Research Methodology

In terms of scholarly criticism(s), considerable thought was given to this subject in order to be prepared to rigorously defend the use of both the selected methodology and overall research design. The foundation upon which to substantiate the research methodology was based on historical factors within the research community, both contemporary use and the fundamental purpose for conducting research in the first place. All researchers should be prepared for the rigors and questions from a greater research community. This is important to maintain standards of scholarly work. Thus, it is reasonable to expect questions from any number of persons or interests groups.

First, having a firm understanding and respect of the necessity for research curiosity and knowledge-generation are fundamental hallmarks in the research community. Henceforth, to support the chosen framework, the first *hurdle* that must be cleared was related to teleological questions: *What is the purpose of the research? What use will it*



have? *What will it contribute to the existing body of knowledge?* Hence, the questions outlined in Table 6 provide a sampling of some of the potential criticisms.

**Table 6. Potential Criticism(s)**

Potential Criticism(s)
1. Why use a mixed methods approach to research when it includes some degree of qualitative research, especially when conducting research in a mainly applied sciences environment, which often uses quantitative designs?
2. How was sampling bias addressed?
3. How was potential researcher's bias prevented?
4. How was validity addressed?
5. How was reliability of the questionnaire ensured?
6. How were time effects addressed?
7. How did the research topic add to, or strengthen, the existing body of knowledge? Why was the research necessary within engineering management and how is it related to other fields?
8. How can a domain partner in support of data collection be sustained?

### **3.4 Research Design Strategies and Safeguards Responding to Criticisms**

This section covers both *research design strategies* and *safeguards*. Sub-Section 3.4.1 addresses potential criticisms likely to be voiced for this research methodology. Sub-Section 3.4.2 outlines the associated responses (i.e., safeguards).

#### *3.4.1 Research Design Strategies*

The research design strategy took into account the necessity to ensure safeguards along the research process to help increase validity, reliability, and rigor. As presented in Appendix B, the research design strategy includes several phases where certain safeguards were included to address some of the potential weakness/limitations in the

overall methodology. This is not to be confused with methodology. The research design also speaks to paradigms being used as well.

### 3.4.2 *Safeguards*

The following information provides safeguards in response to criticism(s) outlined in Section 3.3, Table 6.

#### 3.4.2.1 *Why use a mixed methods approach to research when it includes some degree of qualitative research, especially when conducting research in a mainly applied sciences environment, which often uses quantitative designs?*

First, it was stated upfront the selection of a mixed methodology was made to help discover the problems that exist within the phenomena (i.e., high failure rates during large-scale transformation initiatives within strategic command-level military environments) (Leedy & Ormrod, 2010). Second, this research employed a variety of approaches as a means to help uncover solutions and develop new models to generate theories. From personal/professional experience(s) within the fields of systems engineering, systems analysis, and project management within the Department of Defense and industry, current approaches that are widely used may not be sufficient to fully address the increasing complexity of problems decision-makers are facing at the organizational, societal, and human levels. Therefore, a more multi-dimensional approach was needed to take into account multiple levels of problems in both industry and military environments. Again, solely focusing on only one approach – such as quantitative – may not help to uncover vitally important nuances that are not evident on

the *surface* level. Also, to quote Carolyn B. Seaman, the following argument can be made in support of using a mixed method: “While empirical studies in software engineering are beginning to gain recognition in the research community, this [sub-area] is also entering a new level of maturity by beginning to address the human aspects of software development. This focus has added a new layer of complexity to an already challenging area of research. Along with emerging research questions, new research methods are needed to study nontechnical aspects of software engineering. In many other disciplines, qualitative research methods have been developed and are commonly used to handle the complexity of issues involving human behavior” (Seaman, 1999).

#### *3.4.2.2 How was sampling bias addressed?*

A total of four focus groups (including discussion groups and key informant interviews) were conducted. During this activity (also see Appendix B, Phase I-1b), statistical representativeness was not necessarily the main objective when understanding social processes. For each focus group, a representative group of participants was identified. Their feedback was collected and then analyzed to learn more about the data. This activity was followed by a report of theoretical explanations (before deciding what additional data needed to be collected and from what group).

Further, this activity was conducted in a manner consistent with sequential exploratory data collection strategy. The procedures for the data analysis were clearly presented and documented as part of the initial research proposal process.

#### 3.4.2.3 *How was potential researcher's bias prevented?*

First, a researcher should provide operating assumptions (see Section 3.6) as part of the methodology. More specifically, it is suggested to create conditions where methodology and data can stand independently so other trained researchers could analyze the same data in the same manner and come – as close as possible – to similar conclusions as the originating researcher. For instance, well-documented transcripts and audio tapes can be made available to an independent observer. It was also intended to gain feedback and opinions from colleagues as a means to address this potential criticism. Next, actively working to obtain respondent validation was another commonly used tactic to help overcome this potential hurdle. Some researchers employ the use of independent assessment panels. As part of this research activity it was decided to enlist the assistance of Ph.D.-level scholars, experts, and graduate students to help screen, field test, and pilot survey instruments and other required tools. Also, modern statistical analyses tools such as *Statistical Package for the Social Sciences* (SPSS) were utilized. Moreover, as mentioned above, it was critical to address safeguarding measures so feedback from participants were properly recorded and reported by way of narratives and transcripts. Finally, focus groups were always conducted by well-trained, experienced moderators.

#### 3.4.2.4 *How was validity addressed?*

When applying a mixed methodology, limitations of integration could come up. Weakness-minimization helped to yield increased meta-inference (i.e., weakness from one approach was counterbalanced by the strength of another) was introduced and carefully monitored. This included scholars from both approaches in the research

process. As for the non-experimental design portion of the mixed methodology, this method did not allow for proof of causal relationships. However, focusing on the benefits from this approach clearly outlined the correlations and the first steps toward understanding causation. A summary of all applicable validity indices and their associated methods/tests is provided in Table 7.

**Table 7. Definitions of Validity Indices**<sup>5</sup>

Validity Index	Definition	Method/Test
Construct Validity	The extent to which indicators are associated with each other and represent a single concept. (Hattie, 1985)	<ul style="list-style-type: none"> <li>• Principal Component Factor Analysis (PCFA) of a construct (Schwab, 1980)</li> <li>• Confirmatory Factor Analysis (CFA) of a construct's measurement model or that of a set of constructs (Joereskog &amp; Soerbom, 1989; Long, 1983)</li> </ul>
Content Validity	The degree to which the measurement instrument covers the domain of the concept. (Carmines & Zeller, 1979; Kerlinger, 1986)	<ul style="list-style-type: none"> <li>• Prior literature review on the domain and use of experts</li> </ul>
External Validity	The degree to which the research findings [seem] to prove or disprove the research questions.	<ul style="list-style-type: none"> <li>• Share results with SMEs</li> <li>• Share results with subjects/organizations</li> <li>• Review literature</li> </ul>
Face Validity	The extent to which the measurement instrument (after it has been developed) 'looks like' it measures what it is intended to measure. (Nunnally & Bernstein, 1978)	<ul style="list-style-type: none"> <li>• Share results with subject matter experts</li> <li>• Share results with subjects/organizations</li> </ul>

<sup>5</sup> Adapted from "Research in Engineering Management" (Landaeta, 2008) and "An Empirical Comparison of Statistical Construct Validation Approaches" (Ahire & Devaraj, 2001).

Table 7. Continued.

Internal Validity	The validity of the statements regarding the effect of the independent variable(s) on the dependent variable(s). (Pedhazur & Pedhazur-Schmekin, 1991)	<ul style="list-style-type: none"> <li>• Collect data from different populations</li> <li>• Collect data from different subjects within each organization (triangulation)</li> </ul>
Nomological Validity	The extent to which constructs of the framework relate to each other in a manner consistent with theory and/or prior research. (Peter, 1981)	<ul style="list-style-type: none"> <li>• Assessment of relationships through correlation, regression, or other multivariate analysis procedures</li> </ul>
Research Model Validity	The degree to which the research model and the research method [seem] to be able to achieve the research objectives.	<ul style="list-style-type: none"> <li>• Share results with experts or research advisory committee to assess the alignment of the research model and research method with the research objectives</li> </ul>
Research Topic Validity	The extent to which the investigation's objectives address current literature gaps and practitioners' concerns/challenges.	<ul style="list-style-type: none"> <li>• Gap analysis table</li> <li>• Other authors support the research objectives (i.e., recommended as future research or defined as challenges or problems)</li> </ul>

#### 3.4.2.5 How was reliability of the questionnaire ensured?

It was intended to only use the feedback from the qualitative portion (e.g., focus groups) to help inform the development of the second phase (i.e., quantitative) of the research process. According to Ahire and Devaraj, "the traditional procedure [i.e., the creation of a research framework] consists of identifying instrument items relevant to the framework, with no *a priori* (at the stage the survey is administered) specification of items that belong to constructs, collecting sample data on these items, and using exploratory factor analysis (EFA) on the entire measurement instrument to extract factors or constructs according to item-factor loadings. Cronbach's scale reliability coefficient alpha is [then] used for assessing the internal consistency of a scale" (Ahire & Devaraj, 2001).

#### 3.4.2.6 *How were time effects addressed?*

With respect to time effects – and to safeguard against them – delimitations are addressed in Section 3.6 of this study. In general, as this investigation is not considered a longitudinal study, researchers are unable and unlikely to be able to control all factors related to the subject and/or the environment (e.g., changing behaviors due to time).

#### 3.4.2.7 *How did the research topic add to, or strengthen, the existing body of knowledge? Why was the research necessary within engineering management and how is it related to other fields?*

This study offers a fresh and new perspective for engineering projects across both industry and the military. Additionally, there is a call for *closer attention* and the use of “auxiliary theory development” in the fields of engineering management and information systems – i.e., research that focuses on theoretical and measurement within modeling and development (Kim, Shin, & Grover, 2010). By taking a further look at multi-dimensional processes, engineering professionals may be in a better position to have fuller meaning and understanding of complex problems. Finally, another way to substantiate this research framework is the argument it adds knowledge through, e.g., information technologists who may help in organizing and providing access to data. For instance, in order to utilize technology for facilitating/achieving business transformation processes, it is recommended technical subject matter experts (SMEs) must be teamed up with those who are better prepared to understand human motivation and social interaction.

#### *3.4.2.8 How can a domain partner in support of data collection be sustained?*

Any primary research endeavor may lack the benefit of existing data sets and, most likely, will have to rely upon to some degree the strength of relationships existing inside and outside of the research environment. This case is no different – consequently; this research utilized sustainable relationship-building techniques as well as existing military networks that have been developed – as part of multiple DoD support projects – over the course of the last eleven years. Also, facilitators who assisted in gaining access to the research target population were selected. Another way to improve the likelihood of sustaining partners was to engage members of issue-related advisory/committee members, conference, and symposia attendees. Having reached out to members of various colloquia proved useful for both gaining access to research and maintaining important relationships in the research community as well.

### **3.5 Research Scenarios for which Suggested Approach may be Inappropriate**

The primary purpose of this Ph.D.-level research was to contribute new data, information, and knowledge to the existing body of knowledge (here, within the context of, e.g., change management, risk management, and/or project management). As part of the initial research phase, a literature review was conducted to identify whether or not this research would indeed fill a void and, thereby, address an existing knowledge gap within the research community. At the same time, as the literature review was not considered a distinct phase – with set start and finish date – emerging literature was consistently reviewed and added (where appropriate).



Next, it had to be understood that different philosophical worldviews and research designs are supported and/or preferred by research practitioners. For this chosen research, the philosophy was supported by the position of the authors Newman, et al. who suggest “qualitative and quantitative approaches should not be viewed as polar opposites or dichotomies” (I. Newman & Benz, 1998). Using a mixed-method design, it is believed this research fills a knowledge gap through collecting and analyzing the data under research principles that are more in line with exclusively a quantitative design. More specifically, using this method addresses multi-dimensional aspects such as human motivation and social interactions within the engineering domains of, e.g., change management, risk management, and knowledge management.

Finally, one of the most critical elements of any research is the ability to obtain useable and research-related data. Depending on the research under study, data may already exist and, therefore, it is often a matter of merely accessing such data via electronic or manual repositories. On the other hand, for obtaining new data, a clear pathway for collecting such must be established before pursuing the research. In essence, any proposed research design – no matter how strong – cannot be successfully completed unless there is supporting evidence that facilitates testing the hypotheses. In the case of this research study, new data (via a survey instrument) was collected from a sample population within the Department of Defense (at the strategic command-level). A sufficiently large sample size was attained during the designated phase. More specifically, TRADOC’s G-1/4 office generated a list which includes nearly 6,000 military and civilian staff members (see Sub-Section 3.6.4 for additional details).

### 3.6 Research Delimitations and Assumptions

This section covers both *delimitations* and *assumptions*. According to university professor and author Carol M. Roberts, delimitations are defined as “what will be included and what will be left out,” while assumptions are those research elements that are usually taken for granted (Roberts, 2010).

#### 3.6.1 *Delimitation #1: Research Scope*

The full implementation/integration of most business transformation efforts (i.e., achieving the delivery of all/partial goals and objectives) can take several years – or it may be even part of a continuous business strategy. Given the time-constraint of this research endeavor, this study is limited to identifying a subset of factors which may disrupt any defined business transformation processes. To scope the effort, staff members’ *subject-related* experiences (encountered from ~2000 to 2013) were considered in this study.

#### 3.6.2 *Delimitation #2: Research Contributions*

In accordance with research delimitation #1, the purpose of this study is to identify potential *business transformation disruptors*. The intent of this research is to test the specified hypotheses (see Table 3) versus suggesting any possible *causal* relationships.

#### 3.6.3 *Delimitation #3: Sample Population*

The sample population was limited to *U.S. Army Training and Doctrine Command* (Fort Eustis, VA). As part of the larger command, Headquarters, U.S. Army TRADOC

oversees thirty-two Army schools and nine Centers of Excellence (CoEs). As indicated in Section 3.5, the survey instrument shall be released to approximately 6,000 mid- and senior-level military and civilian staff members.

#### 3.6.4 *Delimitation #4: Research Participants*

Research participants were limited to both mid-level and senior military officers (O4 to O6) as well as mid-level and senior civil servants (GS-13 to GS-15).

Depending on the level of organization (e.g., company, battalion, brigade, division, or corps), the perspective of *seniority* – and its associated responsibilities – fluctuates. Given the restriction to only include strategic-level commands, mid-level officers are those staff members who achieved the rank of *Major* (O4) or *Lieutenant Colonel* (O5). Alternatively, senior officers are those who obtained the rank of *Colonel* (O6).<sup>6</sup>

Mid- to senior-level civil servants fall within the GS-13 to GS-15 grades, respectively. Generally speaking, these are assigned for technical specialists, supervisors, branch heads, or senior executives. However, given the focus on higher headquarters or strategic-level commands, the organizations' associated GS-13 and GS-14-level civilians often function in action-officer level roles (versus holding senior-level positions).

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<sup>6</sup> Prior to the survey release, it was decided to also include staff members (i.e., O3-level) who have been selected for promotion to the rank of Major (O4). These staff members are identified as O3(P). For the most part, military staff members who fall in this category already serve in the next-higher function.

### 3.6.5 *Delimitation #5: Point-in-Time (vs. Longitudinal)*

A *test-retest* reliability analysis (i.e., having survey participants complete the survey at two different points in time to identify changes in opinion or knowledge) will *not* be performed. Instead, survey participants will complete the questionnaire only once. Therefore, the provided point-in-time – or *snapshot* – data (covering, e.g., perceptions and/or understanding of the state of business transformation initiatives) may not include sufficient information for a trend analysis.

### 3.6.6 *Assumption #1: Representative Sample Population*

The sample population of the selected strategic commands was representative of the total population (i.e., strategic military commands and/or higher headquarters within the Department of Defense).

### 3.6.7 *Assumption #2: Professional Opinions*

The received responses (through focus and discussion groups, key information interviews, or survey instrument) reflected professional opinions from all research participants.

### 3.6.8 *Assumption #3: Free and Honest Feedback*

The research participants answered all questions freely and honestly. To support this assumption, all participants of focus and discussion groups, key informant interviews, and the survey respondents were informed that a) any personally identifiable information (PII) would be kept confidential and b) any potential linkages between

specific individuals and their associated organizations are excluded in this final report. As part of the *Survey Welcome* page, all research participants were reminded that their feedback is completely voluntary and all data is to be reported only in the aggregate.

### 3.6.9 Assumption #4: Recollection of Program Support

The survey participants accurately remembered which business transformation initiatives they supported – directly or indirectly – at TRADOC.<sup>7</sup> This includes their perceptions of which business transformation initiatives (BTI) were modified, reprioritized, suspended, and/or discontinued (as part of their daily work contributions).

## 3.7 Data Collection Techniques

Generally, a researcher will take into account several factors when making decisions about which data collection technique to use. For instance, some of those factors may include a) level of appropriateness, b) time and costs, c) response rates, and d) data collection time-horizon (Lyberg & Kasprzyk, 1991). For the purposes of this research endeavor, a mixed methods approach was employed because of the benefits associated with it. The researcher opted to use this methodology, as it allows for an initial glimpse into the phenomenological nature of a particular process (i.e., business transformation) within a specific context. According to Andres, the mixed methods approach is well-suited to survey research. More specifically, the author considers it useful when attempting to gain a better understanding of nuances, behavior, and attitudes of the particular population under consideration (Andres, 2012). Although the mixed

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<sup>7</sup> In the context of this research, the term “support” means *contributing work* towards achieving any specified goals and objectives. Thus, while staff members may disagree with a plan, they still *support* it.

methodology was employed as the overall research strategy, it is important to note that the technique for data collection utilizes a survey. More specifically, this research endeavor employed an online survey to obtain data from members of a specific target population.

### 3.7.1 *Surveys (General)*

According to Fink, “Surveys information-collection methods are used to describe, compare, or explain individual and societal knowledge, feelings, values, preferences, and behavior” (Fink, 2009). Survey design and surveys as data collection tools have a long and rich history. Across many domains, they have been widely used to help inform or improve understanding about a particular subject or phenomena. Survey instruments are typically underwritten, supported, and/or employed by a wide array of entities such as governmental organizations, universities, corporations, and individuals. For instance, in the *corporate world*, surveys might be used to gain insight about consumer behavior or purchasing patterns. Alternatively, within the government sector, they are often employed by, e.g., the Department of Defense or U.S. Census Bureau to facilitate a greater understanding of a specific population.

In terms of the various types of survey research, there are two broad categories – large and small scale surveys. Large scale survey research is conducted by organizations that have substantial financial and staff resources available to them. Examples of such organizations include medical institutions and governmental agencies such as the Bureau of the Census. These entities often engage in longitudinal studies, opinion polls, and/or

multi-layered research projects which require vast amounts of data (Fowler, 2009). Alternatively, organizations conducting small scale research projects are often concerned with empirical studies within the educational field. As indicated by Punch, "There is now a greater realization that large sample sizes are not a necessary requirement for all research projects, and that it is not realistic to plan for large samples in many research situations, both because of resources required for large sample data collection, and because of issues of access and cooperation" (Punch, 2009).

### *3.7.2 Survey Techniques*

Surveys are research tools that involve asking questions in order to collect data from people (participants). There are two main methods of data collection in surveys: 1) structured techniques and 2) semi-structured techniques. For example, as part of the structured approach, data can be collected through a written questionnaire. More specifically, such a survey type is mostly comprised of a series of closed-ended questions (e.g., providing answer choices on Likert scales). Therefore, as most variables and responses are already pre-defined, the data analysis should be much more straightforward (versus a survey which uses primarily open-ended questions).

Alternatively, interview-style surveys are usually considered semi-structured. Under this design, the interviewer is provided with a series of questions, which he or she goes through with the respondent either via a telephone or face-to-face interview. There are also several advantages to this approach. First and foremost, the researcher can establish a rapport with the respondent which usually increases the likelihood of getting

more honest feedback/responses from the interviewee. Moreover, the interviewer is given the opportunity to clarify any questions with the respondent(s). For example, research scholar Joseph Janes states the following: “Most authors agree that the face-to-face interview method can get you the best, highest-quality data. You can ask more questions, and more specific questions” (Janes, 2001).

When a researcher decides to use the semi-structured approach, the interviewer is provided with a specific set of questions that allows for some level of flexibility to depart from the original set of questions if other relevant factors/issues arise over the course of conducting the survey. The interviewer is permitted the opportunity to probe more deeply and go beyond the set of pre-defined questions. Often, when researchers are trying to understand a phenomenon, or the subject matter has not been studied in detail, they may opt to employ a focus group or group discussion format as a way to allow for semi-structured approaches to survey research (Liamputtong, 2011). Under these conditions, the researcher may explore the dynamic of new and changing realities and/or situations that have not been studied at all, or not in sufficient depth.

### *3.7.3 Administering Surveys*

As mentioned earlier, surveys can come in the form of questionnaires or interviews. They are different in that questionnaires are typically considered to be self-administered. That is, they are completed by the respondent, whereas interviews are administered by the researcher or by a team of hired interviewers. Table 8 summarizes some of the key



benefits for self-administered as well as researcher-administered surveys (Doyle, 2005; Fricker & Schonlau, 2002).

**Table 8.** Benefits of Self-Administered vs. Researcher-Administered Surveys

Self-Administered (online)	Researcher-Administered (interview)
Allows for large survey distribution	Allows interviewer to clarify questions
Avoids interviewer bias	Ensures high completion rate
Facilitates easier development and analysis	Facilitates high response rate
Provides cost-effective means	Provides greater control of environment

#### 3.7.4 *Survey Approach for This Research*

With the advent of the *World Wide Web* (WWW or W3), and the ever-increasing use of it, online or sometimes called web-based surveys have been growing in popularity in the research community. Online surveys are now widely used by serious researchers who aim to reach larger audiences. The author David Solomon posits that it provides reduction in both time and costs (Solomon, 2001). Also, online surveys offer a more expedient way in which to obtain responses from members of the researcher's target population. Other benefits include a reduction in errors related to data entry (Medlin, Roy, & Chai, 1999). Given these advantages, the online survey was selected as the data collection tool for the research under discussion.

However, when using online surveys, there are also challenges that must be taken into account as part of the overall research and data gathering strategy. For instance, the researcher should be prepared to effectively handle the possibility of unforeseen computer *glitches* such as spam, *Trojan horse*, or viruses that may corrupt/interrupt the

delivery of the survey to the intended respondent. Furthermore, online surveys are less likely to yield high response rates comparable to that of paper-based surveys or interview questionnaires (Nulty, 2008). Moreover, there may be some challenges related to coverage bias, meaning that people who lack adequate access or usability of web-based technologies may not be able to participate in the survey even though they have been identified as being part of the target population (Duda & Nobile, 2010). For example, in a 2003 report of the *Marketing Intelligence & Planning* journal, the authors found that online versus mail survey respondents tend to be different in terms of demographics. Thus, they concluded that online data collection should not be viewed as a direct replacement for mail surveys in every instance (McDonald & Adam, 2003).

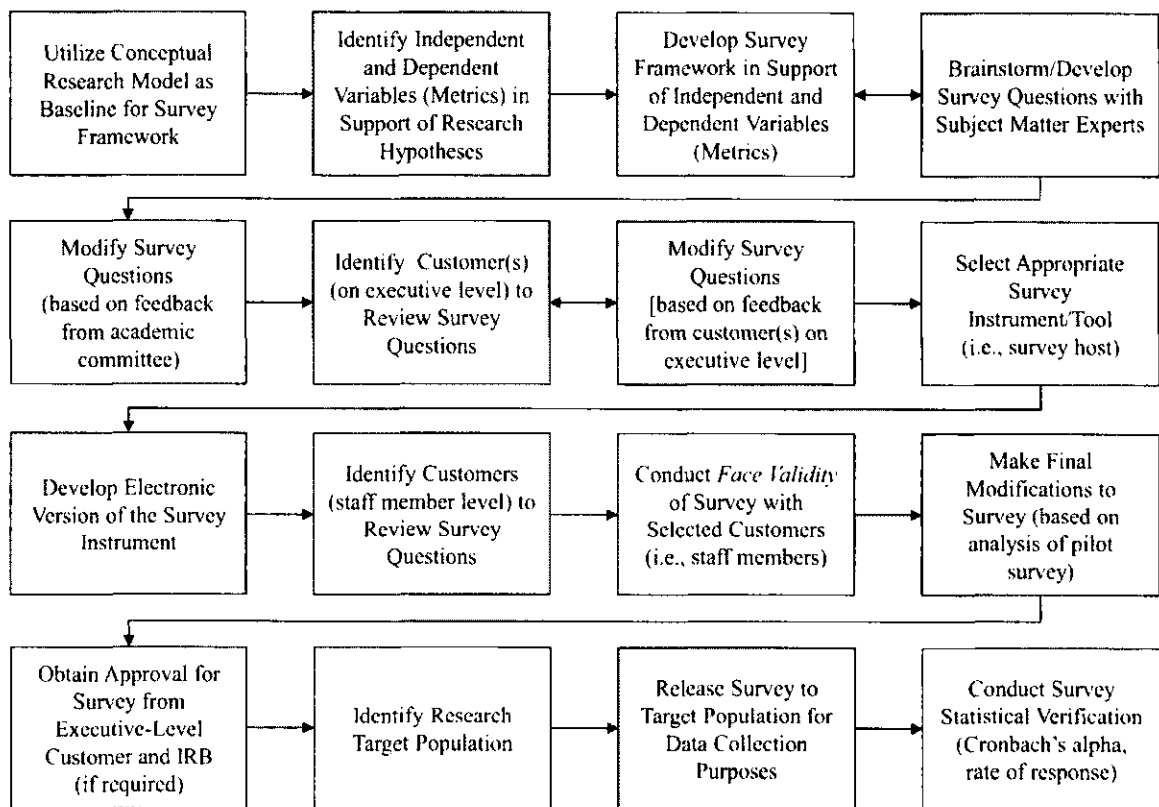
### 3.7.5 *Overcoming Challenges*

Overcoming the aforementioned challenges is achievable, especially when the researcher is prepared to address them as part of the overall pre-planning process. With respect to the possibility of low response rates, research practitioners have found that response rates can be increased by including both a) a cover letter and b) using follow-up reminders. According to Dillman, Tortora, and Bowker, sending out a pre-notification to alert the potential respondent to the upcoming survey also goes a long way toward increasing response rates (Dillman, Tortora, & Bowker, 1998). Other strategies that address overcoming low-response rates involve personalizing the survey or sending personal memos to the non-respondent(s) – assuming they can be identified (Kittleson, 1997). As it relates to the demographic question posed by McDonald and Adam, the online survey as part of this research was distributed to members of the target population

who have extremely high information technology usability skills sets and are *not* likely to be challenged with lack of accessibility to digital technology tools such as a personal computer and the internet/web.

### 3.7.6 *Summary of Survey Development and Approval*

Figure 3 illustrates the many survey development activities and feedback loops from research stakeholders that were necessary prior to launching the survey instrument. Since the researcher's target population is comprised of members of a large governmental organization, gaining permission from top-military officials was also required. Additionally, it was important to establish a planning team that would enable the researcher to gain access to members of the target population and their email addresses in order to release the survey as scheduled (see *Research Design Strategy*).



**Figure 3. Survey Development and Approval Process**

### 3.8 Operational Definitions for Independent and Dependent Variables

Given the research purpose to *explore factors which may lead to disruption of business transformation processes at the strategic command level*, it was established that only a limited amount of information has been published on the proposed factors such as *leadership turbulence, resistance to business transformation, and lack of agility in military culture*. As illustrated in Chapter 2 of this study, the independent variables in support of *leadership turbulence* focus on a) *frequent turnover/change of a Commander or Commanding General* and b) *guidance inconsistencies*. Based on the literature review, the authors Leeds, et al. suggest that – within the political environment – “frequent leadership turnover are accompanied by an inability to make credible long-term commitments” (Leeds, Mattes, & Vogel, 2008). Expanding on their findings, it was

determined that senior executive-level military officers (i.e., Commanders or Commanding Generals) rotate approximately every 21 to 34 months. Exploring this particular trend in more depth, it required an analysis as to how both military and civilian staff members experience and deal with the frequent changes of their top leadership. Therefore, this research aims to contribute to the body of knowledge by proposing a set of operational definitions for this particular category (see Table 9).

Dr. Shaul Oreg, one of the leading subject matters experts in the field of organizational change, has made significant contributions to the literature, particularly as it relates to *resistance to change* (RTC). For example, Oreg defines *reluctance to lose control* as one of the main contributing factors to RTC. More specifically, he posits that “[i]ndividuals may resist changes because they feel that control over their life situations is taken away from them with changes that are imposed on them rather than being self-initiated” (Oreg, 2003). Furthermore, according to W.J. McGuire, people’s evaluation of change is based on three components: “The affective component regards how one feels about the change (e.g., angry, anxious); the cognitive component involves what one thinks about the change (e.g., is it necessary?; will it be beneficial?); and the [behavioral] component involves actions or intention to act in response to the change (e.g., complaining about the change, trying to convince others that the change is bad)” (McGuire, 1985). For the study under consideration, the researcher offers to expand on these definitions (see Table 10). Thus, it is envisioned to discover new knowledge regarding subtle nuances as part of military or civilian staff members’ acceptance,

engagement, or potential rejection of business transformation efforts in a strategic military command.

In the publication *The More Things Change, Acquisition Reform Remains the Same*, Colonel Peter K. Eide, USAF, and Colonel Charles D. Allen, USA (Ret.), applied a) John P. Kotter's model of organizational change and b) Edgar H. Schein's approach to transforming organizational culture. In their conclusion, the authors emphasize that behavioral change is necessary in order to "embed transformation" (Eide & Allen, 2012). To expand upon to the existing research, the proposed study's third category concentrates on *lack of agility in military culture*. Again, given the very specific nature of this study and its context to focus on higher headquarters, the operational definitions for this category's two associated independent variables (i.e., *disincentives for increased organizational process efficiencies* as well as *dissent tolerance*) are further outlined in Table 11.

Finally, in order to measure the dependent variable – disruption of business transformation processes – another definition was needed. This not only includes defining the condition itself (i.e., disruption of a business transformation process) but also classifying the goals and objectives of any business transformation processes. These two definitions are shown in Table 12 and Table 13.

**Table 9.** Operational Definition “Leadership Turbulence”

Leadership Turbulence (LT)		
Definition:	Leadership turbulence is a consequence of a) frequent change of a Commander or Commanding General and b) guidance inconsistencies leading to adjustments, uncertainties, and/or rearrangements of strategic goals and objectives (Bock, 2013).	
Aspects & Definitions:	Frequent turnover/change of a Commander or Commanding General	Frequent turnover/change of a Commander or Commanding General (Flag Officer/General Officer, respectively) is defined as a change or rotation of command within any twenty-one to thirty-four month period (Bock, 2012).
	Guidance inconsistencies	The degree to which current guidance inputs diverge or differ from previous inputs (Bock, 2013).

**Table 10.** Operational Definition “Resistance to Business Transformation”

Resistance to Business Transformation (RBT)		
Definition:	Staff member’s reluctance to support business transformation goals is one of the causes of diminished transformation outcomes. At the level of the individual staff member (i.e., active duty or government civilian), RBT is defined as negative attitudes toward transformation where staff members: a) question its necessity and/or its benefit; b) are unwilling to adopt new/modified procedures, processes, practices and other organizational changes (Bock, 2012).	
Aspects & Definitions:	Collaboration with colleagues	The extent to which individuals are reluctant to collaborate with colleagues (Bock, 2012).
	Adoption of different business processes	The extent to which individuals are reluctant to adopt different business processes (Bock, 2012).
	Evaluation of required changes	The extent to which staff members negatively evaluate any changes (e.g., organizational arrangements, policy impact, budgetary reallocation, etc.) as a result of business transformation and any associated process improvement initiatives (Bock, 2012).

**Table 11.** Operational Definition “Lack of Agility in Military Culture”

Lack of Agility in Military Culture (LAMC)		
Definition:	Military culture is defined as a set of common values, beliefs, traditions, and basic philosophies facilitating both collective understanding as well as expectations within an organization that inform appropriate behavior amongst and between staff. Lack of agility in military culture is described as an environment that is marked by inflexibility and rigidity such that a) bringing forth of new ideas or innovation is not incentivized and b) overt expression of disagreement is not encouraged. (Carpenter, 2006).	
Aspects & Definitions:	Disincentives for increased organizational process efficiencies	The extent to which staff members anticipate adverse outcomes, to include loss of resources (e.g., funding and/or personnel) and threatened job security, as a result of increased organizational process efficiencies (Bock, 2012).
	Dissent tolerance	The extent to which staff members affected by business transformation initiatives believe their negative reactions to proposed changes were conveyed to and considered by their Commander or Commanding General through their chain of command or management hierarchies (Bock, 2012).

**Table 12.** Operational Definition “Business Transformation Processes”

Variable	Definition
Business Transformation Processes:	Identifiable processes that have been demonstrated to increase an organization’s efficiency and effectiveness in achieving its strategic goals and objectives (Bock, 2013).

**Table 13.** Operational Definition “Disruption of Business Transformation Processes”

Variable	Definition
Disruption of Business Transformation Processes:	An event and/or condition under which business transformation processes are modified, reprioritized, suspended, or discontinued (Bock, 2013).



### 3.9 Metrics for Independent and Dependent Variables

This section covers qualitative metrics that facilitated the analysis of potentially correlations that may exist between the independent variables (IV) and the dependent variable (DV). The metrics for both independent and dependent variables are outlined in Table 14 and Table 15, respectively.

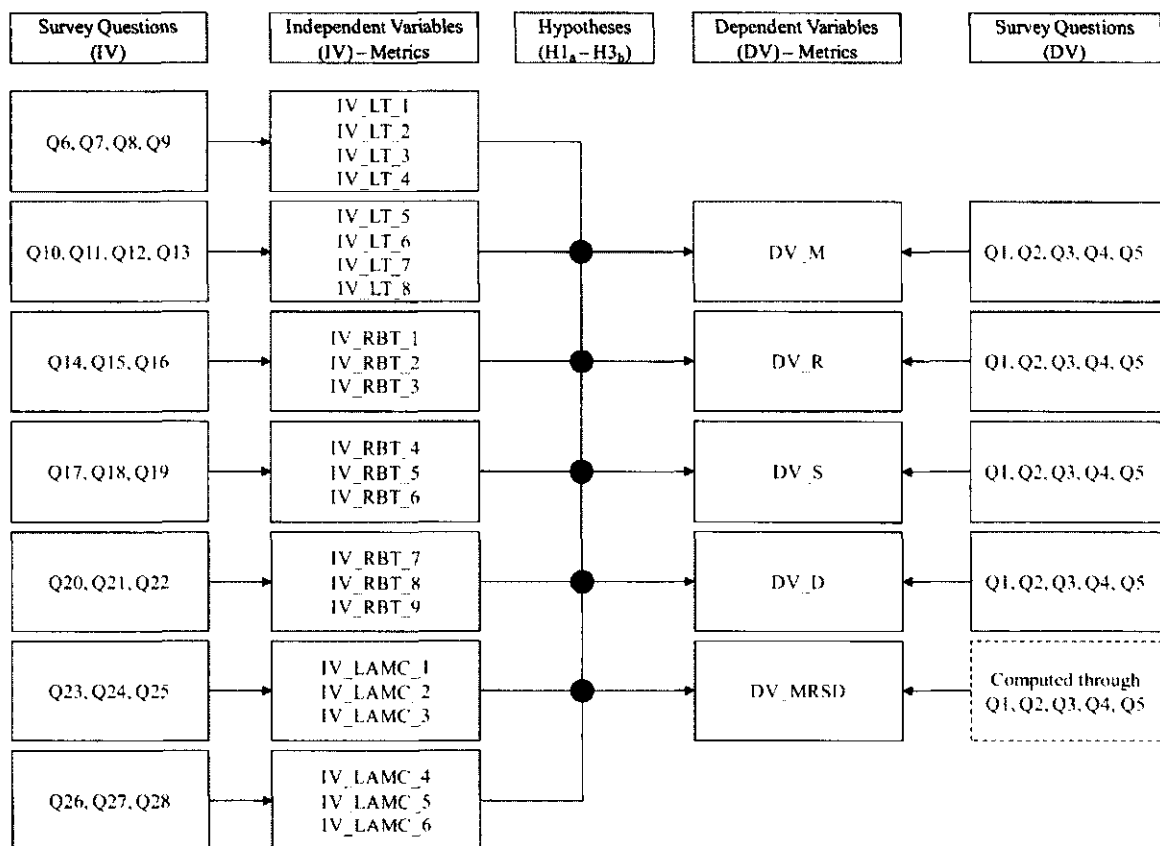
**Table 14.** Metrics for Independent Variables (H1<sub>a</sub> through H3<sub>b</sub>)

Aspect	Hypothesis ID	Metric ID	Metric
LT	H1 <sub>a</sub>	IV_LT_1	Number of Generals
		IV_LT_2	Commander's Intent
		IV_LT_3	Re-evaluation Unit Goals
		IV_LT_4	Re-evaluation Priorities
	H1 <sub>b</sub>	IV_LT_5	Changes in OE
		IV_LT_6	Changes in Regulations
		IV_LT_7	Changes in Policies
		IV_LT_8	Fluctuating Guidance
RBT	H2 <sub>a</sub>	IV_RBT_1	Knowledge/Info Sharing
		IV_RBT_2	Increase Collaboration
		IV_RBT_3	Embrace Collaboration
	H2 <sub>b</sub>	IV_RBT_4	Prefer Status Quo
		IV_RBT_5	Mission Performance
		IV_RBT_6	Adopt Mandated Change
	H2 <sub>c</sub>	IV_RBT_7	Changes in Work
		IV_RBT_8	Unwelcome Changes
		IV_RBT_9	Unnecessary Changes
LAMC	H3 <sub>a</sub>	IV_LAMC_1	Loss of Manpower
		IV_LAMC_2	Loss of Funding
		IV_LAMC_3	Unwillingness to Adopt
	H3 <sub>b</sub>	IV_LAMC_4	Encourage Feedback
		IV_LAMC_5	Convey Feedback
		IV_LAMC_6	Consider Feedback

**Table 15.** Metrics for Dependent Variable “Disruption”

Aspect	Perspective	Metric ID	Metric
Disruption of BTP	Military (O4 to O6)	DV_M	BTI – Modified Score
		DV_R	BTI – Reprioritized Score
	Civilian (GS-13 to GS-15)	DV_S	BTI – Suspended Score
		DV_D	BTI – Discontinued Score
		DV_MRSD	BTI – Disruption Score

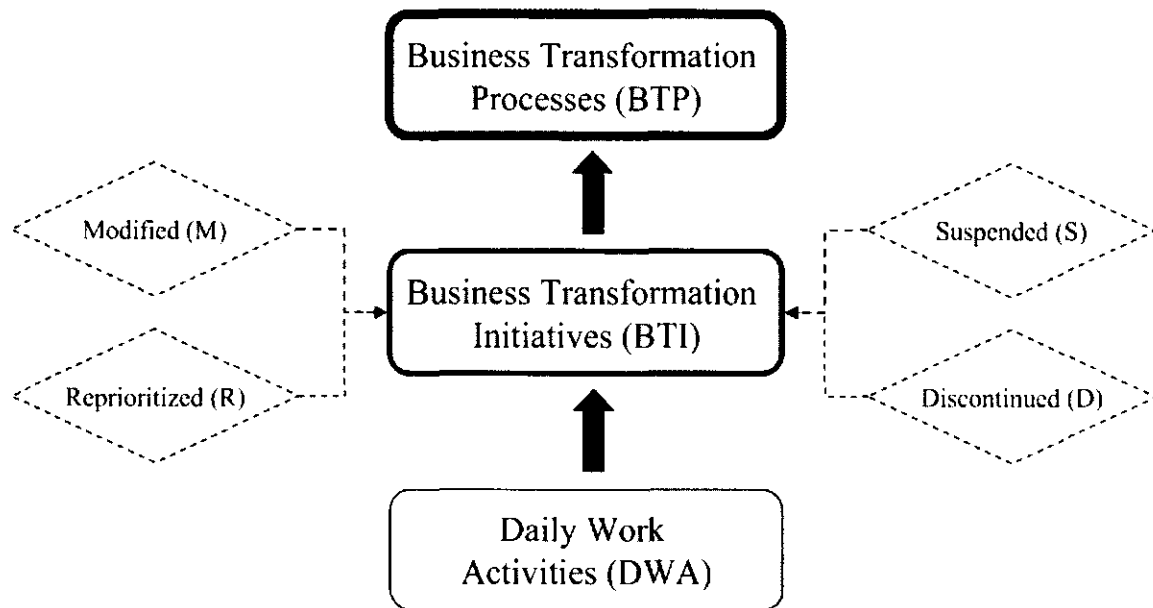
Figure 4 summarizes the measurement data collection model. All data in support of both independent and dependent variables are collected through means of a survey instrument (see Appendix H).

**Figure 4.** Measurement Data Collection Model

### 3.10 Process Relationships

For the organization(s) under study, many of the business transformation initiatives are executed through means of resource-dedicated programs and/or projects. Given the dynamic nature of the *military business*, strategic commands must be prepared to respond quickly to changes in the operational environment. According to feedback from a representative sample population at TRADOC, this preparedness often includes frequent modifications (e.g., requirements changes, reprioritization of efforts, restructuring activities, etc.) of existing program or project initiatives. In some instances, program/project initiatives may also be temporarily suspended or even permanently discontinued.

As outlined in Section 3.2, the primary purpose of this research is to evaluate whether or not any of the seven categorical factors may contribute to the disruption of business transformation efforts. To test the hypotheses, the researcher first evaluates influencing factors and measures their associated *disruption scores*. This is accomplished through an assessment of staff members' experiences as part of daily work activities (DWA) which contribute to larger business transformation processes. For this particular study, Figure 5 illustrates the relationships and influencing factors of work activities and associated business transformation initiatives or processes. Furthermore, the following definition summarizes the three-tiered relationship (DWA, BTI, and BTP): "Daily work activities, when implementing business transformation initiatives (e.g., 'Transforming the *Institutional Army*'), support the realization of business transformation processes" (Bock, 2013).



**Figure 5.** Process Relationship Diagram

The successful implementation of business transformation initiatives can be negatively impacted as part of either being a) modified; b) reprioritized; c) suspended; and/or d) discontinued. To better understand staff members' experiences about the impact of frequent changes, five *conceptual* questions (see Table 16) were designed to gain knowledge on potential organizational disruption from the individuals' perspectives.

**Table 16.** Conceptual Question Framework (Dependent Variable)

Question Focus	Conceptual Question Framework (Dependent Variable) <sup>8</sup>
Program Contribution	Did you contribute to business transformation initiatives?
Modified Requirements	Were any program requirements changed?
Reprioritized Initiatives	Was the program reprioritized?
Suspended Initiatives	Was the program temporarily suspended?
Discontinued Initiatives	Was the program permanently discontinued?

<sup>8</sup> Appendix H provides full context of the actual survey questions.

### 3.11 Data Pre-Analysis

Upon closing the data collection, the pre-analysis phase consists of four steps: 1) identification of survey records where research participants responded that they did *not* contribute to any business transformation initiative(s) within their organization; 2) identification and removal of any incomplete surveys (i.e., surveys which were either discontinued midstream or *not* submitted at the end of the questionnaire); 3) execution of reverse scoring procedures to a pre-defined sub-set of the independent variables; and 4) examination of survey records which may be indicative of *inattentive* responses.

Although the survey records identified in step #1 are kept, they should be *flagged* and excluded from the research analysis. Essentially, survey respondents' perceptions reflecting that either a) their organization/unit or b) the individuals themselves had not had the opportunity to support business transformation initiatives – whether directly or indirectly – disqualifies the associated responses from the study. That is, said research participants did *not* experience any organizational challenges that may emerge when business transformation initiatives were either: a) modified; b) reprioritized; c) suspended; and/or d) discontinued. Therefore, as these critical metrics facilitate the computation of the dependent variable, those particular survey records could skew the research results negatively or positively. However, as part of secondary research objectives (e.g., analyzing demographics and potential correlations to the disruption phenomena of business transformation processes), survey respondents who indicated they did *not* contribute to business transformation initiatives may still yield valuable insights. For example, their data could be useful for an additional investigation which may lead to

proposed recommendations for creating improved situational awareness of change management efforts within an organization. Next, upon completing step #2 (i.e., deleting any incomplete surveys), reverse scoring should be applied. Additional details for the required activity are covered in Appendix I of this research report.

Finally, it was envisioned to scan all survey records for *inattentive* or *careless* responses. As part of any research effort which employs online surveys for data collection purposes, it is probable that a subset of survey records may contain repeated (and potentially suspicious) Likert scale response values. While more evident patterns such as [1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1] or [7, 6, 5, 4, 3, 2, 1, 7, 6, 5, 4, 3, 2, 1] are readily identifiable, there is an infinite variety of response patterns which may require further examination (in conjunction with checking associated survey completion times). In essence, according to authors Meade and Craig, “such data could lead to spurious within-group variability and lower reliability which in turn will tend to attenuate correlations, and potentially create Type II errors in hypothesis testing” (Meade & Craig, 2012).

Since the online survey was distributed to approximately 6,000 staff members, a manual scanning/review of all completed survey responses would result in inefficient and tedious data pre-analysis efforts. Therefore, it was decided to implement a function (utilizing VBA) which automates the identification of *candidate records*.<sup>9</sup>

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<sup>9</sup> Appendix N provides the complete VBA code utilized in function *IdentifyCarelessResponses()*. Table 17, Table 18, and Table 19 illustrate the output of the proposed scanning methodology.

**Table 17.** Example – Likert Scale Responses (Before Record Scan)

24 Survey Questions (# 6 through # 29 – Independent Variables)																							ID	
5	1	1	1	7	1	2	7	7	6	1	7	7	1	1	7	1	1	1	7	1	7	7	1	1
1	3	4	7	6	4	2	7	7	3	2	2	1	4	5	7	1	1	1	5	4	6	1	2	2
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	3
4	4	1	7	5	5	3	6	7	2	1	7	7	6	1	5	3	6	4	3	5	2	4	7	4
1	4	2	1	7	2	5	2	3	3	6	2	6	5	3	2	4	4	1	7	4	6	5	5	5
4	3	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	6
5	5	6	3	7	5	4	5	7	6	5	7	2	5	4	6	7	3	4	2	4	4	5	7	7
4	5	4	6	7	7	6	3	2	1	7	7	7	3	4	3	5	3	6	7	3	6	6	6	8
1	7	5	4	1	1	5	4	6	2	5	4	3	3	3	4	7	1	1	5	1	5	5	4	9
2	3	5	7	2	4	4	4	3	7	5	2	3	5	3	2	6	3	2	2	5	1	1	1	10
3	1	7	1	1	5	7	6	3	6	5	7	6	5	5	4	3	1	5	5	1	6	5	3	11
2	4	1	2	6	5	4	3	7	4	2	2	1	7	3	5	5	5	5	5	5	5	5	5	12
1	1	4	2	5	3	7	7	3	3	2	5	3	6	2	5	7	6	1	2	6	7	2	5	13
3	6	2	1	1	5	4	7	6	5	4	3	2	1	7	6	5	4	3	2	1	4	3	3	14
6	3	5	2	6	4	5	3	2	3	5	3	4	7	4	4	5	5	3	6	1	5	2	4	15
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
3	1	1	2	3	4	5	4	5	1	1	6	2	3	1	2	3	4	5	6	7	7	5	2	6000

Whether a raw data set includes either hundreds or thousands of survey responses, it is argued that manual screening for any suspicious and non-obvious response patterns is not effective. Furthermore, it may result in missing inattentive records. Therefore, implementing the proposed VBA function facilitates automated detection of repeated/suspicious response patterns across the 24 questions (i.e., the independent variables for this research). More specifically, the function is designed to identify a) sequences of four Likert scale value patterns which are repeated more than two times/record and b) sequences of five Likert scale value patterns which are repeated more than once/record. Upon program execution, the candidate records are highlighted (see Table 18). For those specific records, it is then recommended to cross-reference the associated survey completion time (see Table 20 and Table 21). In the event the survey completion times are significantly less than the total average survey completion time, it

can be assumed that some of the survey participant(s) may have made arbitrary value selections before submitting the electronic survey. In such case, it is recommended to exclude these specific record(s) before conducting statistical data analysis in SPSS.

**Table 18.** Example – Likert Scale Responses (After Record Scan)

24 Survey Questions (# 6 through # 29 – Independent Variables)																							ID	
5	1	1	1	7	1	2	7	7	6	1	7	7	1	1	7	1	1	1	7	1	7	7	1	1
1	3	4	7	6	4	2	7	7	3	2	2	1	4	5	7	1	1	1	5	4	6	1	2	2
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	3
4	4	1	7	5	5	3	6	7	2	1	7	7	6	1	5	3	6	4	3	5	2	4	7	4
1	4	2	1	7	2	5	2	3	3	6	2	6	5	3	2	4	4	1	7	4	6	5	5	5
4	3	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	6
5	5	6	3	7	5	4	5	7	6	5	7	2	5	4	6	7	3	4	2	4	4	5	7	7
4	5	4	6	7	7	6	3	2	1	7	7	7	3	4	3	5	3	6	7	3	6	6	6	8
1	7	5	4	1	1	5	4	6	2	5	4	3	3	3	4	7	1	1	5	1	5	5	4	9
2	3	5	7	2	4	4	4	3	7	5	2	3	5	3	2	6	3	2	2	5	1	1	1	10
3	1	7	1	1	5	7	6	3	6	5	7	6	5	5	4	3	1	5	5	1	6	5	3	11
2	4	1	2	6	5	4	3	7	4	2	2	1	7	3	5	5	5	5	5	5	5	5	5	12
1	1	4	2	5	3	7	7	3	3	2	5	3	6	2	5	7	6	1	2	6	7	2	5	13
3	6	2	1	1	5	4	7	6	5	4	3	2	1	7	6	5	4	3	2	1	4	3	3	14
6	3	5	2	6	4	5	3	2	3	5	3	4	7	4	4	5	5	3	6	1	5	2	4	15
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
3	1	1	2	3	4	5	4	5	1	1	6	2	3	1	2	3	4	5	6	7	7	5	2	6000

**Table 19.** Example – Suspicious Pattern Report

Suspicious Pattern Output (VBA Immediate Window)			ID
Found suspicious pattern:	66666	in row:	3
Found suspicious pattern:	12345	in row:	6
Found suspicious pattern:	55555	in row:	12
Found suspicious pattern:	76543	in row:	14
Found suspicious pattern:	12345	in row:	6000

**Table 20.** Example – Suspicious Pattern Report (Average and Threshold Values)

Average Survey Time (in minutes)	Average Survey Time (in seconds)	Suspicious Threshold Factor	Suspicious Threshold Value (in seconds)
20	1,200	1/4	300



**Table 21.** Example – Suspicious Pattern Report (Cross-Referencing Time)

ID	Suspicious Record Code (1)	Inattentive Record Flag	Survey Participant's Completion Time	Delete Record Flag
1	0	---	1,640	---
2	0	---	1,204	---
3	1	Review record	656	---
4	0	---	1,231	---
5	0	---	1,301	---
6	1	Review record	1,011	---
7	0	---	1,498	---
8	0	---	1,255	---
9	0	---	1,783	---
10	0	---	1,225	---
11	0	---	1,399	---
12	1	Review record	280	Yes
13	0	---	1,444	---
14	1	Review record	1,301	---
15	0	---	1,674	---
...	...	...	...	...
...	...	...	...	...
...	...	...	...	...
6000	1	Review record	299	Yes

Utilizing automated calculation procedures in MS-Excel®, those records flagged as *inattentive/careless* require further review. It is recommended to then compare the research participant's survey completion time with the *average survey completion time*. In this example, the average survey completion time was 20 minutes (or 1,200 seconds). The *suspicious* survey threshold factor was set to be 1/4 of the average survey completion time, resulting in a suspicious threshold value of, e.g., 300 seconds. Therefore, all records that both a) are flagged for further review and b) have a survey completion time of less than the suspicious survey threshold value should be recommended for deletion.

### 3.12 Data Analysis Flowchart

For this study, both the research design and data analysis are comprised of twenty-one processes and nine decision points. Figure 6 illustrates the research design functions.

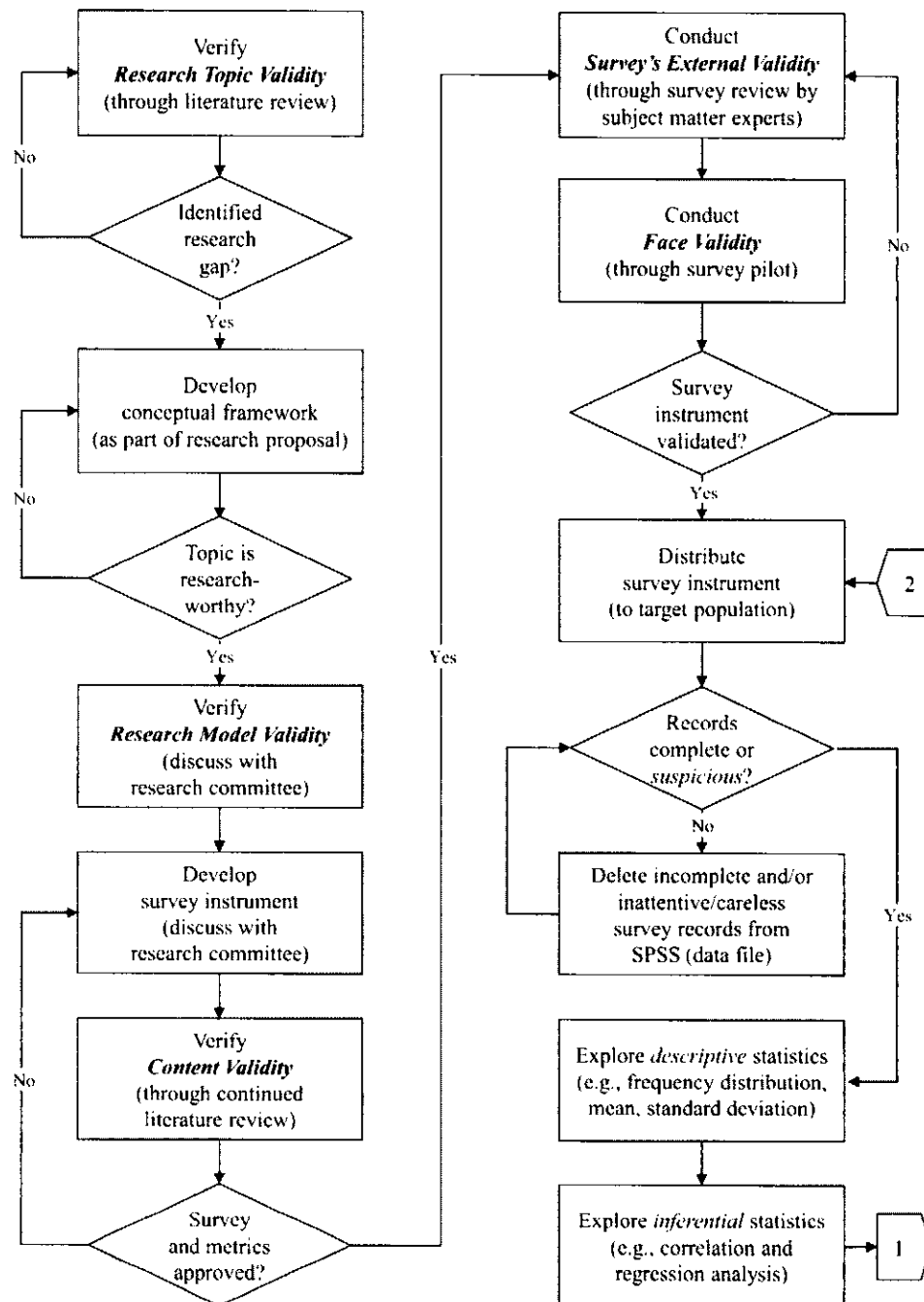
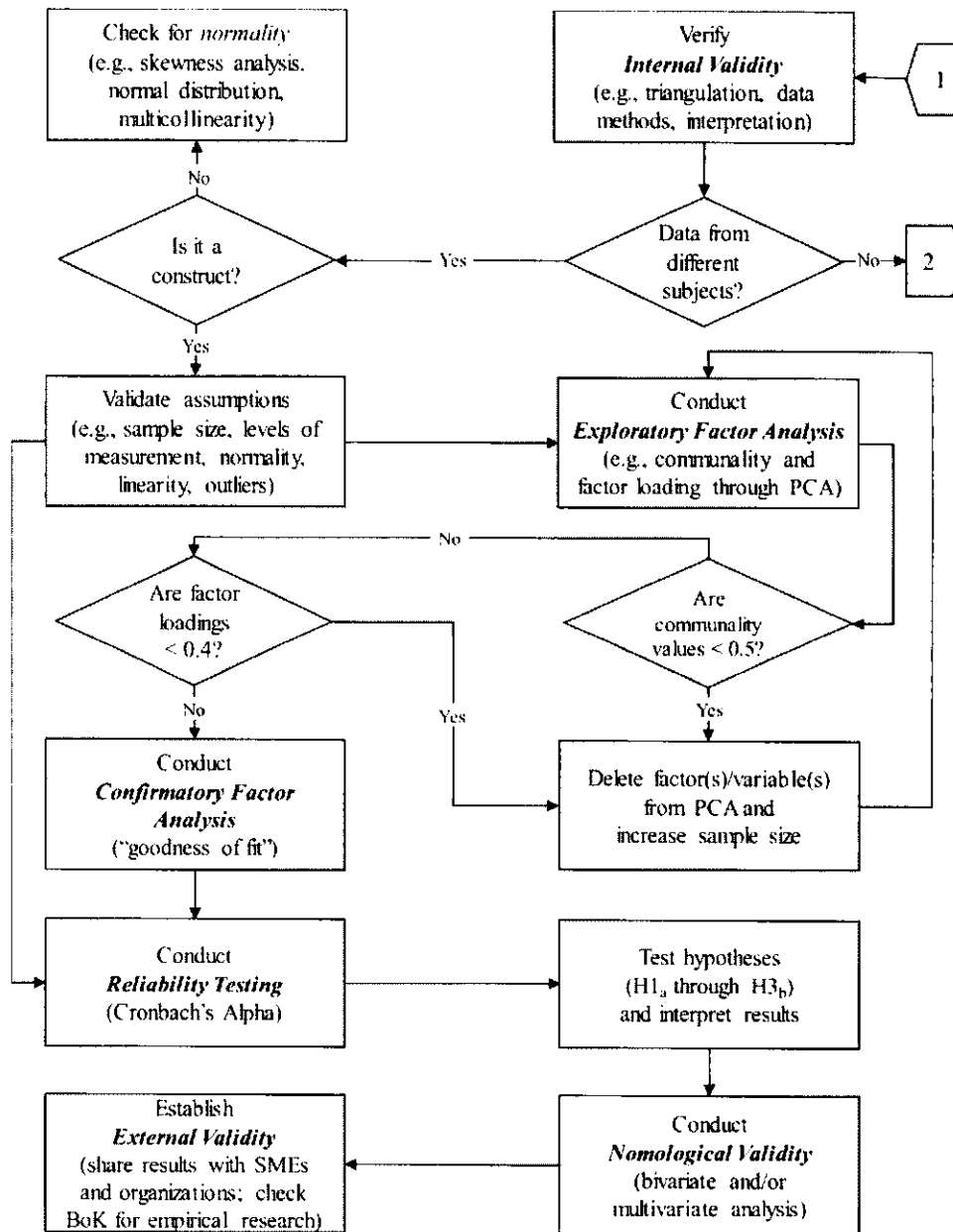


Figure 6. Research Design and Data Analysis Flowchart (Page 1)

The majority of the data analysis processes and their associated decision points are captured in Figure 7. The off-page connectors [1] and [2] – marked in gray in the right margin – facilitate the logical flow between Figure 6 and Figure 7.



**Figure 7.** Research Design and Data Analysis Flowchart (Page 2)

### 3.13 Computation of Disruption Score (Dependent Variable)

As part of the larger questionnaire, study participants are asked five questions (see Table 16) to collect data in support of the dependent variable. Sections 3.10 and 3.11 provided additional background on this particular research activity. In order to compute an individual staff member's preliminary disruption score, formula (1-1) is utilized. The suggested equation includes three terms: 1) staff members' individual ratings for any one of the four influencing factors (e.g., *Modified*, *Reprioritized*, *Suspended*, and *Discontinued*); 2) count of business transformation initiatives for *Participant<sub>i</sub>* supporting *Initiative<sub>k</sub>*; and 3) total count of supported business transformation initiatives across all staff members (i.e., *Participant<sub>i=1</sub>*).

$$MS_{ik} = \frac{m_{ik} \sum_{i=1}^N p_{ik}}{\sum_{j=1}^N \sum_{l=1}^{NN} p_{jl}} \quad (3-1)$$

In accordance with the proposed notation, staff members (i.e., study participants) are referenced as subscript *i*. Alternatively, subscript *ik* indicates the total number of all research participants who either contribute to a) all existing business transformation initiatives or b) only a subset of all existing business transformation initiatives. The ratio of *i* and *k* determines whether a specific business transformation initiative has a sufficiently large number of contributing staff members who indicated some level of *perceived* disruption. For instance, if *i*=1000 and  $\sum ik_1=10$  (i.e., 10 out 1000 staff members contribute to initiative *k<sub>1</sub>*), then it could be argued that business transformation

initiative  $k_1$  – which is supported by only 1% of the staff – must have less of an overall potential disruptive impact than another business transformation initiative where, e.g.,  $\sum ik_2=250$  (i.e., 25% of the organization’s staff members support initiative  $k_2$ ). Therefore, it is necessary to proportionally scale the disruption score based on the ratio of *Initiative<sub>k</sub>* being supported by *Participant<sub>i</sub>*.

The academic advisor/director for this study, Dr. Rafael Landaeta, suggests the following approach: “[We] can use the result of each [initiative] normalized by the sample proportion. Let’s say for the same 5 [business transformation initiatives the MRSD products] are 4, 5, 5, 6, and 10. If we calculate the average it will be 6, but this value does *not* consider the importance of each [initiative] to the full business transformation, so there should be a weight for each business [initiative] that depends on how critical the transformation [initiative] is to the full business transformation. So let’s say that  $N$  are 200, 200, 500, 1000, 500 for each business [initiative]. The total for all is 2400 people contributing to the full business transformation [initiative]. For example, using data assumed before, [initiative] # 1’s normalized disruption [score] equals  $[(4)(200)/(2400)]$  or 0.33” (R. Landaeta, personal communication, April 2, 2013). Refer to Section 3.14 and Appendix Q for the complete computation process.

As previously indicated, *normalizing* (on a scale of 0-1) the preliminary computed disruption scores is critical before conducting any data analysis. An example of the scaling process is shown in Table 25 in Section 3.14. Furthermore, to compute the final disruption scores for each of the four rating factors (abbreviated MRSD) as well as the

*total disruption score* (MRSDS), this research proposes to average the contributions of each research participant's business transformation initiatives. Both Table 26 and Table 27 in the next section illustrate the applied methodology for this process. Call-outs are utilized to summarize the calculations for one of the rating factors (e.g., Modified).

### **3.14 Computation of Disruption Score (Example)**

This section provides an example as to how a staff member's disruption score is computed. First, the preliminary disruption score for each of the four rating factors (i.e., modified, reprioritized, suspended, and discontinued) are determined.

Table 23, using function (3-1), illustrates this process. Next, the disruption scores are then normalized on a 0-1 scale. Applying function (3-2), the computed example values are shown in Table 25. Finally, Table 26 and function (3-3) show the calculation for averaging scores. It is recommended though to first review all variables which are summarized in Table 22.<sup>10</sup>

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<sup>10</sup> Appendix P summarizes all functions for the four ratings factors (MRSD).

Table 22. Variables (Computation of Disruption Score)

Category	Symbol	Definition
Modified (M) Reprioritized (R) Suspended (S) Discontinued (D)	$MS_{ik}$	Modified Score (Participant <sub>i</sub> supporting Initiative <sub>k</sub> )
	$m_{ik}$	Modified Rating Factor (Participant <sub>i</sub> for Initiative <sub>k</sub> )
	$RS_{ik}$	Reprioritized Score (Participant <sub>i</sub> supporting Initiative <sub>k</sub> )
	$r_{ik}$	Reprioritized Rating Factor (Participant <sub>i</sub> for Initiative <sub>k</sub> )
	$SS_{ik}$	Suspended Score Participant <sub>i</sub> supporting Initiative <sub>k</sub> )
	$s_{ik}$	Suspended Rating Factor (Participant <sub>i</sub> for Initiative <sub>k</sub> )
	$DS_{ik}$	Discontinued Score (Participant <sub>i</sub> supporting Initiative <sub>k</sub> )
	$d_{ik}$	Discontinued Rating Factor (Participant <sub>i</sub> for Initiative <sub>k</sub> )
	$MRSDS_{ik}$	Total MRSD Score (Participant <sub>i</sub> supporting Initiative <sub>k</sub> )
	$mrsd_{ik}$	Total MRSD Rating Factor (Participant <sub>i</sub> for Initiative <sub>k</sub> )
MR SD Score	$p_{ik}$	Participant <sub>i</sub> supporting Initiative <sub>k</sub>
	$p_{il}$	Participant <sub>i</sub> supporting Initiative <sub>l</sub> (alias)
	$N$	Number of Participants
	$NN$	Number of Initiatives
	$i, j$	Participant subscript(s)
	$k, l$	Initiative subscript(s)
Normalization	$NMS_{ik}$	Normalized Modified Score
	$NRS_{ik}$	Normalized Reprioritized Score
	$NSS_{ik}$	Normalized Suspended Score
	$NDS_{ik}$	Normalized Discontinued Score
	$NMRSDS_{ik}$	Normalized Total MRSD Score (i.e. "Disruption Score")
	$Max$	Max Value
	$Min$	Min Value

**Table 23.** Step 1a (Example) – Compute Disruption Scores for MRSD Factors <sup>11</sup>

i	k	$m_{ik}$	$r_{jk}$	$s_{ik}$	$d_{ik}$	$f_{m_{ik}}$	$f_{r_{jk}}$	$f_{s_{ik}}$	$f_{d_{ik}}$	$fMRSDS_{ik}$	$f\%MRSDS_{ik}$
Participant 1	1	4	2	2	1	0.500	1.000	1.000	0.000	2.500	0.625
	2	0	0	0	0						
	3	0	0	0	0						
	4	0	0	0	0						
	5	0	0	0	0						
	6	0	0	0	0						
	7	0	0	0	0						
	8	0	0	0	0						
	9	0	0	0	0						
	10	0	0	0	0						
	11	3	2	1	2	0.333	1.000	0.000	1.000	2.333	0.583
Participant 2	1	0	0	0	0						
	2	0	0	0	0						
	3	0	0	0	0						
	4	6	1	2	1	0.833	0.000	1.000	0.000	1.833	0.458
	5	0	0	0	0						
	6	0	0	0	0						
	7	7	1	2	1	1.000	0.000	1.000	0.000	2.000	0.500
	8	0	0	0	0						
	9	0	0	0	0						
	10	0	0	0	0						
	11	5	2	1	2	0.667	1.000	0.000	1.000	2.667	0.667
Participant i	1	0	0	0	0						
	2	6	1	1	2	0.833	0.000	0.000	1.000	1.833	0.458
	3	0	0	0	0						
	4	0	0	0	0						
	5	0	0	0	0						
	6	2	2	2	2						
	...	...	...	...	...						
11	0	0	0	0							

<sup>11</sup> Appendix O provides additional details on the function (f) for scaling MRSD factors. The above and subsequent calculations were completed in MS-Excel® and then copied into Table 23 through Table 26. Due to rounding, slight variances (third decimal) are to be expected when replicating the above calculations.



**Table 24.** Step 1b (Example) – Compute Disruption Scores for MRSD Factors <sup>12</sup>

	<i>i</i>	<i>k</i>	$m_{ik}$	$r_{ik}$	$s_{ik}$	$d_{ik}$	$N\Sigma p_{ik}$	$N\Sigma NN\Sigma p_{jl}$	$MS_{ik}$	$RS_{ik}$	$SS_{ik}$	$DS_{ik}$
Participant 1	1		0.500	1.000	1.000	0.000	1	6	0.083	0.167	0.167	0.000
	2		---	---	---	---						
	3		---	---	---	---						
	4		---	---	---	---						
	5		---	---	---	---						
	6		---	---	---	---						
	7		---	---	---	---						
	8		---	---	---	---						
	9		---	---	---	---						
	10		---	---	---	---						
	11		0.333	1.000	0.000	1.000	2	6	0.111	0.333	0.000	0.333
Participant 2	1		---	---	---	---						
	2		---	---	---	---						
	3		---	---	---	---						
	4		0.833	0.000	1.000	0.000	1	6	0.139	0.000	0.167	0.000
	5		---	---	---	---						
	6		---	---	---	---						
	7		1.000	0.000	1.000	0.000	1	6	0.167	0.000	0.167	0.000
	8		---	---	---	---						
	9		---	---	---	---						
	10		---	---	---	---						
	11		0.667	1.000	0.000	1.000	2	6	0.222	0.333	0.000	0.333
Participant <i>i</i>	1		---	---	---	---						
	2		0.833	0.000	0.000	1.000	1	6	0.139	0.000	0.000	0.167
	3		---	---	---	---						
	4		---	---	---	---						
	5		---	---	---	---						
	6		---	---	---	---						
	7		---	---	---	---						
	8		---	---	---	---						
	9		---	---	---	---						
	10		---	---	---	---						
	11		---	---	---	---						

$$MS_{ik} = \frac{m_{ik} \sum_{i=1}^N p_{ik}}{\sum_{j=1}^N \sum_{l=1}^N p_{jl}} \quad (3-1)$$

<sup>12</sup> There are two different methods for deriving  $N\Sigma NN\Sigma p_{jl}$ . Upon normalizing  $MS_{ik}$ , the scaled values for, e.g.,  $NMS_{ik}$  [see Table 25] are the same for either approach. For this research, method #1 was selected. **Method # 1:** This technique is illustrated above. For the denominator,  $N\Sigma NN\Sigma p_{jl}$ , the total count of  $m_{ik}$  (e.g., 6) is determined. Hence, the scaled values for  $_{i-1} \cdot k-1$  and  $_{i-1} \cdot k-1$  equal 0.000 and 0.200, respectively. **Method # 2:** The sum of  $N\Sigma p_{ik}$  (e.g., 8) may be applied. Thus, the illustrated  $MS_{ik}$  computation for  $_{i-1} \cdot k-1$  would change from  $[(0.500)(1)/(6)]$  to  $[(0.500)(1)/(8)]$ . Similarly,  $MS_{ik}$  for  $_{i-1} \cdot k-1$  would change from  $[(0.333)(2)/(6)]$  to  $[(0.333)(2)/(8)]$ . Consequently, their values would change to 0.063 and 0.083, respectively. However, once normalized, their values would also equal 0.000 and 0.200, respectively.

**Table 25.** Step 2 (Example) – Normalize Disruption Scores

i	k	MS <sub>ik</sub>	NMS <sub>ik</sub>	RS <sub>ik</sub>	NRS <sub>ik</sub>	SS <sub>ik</sub>	NSS <sub>ik</sub>	DS <sub>ik</sub>	NDS <sub>ik</sub>	MRSDS <sub>ik</sub>	NMRSDS <sub>ik</sub>
Participant 1	1	0.083	0.000	0.167	0.500	0.167	1.000	0.000	0.000	0.104	0.190
	2	---	---	---	---	---	---	---	---	---	---
	3	---	---	---	---	---	---	---	---	---	---
	4	---	---	---	---	---	---	---	---	---	---
	5	---	---	---	---	---	---	---	---	---	---
	6	---	---	---	---	---	---	---	---	---	---
	7	---	---	---	---	---	---	---	---	---	---
	8	---	---	---	---	---	---	---	---	---	---
	9	---	---	---	---	---	---	---	---	---	---
	10	---	---	---	---	---	---	---	---	---	---
	11	0.111	0.200	0.333	1.000	0.000	0.000	0.333	1.000	0.194	0.810
Participant 2	1	---	---	---	---	---	---	---	---	---	---
	2	---	---	---	---	---	---	---	---	---	---
	3	---	---	---	---	---	---	---	---	---	---
	4	0.139	0.400	0.000	0.000	0.167	1.000	0.000	0.000	0.076	0.000
	5	---	---	---	---	---	---	---	---	---	---
	6	---	---	---	---	---	---	---	---	---	---
	7	0.167	0.600	0.000	0.000	0.167	1.000	0.000	0.000	0.083	0.048
	8	---	---	---	---	---	---	---	---	---	---
	9	---	---	---	---	---	---	---	---	---	---
	10	---	---	---	---	---	---	---	---	---	---
	11	0.222	1.000	0.333	1.000	0.000	0.000	0.333	1.000	0.222	1.000
Participant i	1	---	---	---	---	---	---	---	---	---	---
	2	0.139	0.400	0.000	0.000	0.000	0.000	0.167	0.500	0.076	0.000
	3	---	---	---	---	---	---	---	---	---	---
	4	---	---	---	---	---	---	---	---	---	---
	5	---	---	---	---	---	---	---	---	---	---
	6	---	---	---	---	---	---	---	---	---	---
	7	---	---	---	---	---	---	---	---	---	---
	8	---	---	---	---	---	---	---	---	---	---
	9	---	---	---	---	---	---	---	---	---	---
	10	---	---	---	---	---	---	---	---	---	---
	11	---	---	---	---	---	---	---	---	---	---

$$NMS_{ik} = \frac{[MS_{ik} - Min(MS_k)]}{[Max(MS_k) - Min(MS_k)]} \tag{3-2}$$

**Table 26.** Step 3 (Example) – Compute Average of Normalized Disruption Scores

<i>i</i>	<i>k</i>	$\bar{x}$ NMS <sub><i>ik</i></sub>	$\bar{x}$ NRS <sub><i>ik</i></sub>	$\bar{x}$ NSS <sub><i>ik</i></sub>	$\bar{x}$ NDS <sub><i>ik</i></sub>	$\bar{x}$ NMRSDS <sub><i>ik</i></sub>
Participant 1	1	0.000	0.500	1.000	0.000	0.190
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11	0.200	0.100	1.000	0.750	0.000
Participant 2	1					
	2					
	3					
	4	0.400	0.000	1.000	0.000	0.000
	5					
	6					
	7	0.600	0.000	1.000	0.000	0.048
	8					
	9					
	10					
	11	1.000	0.667	1.000	0.333	0.000
Participant <i>i</i>	1					
	2	0.400	0.000	0.000	0.500	0.000
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11	0.400	0.000	0.000	0.500	0.000

$0.100 \approx \frac{(0.000 + 0.200)}{(2)}$

$$\bar{x} NMS_{ik} = \frac{\sum NMS_{ik}}{\sum_{ik}} \quad (3-3)$$

**Table 27.** Step 4 (Example) – Summary of Average Normalized Disruption Scores

<i>i</i>	$\bar{x}$ NMS <sub><i>ik</i></sub>	$\bar{x}$ NRS <sub><i>ik</i></sub>	$\bar{x}$ NSS <sub><i>ik</i></sub>	$\bar{x}$ NDS <sub><i>ik</i></sub>	$\bar{x}$ NMRSDS <sub><i>ik</i></sub>
Participant 1	0.100	0.750	0.500	0.500	0.500
Participant 2	0.667	0.333	0.667	0.333	0.349
Participant <i>i</i>	0.400	0.000	0.000	0.500	0.000

## CHAPTER 4

### RESULTS

The purpose of this study is to explore the following research questions: *Are there existing correlations among a) leadership turbulence, b) resistance to business transformation, and/or c) lack of agility in military culture in respect to potential disruption of business transformation processes in strategic military commands? If so, what is the direction of correlations between any of the seven associated aspects (i.e., hypotheses H1<sub>a</sub> through H3<sub>b</sub>) given staff members' responses to the perceived disruption of business transformation?*

A research model was developed to investigate the experiences – related to change management – of both mid-level and senior-level military officers as well as government civilians. Data was collected from a strategic military command was collected. Specifically, data was collected from the *U.S. Army Training and Doctrine Command*. In order to support the initial qualitative research performed through focus groups, a survey instrument was utilized to obtain quantitative feedback. This chapter summarizes the results of the data analysis of the responses from all staff members who voluntarily participated in this study.

First, Section 4.1 outlines some *lessons learned* as part of the survey development and its approval process within TRADOC. The objective of this chronicle is to share a *story* that could benefit other researchers who plan to pursue similar research-related

activities within strategic military domains. Then, Sections 4.2 to 4.7 cover the actual data results, including descriptive and inferential statistics.

#### **4.1 Lessons Learned (in Preparation for Survey Release)**

It should be emphasized that the survey approval phase was a valuable learning process for all involved stakeholders (i.e., student/researcher, the university, as well as the TRADOC team). The Sub-Sections 4.1.1 through 4.1.8 cover the development activities in support of the survey release. The researcher takes full responsibility for all necessary product rework and, as a result thereof, any schedule delays. Alternatively, without the dedicated support from senior leaders in the military command under study (i.e., both the Deputy Chief of Staff (DCoS) and Chief Knowledge Officer (CKO)) it is believed this research could not have been completed as it stands.

##### *4.1.1 Focus Groups*

The purpose of conducting focus groups was to gain an initial understanding about staff members' perceived challenges and/or experiences with respect to business transformation within a strategic military command. As part of this current chapter, the benefit of coordinating focus groups is merely reiterated. For instance, when utilizing either a qualitative or mixed method, facilitating several focus groups may enable the researcher to identify organizational challenges or problems (as experienced by the organization's staff members). Hence, developing a research framework that addresses real issues both in practice and in the literature creates a "win-win-situation." That is, not

only does it help with advancing science through research, but it will also provide valuable findings to the organization under study.

#### *4.1.2 Sponsorship within the Strategic Military Organization Studied*

Sponsorship within the strategic military organization was extremely important for the performance of this investigation. Ideally, within the scope of a strategic military command, a sponsor should be on the Flag Officer/General Officer (FOGO) or Senior Executive Service (SES) level. As this study was within the U.S. military, sponsorship from two of TRADOC's most senior officers was obtained. That is, upon completion of several focus groups as well as the development of the initial research framework, the researcher was given the opportunity to first brief the Deputy Chief of Staff (DCoS) and then the Deputy Commanding General (DCG). As indicated in Sub-Section 4.1.1, the recommendation to address a "real" problem helped with obtaining organizational *buy-in* and support from the command's senior leadership. Furthermore, as part of the two briefings, the DCG and DCoS offered to identify a *champion/advocate* (on the O6 level) with whom the researcher would work closely.

Having had the benefit of direct collaboration with the designated research champion (i.e., TRADOC's CKO) proved to be most advantageous. More specifically, the CKO leveraged his authority to direct the review/approval of the survey instrument by many other senior officers within TRADOC as well as external military organizations such as the *Army Research Institute* (Fort Belvoir, VA) and the *Office of the Chief of Public Affairs* (Pentagon, Washington, DC).

Throughout the survey approval process, some of the TRADOC leadership indicated that continued collaboration (beyond this research) between the command and academia may be desired. Therefore, if justifiable, the establishment of a dedicated staff member function (e.g., “Academic Liaison/Outreach Coordinator”) may need to be investigated. For instance, this staff function would enable the organization to interface with academia on various levels. Also, this proposed role could leverage the organizational knowledge to bring together *ad hoc* teams in support of conducting focus groups for any future research-related activities.

Finally, as part of the lessons learned, it was also critical to have the research committee advisor/director be involved in the early partnership activities. In the case of this particular study, the committee director’s expertise was an extremely valuable asset. Obtaining his most helpful advice and feedback was crucial to meeting the overall research goal.

#### *4.1.3 Survey Approval Process*

One of the most critical components for successfully completing this research was the design of the independent and dependent variables as well as their associated constructs and metrics. The development of the initial (draft) survey instrument took approximately three months. Afterwards, the proposed survey was routed through the academic committee for review and approval. Next, the Institutional Review Board

(IRB) – at Old Dominion University – verified that its content as well as the proposed data collection method would *not* violate any ethical guidelines.<sup>13</sup>

Upon attaining IRB approval, the survey was then routed through the staffing process at TRADOC (see Table 235 in Appendix C). Altogether, this process (i.e., survey review by the academic committee, IRB, and TRADOC) took seven months. As previously mentioned, this specific aspect of the research effort was a learning experience for all involved stakeholders. In hindsight, the timeline for the review process could have been compressed. Therefore, for purposes of future research, in activities with either Old Dominion University or any other fully accredited university/college, the recommended role of the *Academic Liaison/Outreach Coordinator* may generate process efficiencies as such a (proposed) designated staff member would be very familiar with the routing/approval procedures within the particular military organization.

#### 4.1.4 *Army Research Institute (ARI)*

In accordance with U.S. Army policy: “1. All attitude and opinion surveys of Active Army personnel conducted in two or more major commands (Army Commands, Army Service Component Commands, or Direct Reporting Units) must be approved by ARI prior to administration. 2. Attitude and opinion surveys conducted solely within a single command (e.g., ACOM, division, brigade, battalion, or company/detachment) must be approved by the unit commander” – see Appendix H for the complete policy

#### *Obtaining Approval for a Survey of U.S. Army personnel.*

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<sup>13</sup> The Institutional Review Board (IRB) and Human Protections Administrator for Leader Development and Education (CGSC, Fort Leavenworth, KS) reviewed and approved the survey once it had been released (see Appendix G – Department of the Army – IRB).



Though the survey distribution to nearly 6,000 Army personnel was conducted within a single command (i.e., TRADOC), both TRADOC's CKO and the researcher agreed to obtain ARI assessment of the survey instrument. Ultimately, the ARI approval would further protect all involved stakeholders. Thus, the review process was initiated using the required form AR-600-46. At last, having obtained ARI feedback and several valuable change recommendations also provided external validity of the questionnaire, as the survey questions and constructs were reviewed by one of the institute's subject matter experts on survey design.

#### 4.1.5 *Email Distribution List*

The phrase "it's all about the data" turns out to be very true when implementing either a purely quantitative research design or mixed method. As indicated in Sub-Section 3.6.4, the research participants in a strategic-level military organization – in this particular research the *U.S. Army Training and Doctrine Command* – were limited to both mid-level and senior military officers (O4 to O6) as well as mid-level and senior civil servants (GS-13 to GS-15). As part of the email distribution to the target population, military staff members who have been *selected for promotion to Major* were also included. Table 28 summarizes the actual numeric breakdown of the staff members who were invited to participate in the research.

**Table 28.** Summary of Research Target Population

Target Population	Rank/Grade	Count	Subtotal	Total
Military	O3(P) <sup>14</sup>	354	3,241	5,932
	O4	1,277		
	O5	1,223		
	O6	387		
Civilian	GS-13	1,932	2,691	
	GS-14	595		
	GS-15	164		

As TRADOC oversees thirty-two Army schools and eight Centers of Excellence (CoEs) – with a total of approximately 40,000+ military and civilian staff members – the research champion requested an email distribution list (from G-1/4 – personnel office) based on the suggested research target population. To ensure PII regulations and guidelines would not be compromised, this email distribution list was *not* shared with either the researcher or Old Dominion University (Department of the Army, 2013b).

For future research activities (whether within TRADOC or any other military command), it is recommended that early contact be made with the G-1/4 director (or designated personnel) in order to obtain the email distribution list. Potentially, SQL scripts have to be written in order to automate the data extraction procedures within the human resources (HR) database.

<sup>14</sup> A pay-grade equal to O3(P) refers to officers with the rank of Captain (selected for promotion to Major).

#### 4.1.6 Survey Website Hosting

Many private service providers (e.g., *QuestionPro.com*, *SurveyGizmo.com*, etc.) specialize in hosting electronic surveys. Often, these websites provide an intuitive, effective, and easily accessible means for collecting anonymous data.

For this particular research, the service provider *QuestionPro.com* was selected. As part of the security protocol, the survey link was secure sockets layer (SSL) encrypted via *VeriSign* certificate version 3, 128-bit. This encryption method is commonly used for banking websites that securely transmit sensitive information across networks.

In support of anonymous data collection, the ability to collect internet protocol (IP) addresses was turned off. All data were stored on *QuestionPro.com*'s servers located in the United States. Moreover, it was verified that intrusion detection systems were in place in order to prevent interference/access from any potential outside intruders. Once all data had been collected and downloaded from *QuestionPro.com*, the survey records were then permanently deleted from the company's server(s). Additionally, the corporate account was closed.

Prior to the survey release, however, some staff members expressed the need to further investigate whether or not an "Authority to Operate" (ATO) and/or "Certificate of Networkiness" (CoN) was required. The underlying ATO concern was due to storing survey-related data on external servers for the duration of the data collection period. Based on previously described security layers at *QuestionPro.com*, this issue had been

properly addressed and, therefore, was resolved. Furthermore, while a minimal risk factor would always be present when storing sensitive (but *not* classified) information on a public server, it was agreed the benefits derived from this research outweigh this particular risk.

With respect to obtaining a CoN, the considerations are summarized in Table 29. According to the Army Training and Support Center (ATSC), several recommendations must be considered when installing either hardware or software on any Army network (Army Training and Support Center, 2013). As the research participants, however, were only provided a Uniform Resource Locator (URL) for accessing the survey website, the DCoS and CKO decided that the considerations for obtaining a CoN were not applicable to this research.

**Table 29.** Considerations for Certificate of Networthiness

Considerations for Certificate of Networthiness (CoN)
The Networthiness Certification Program manages the specific risks and impacts associated with the fielding of Information Systems (ISs) and supporting efforts, requires formal certification throughout the life cycle of all ISs that use the Information Technology (IT) infrastructure, and sustains the health of the Army Enterprise Infrastructure.
Networthiness Certification is concerned with the identification, measurement, control, and minimization of security risks and impacts in IT systems to a level commensurate with the value of the assets protected.
Networthiness Certification applies to all organizations fielding, using, or managing ISs on the Army Enterprise Architecture/LandWarNet (LWN), to include Commercial Off-the-Shelf (COTS) and Government Off-the-Shelf (GOTS).
Activities must obtain a Certificate of Networthiness (CoN) before they connect hardware/software to the LWN.

#### 4.1.7 *Non-Disclosure Agreements (NDAs)*

Given the nature of this research (i.e., it includes sensitive but *not* classified information), it was strongly recommended that both the researcher and university personnel (e.g., either the Dean or Provost from the *Batten College of Engineering and Technology* at Old Dominion University) sign non-disclosure agreements (NDAs).

The DCoS and CKO utilized the assistance from the Staff Judge Advocate (SJA) to draft these legal documents (see Appendix C). Consequently, establishing the NDAs not only protects the researcher but also the command, given that this dissertation document (and potentially follow-on journal articles) will be published in publicly accessible electronic literary sources. Finally, it was agreed that any collected data would be limited to the researcher's personal academic use and could not be further disseminated or used for profit or other commercial purposes. It was also agreed that the signed obligations would not expire.

#### 4.1.8 *Survey Release/Email Distribution*

As indicated in Sub-Section 3.6.3, the research target population was estimated at approximately 6,000 military and civilian staff members. With respect to the survey release, it was originally discussed that the DCoS would email the request for survey participation to this selected group. Prior to setting up this email invitation in MS-Outlook®, the CKO verified the viability of this proposed distribution method with TRADOC's Information Management Officer (IMO). It was then realized that sending a regular email to several thousand staff members *would have* a) violated Army policy and

b) resulted in the email being flagged as spam. Further, automated scanning procedures and spam filters on the Army network *would have* prevented the email delivery to most – if not all – survey participants. And, more than likely, no system feedback loop would have been in place to inform the research stakeholders of this particular (technical) mishap. Given this new information, this method for survey distribution was *not* executed as originally envisioned. Therefore, a different process for the survey release had to be investigated.

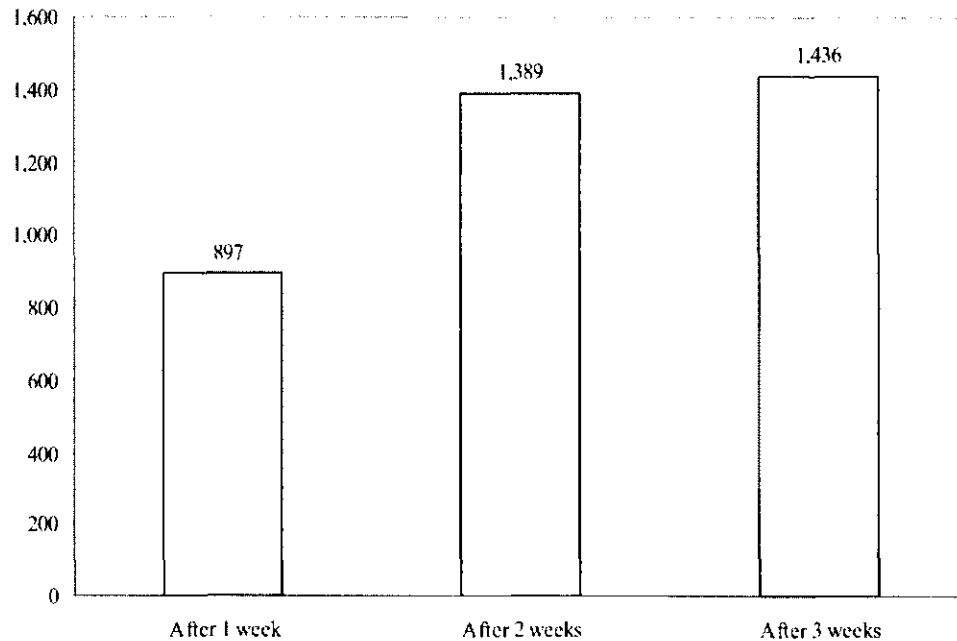
As part of the dialogue, the IMO provided information that the Army Knowledge Online (AKO) and Defense Knowledge Online (DKO) established procedures which facilitate the distribution of bulk emails to groups greater than 2,000 Army/DoD personnel. Hence, the required documentation (see forms/policy “AKO/DKO Bulk Email Procedure” and “AKO Bulk Email Request Memo” in Appendix C) was completed and survey distribution was then initiated by AKO/DKO. It is noteworthy to mention that this process requires a signature from a General Officer (e.g., DCoS).

## **4.2 Data Collection and Data Screening**

Sub-Sections 4.2.1 and 4.2.2 outline all data collection and data screening activities before transitioning into the research analysis.

### *4.2.1 Data Collection Period*

During the three-week long data collection period, a total of 1,436 surveys were submitted by the target population. Figure 8 illustrates the subtotals by each week.



**Figure 8.** Data Collection (Weekly Survey Count)

Table 30 summarizes the survey response rate(s) by the target population. Out of the 2,207 staff members who started the survey, 65.07% of the staff members completed their survey. According to Girden, a 70% completion rate indicates no threat of bias (Girden, 2001). This study's 65% ratio is close to Girden's recommended rate of return.

**Table 30.** Summary of Survey Response Rate (Raw Data)

Response Rate Statistics	Numerator	Denominator	%
Completed surveys / target population (TP)	1,436	5,932	24.21%
Completed surveys / survey viewed by TP	1,436	2,842	50.53%
Completed surveys / survey started by TP	1,436	2,207	65.07%

Providing further delineation, Table 31 outlines the survey response rate(s) by military rank and civilian grade. The values in columns [Count (Submitted)] and [%] were obtained from the raw data (i.e., prior to data screening). As part of the data review

(see next Sub-Section 4.2.2), however, any potentially invalid surveys would have to be excluded from the research analysis.

**Table 31.** Summary of Survey Response Rate

Target Population	Rank/Grade	Count (Submitted)	Count (Received)	%
Military	O3(P)	354	18	5.08%
	O4	1,277	203	15.90%
	O5	1,223	264	21.59%
	O6	387	95	24.55%
Civilians	GS-13	1,932	565	29.24%
	GS-14	595	209	35.13%
	GS-15	164	74	45.12%
Total		5,932	1,428 <sup>15</sup>	24.07%

#### 4.2.2 Data Screening

Data screening – prior to conducting data analysis – is a critical activity during any data collection effort. For this study, incomplete surveys (i.e., staff members having withdrawn from the questionnaire) were removed from the database without any further examination. Moreover, other exclusion criteria had to be considered before conducting the data analysis (in support of hypotheses testing). Table 32 summarizes the rationale for eliminating a subset of completed surveys.

**Table 32.** Survey Records Excluded from Data Analysis

Rationale for Survey Exclusion (i.e., data analysis)	Criteria	# of Surveys
Rank/grade is outside the target population	Sub-Section 3.6.4	8
Staff member reported no involvement in BTI	Section 3.11	331
Survey was considered an inattentive response	Section 3.11	2
Total # of Invalid Survey Records Excluded From Data Analysis		341

<sup>15</sup> 8 surveys were submitted from staff members where rank/grade was outside the target population.



Upon removing the 341 surveys records, the research data analysis (utilizing SPSS Version 21) was initiated. All data sources files were based on the final survey response counts as outlined in Table 33. Also, Appendix J includes all (aggregate) raw data before having conducted any data manipulation (e.g., recoding of cost-benefit variables).

**Table 33.** Summary of Surveys Included for Data Analysis (on disruptive factors)

Target Population	Rank/Grade	Count (Received)	Count (Analyzed)	%
Military	O3(P)	18	14	77.78%
	O4	203	130	64.04%
	O5	264	194	73.48%
	O6	95	79	83.16%
Civilian	GS-13	565	423	74.87%
	GS-14	209	185	88.52%
	GS-15	74	70	94.59%
Total		1,428	1,095	76.68%

### 4.3 Descriptive Statistics

“Descriptive statistics are used to describe the basic features of the data in a study. They provide simple summaries about the sample and the measures. Together with simple graphics analysis, they form the basis of virtually every quantitative analysis of data” (Research Methods Knowledge Base [Descriptive Statistics], 2006). The following sub-sections provide additional details on descriptive statistics such as frequency distribution, mean, and standard deviation.

#### 4.3.1 Frequency Distributions

As part of the research analysis, there are many methods to simplify and organize the collected survey data. One of the most commonly applied techniques involves

summarizing the research data through a frequency distribution. Graphical representations such as histograms or bar charts are available options. Alternatively, utilizing a tabular format allows to include not only the actual frequency values but also statistical information such as a) percentage, b) valid percentage, and c) cumulative percentage. The frequency distributions of the target population's survey responses are summarized in Sub-Sections 4.3.1.1 to 4.3.1.5 (see Table 34 through Table 143).

#### 4.3.1.1 Frequency Distributions (Dependent Variables)

**Table 34.** Frequency Distribution – DV (BTI #1)

<b>Survey Question #1.1:</b>		Frequency	%	Valid %	Cumulative %
The phrases below describe objectives characteristic in business transformation initiatives in strategic commands, including TRADOC. Check all business transformation initiatives to which your daily work contributes in either a direct or indirect capacity.					
Answer Value: <b>Establishing Army Campaign Plan</b>					
Valid	Establishing Army Campaign Plan	350	32.0	100.0	100.0
Missing	null	745	68.0		
Total		1095	100.0		

**Table 35.** Frequency Distribution – DV (BTI #2)

<b>Survey Question #1.2:</b>		Frequency	%	Valid %	Cumulative %
The phrases below describe objectives characteristic in business transformation initiatives in strategic commands, including TRADOC. Check all business transformation initiatives to which your daily work contributes in either a direct or indirect capacity.					
Answer Value: <b>Transforming the Institutional Army</b>					
Valid	Transforming the Institutional Army	663	60.5	100.0	100.0
Missing	null	432	39.5		
Total		1095	100.0		

**Table 36. Frequency Distribution – DV (BTI #3)**

**Survey Question #1.3:**  
The phrases below describe objectives characteristic in business transformation initiatives in strategic commands, including TRADOC. Check all business transformation initiatives to which your daily work contributes in either a direct or indirect capacity.  
Answer Value: **Improving Army Business Processes**

		Frequency	%	Valid %	Cumulative %
Valid	Improving <i>Army Business Processes</i>	333	30.4	100.0	100.0
Missing	null	762	69.6		
Total		1095	100.0		

**Table 37. Frequency Distribution – DV (BTI #4)**

**Survey Question #1.4:**  
The phrases below describe objectives characteristic in business transformation initiatives in strategic commands, including TRADOC. Check all business transformation initiatives to which your daily work contributes in either a direct or indirect capacity.  
Answer Value: **Institutionalizing the Use of Quality Metrics**

		Frequency	%	Valid %	Cumulative %
Valid	Institutionalizing the <i>Use of Quality Metrics</i>	321	29.3	100.0	100.0
Missing	null	774	70.7		
Total		1095	100.0		

**Table 38. Frequency Distribution – DV (BTI #5)**

**Survey Question #1.5:**  
The phrases below describe objectives characteristic in business transformation initiatives in strategic commands, including TRADOC. Check all business transformation initiatives to which your daily work contributes in either a direct or indirect capacity.  
Answer Value: **Reforming Acquisition Processes**

		Frequency	%	Valid %	Cumulative %
Valid	Reforming <i>Acquisition Processes</i>	216	19.7	100.0	100.0
Missing	null	879	80.3		
Total		1095	100.0		

**Table 39.** Frequency Distribution – DV (BTI #6)

<b>Survey Question #1.6:</b>					
The phrases below describe objectives characteristic in business transformation initiatives in strategic commands, including TRADOC. Check all business transformation initiatives to which your daily work contributes in either a direct or indirect capacity.					
Answer Value: <b>Establishing Army's Enterprise Business Governance</b>					
		Frequency	%	Valid %	Cumulative %
Valid	Establishing Army's Enterprise Business Governance	127	11.6	100.0	100.0
Missing	null	968	88.4		
Total		1095	100.0		

**Table 40.** Frequency Distribution – DV (BTI #7)

<b>Survey Question #1.7:</b>					
The phrases below describe objectives characteristic in business transformation initiatives in strategic commands, including TRADOC. Check all business transformation initiatives to which your daily work contributes in either a direct or indirect capacity.					
Answer Value: <b>Achieving Financial Auditability</b>					
		Frequency	%	Valid %	Cumulative %
Valid	Achieving Financial Auditability	177	16.2	100.0	100.0
Missing	null	918	83.8		
Total		1095	100.0		

**Table 41.** Frequency Distribution – DV (BTI #8)

<b>Survey Question #1.8:</b>					
The phrases below describe objectives characteristic in business transformation initiatives in strategic commands, including TRADOC. Check all business transformation initiatives to which your daily work contributes in either a direct or indirect capacity.					
Answer Value: <b>Supporting Knowledge-Sharing Initiatives</b>					
		Frequency	%	Valid %	Cumulative %
Valid	Supporting Knowledge-Sharing Initiatives	549	50.1	100.0	100.0
Missing	null	546	49.9		
Total		1095	100.0		

**Table 42. Frequency Distribution – DV (BTI #9)**

**Survey Question #1.9:**  
The phrases below describe objectives characteristic in business transformation initiatives in strategic commands, including TRADOC. Check all business transformation initiatives to which your daily work contributes in either a direct or indirect capacity.  
Answer Value: **Promoting Resource-Informed Decision Making**

		Frequency	%	Valid %	Cumulative %
Valid	Promoting <i>Resource-Informed Decision Making</i>	518	47.3	100.0	100.0
Missing	null	577	52.7		
Total		1095	100.0		

**Table 43. Frequency Distribution – DV (BTI #10)**

**Survey Question #1.10:**  
The phrases below describe objectives characteristic in business transformation initiatives in strategic commands, including TRADOC. Check all business transformation initiatives to which your daily work contributes in either a direct or indirect capacity.  
Answer Value: **Conducting Leader & Workforce Development**

		Frequency	%	Valid %	Cumulative %
Valid	Conducting <i>Leader &amp; Workforce Development</i>	662	60.5	100.0	100.0
Missing	null	433	39.5		
Total		1095	100.0		

**Table 44. Frequency Distribution – DV (N/A)**

**Survey Question #1.11:**  
The phrases below describe objectives characteristic in business transformation initiatives in strategic commands, including TRADOC. Check all business transformation initiatives to which your daily work contributes in either a direct or indirect capacity.  
Answer Value: **N/A**

		Frequency	%	Valid %	Cumulative %
Valid	N/A	331	23.2	100.0	100.0
Missing	null	1095	76.8		
Total <sup>16</sup>		1426	100.0		

<sup>16</sup> According to Table 32, a total of 10 surveys were considered *invalid* and thus removed from the raw data set. 331 staff members selected “N/A” for BTIs – these records are included for purposes of this table only. Therefore, while Table 44 displays a total of 1,426, all other tables reflect a total of 1,095.

**Table 45. Frequency Distribution – DV (Other)**

<b>Survey Question #1.12:</b>					
The phrases below describe objectives characteristic in business transformation initiatives in strategic commands, including TRADOC. Check all business transformation initiatives to which your daily work contributes in either a direct or indirect capacity.					
Answer Value: <b>Other [combined summary]</b>					
		Frequency	%	Valid %	Cumulative %
Valid	Other	76	6.9	100.0	100.0
Missing	null	1019	93.1		
Total		1095	100.0		

**Table 46. Frequency Distribution – DV\_M (BTI #1 – Modified)**

<b>Survey Question #2.1:</b>					
Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were <u>modified</u> since you started working on them.					
Answer Value: <b>Establishing Army Campaign Plan</b>					
		Frequency	%	Valid %	Cumulative %
Valid	Not at all	23	2.1	6.6	6.6
	To a very small extent	70	6.4	20.0	26.6
	To a small extent	74	6.8	21.1	47.7
	To a moderate extent	101	9.2	28.9	76.6
	To a fairly great extent	40	3.7	11.4	88.0
	To a great extent	29	2.6	8.3	96.3
	To a very great extent	13	1.2	3.7	100.0
	Total	350	32.0	100.0	
Missing	0	745	68.0		
Total		1095	100.0		

**Table 47. Frequency Distribution – DV\_M (BTI #2 – Modified)**

<b>Survey Question #2.2:</b>					
Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were <u>modified</u> since you started working on them.					
Answer Value: <b>Transforming the Institutional Army</b>					
		Frequency	%	Valid %	Cumulative %
Valid	Not at all	21	1.9	3.2	3.2
	To a very small extent	111	10.1	16.7	19.9
	To a small extent	156	14.2	23.5	43.4
	To a moderate extent	212	19.4	32.0	75.4
	To a fairly great extent	91	8.3	13.7	89.1
	To a great extent	50	4.6	7.5	96.7

	To a very great extent	22	2.0	3.3	100.0
	Total	663	60.5	100.0	
Missing	0	432	39.5		
Total		1095	100.0		

**Table 48.** Frequency Distribution – DV\_M (BTI #3 – Modified)

**Survey Question #2.3:**

Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were modified since you started working on them.

Answer Value: **Improving Army Business Processes**

		Frequency	%	Valid %	Cumulative %
Valid	Not at all	20	1.8	6.0	6.0
	To a very small extent	70	6.4	21.0	27.0
	To a small extent	88	8.0	26.4	53.5
	To a moderate extent	86	7.9	25.8	79.3
	To a fairly great extent	45	4.1	13.5	92.8
	To a great extent	15	1.4	4.5	97.3
	To a very great extent	9	.8	2.7	100.0
	Total	333	30.4	100.0	
Missing	0	762	69.6		
Total		1095	100.0		

**Table 49.** Frequency Distribution – DV\_M (BTI #4 – Modified)

**Survey Question #2.4:**

Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were modified since you started working on them.

Answer Value: **Institutionalizing the Use of Quality Metrics**

		Frequency	%	Valid %	Cumulative %
Valid	Not at all	19	1.7	5.9	5.9
	To a very small extent	44	4.0	13.7	19.6
	To a small extent	78	7.1	24.3	43.9
	To a moderate extent	95	8.7	29.6	73.5
	To a fairly great extent	43	3.9	13.4	86.9
	To a great extent	29	2.6	9.0	96.0
	To a very great extent	13	1.2	4.0	100.0
	Total	321	29.3	100.0	
Missing	0	774	70.7		
Total		1095	100.0		

**Table 50.** Frequency Distribution – DV\_M (BTI #5 – Modified)

<b>Survey Question #2.5:</b>					
Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were <u>modified</u> since you started working on them.					
Answer Value: <b>Reforming Acquisition Processes</b>					
		Frequency	%	Valid %	Cumulative %
Valid	Not at all	27	2.5	12.5	12.5
	To a very small extent	36	3.3	16.7	29.2
	To a small extent	59	5.4	27.3	56.5
	To a moderate extent	42	3.8	19.4	75.9
	To a fairly great extent	30	2.7	13.9	89.8
	To a great extent	14	1.3	6.5	96.3
	To a very great extent	8	.7	3.7	100.0
	Total		216	19.7	100.0
Missing	0	879	80.3		
Total		1095	100.0		

**Table 51.** Frequency Distribution – DV\_M (BTI #6 – Modified)

<b>Survey Question #2.6:</b>					
Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were <u>modified</u> since you started working on them.					
Answer Value: <b>Establishing Army's Enterprise Business Governance</b>					
		Frequency	%	Valid %	Cumulative %
Valid	Not at all	14	1.3	11.0	11.0
	To a very small extent	25	2.3	19.7	30.7
	To a small extent	31	2.8	24.4	55.1
	To a moderate extent	36	3.3	28.3	83.5
	To a fairly great extent	13	1.2	10.2	93.7
	To a great extent	6	.5	4.7	98.4
	To a very great extent	2	.2	1.6	100.0
	Total		127	11.6	100.0
Missing	0	968	88.4		
Total		1095	100.0		



**Table 52.** Frequency Distribution – DV\_M (BTI #7 – Modified)

**Survey Question #2.7:**  
Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were modified since you started working on them.

Answer Value: **Achieving Financial Auditability**

		Frequency	%	Valid %	Cumulative %
Valid	Not at all	6	.5	3.4	3.4
	To a very small extent	28	2.6	15.8	19.2
	To a small extent	30	2.7	16.9	36.2
	To a moderate extent	52	4.7	29.4	65.5
	To a fairly great extent	27	2.5	15.3	80.8
	To a great extent	23	2.1	13.0	93.8
	To a very great extent	11	1.0	6.2	100.0
	Total	177	16.2	100.0	
Missing	0	918	83.8		
Total		1095	100.0		

**Table 53.** Frequency Distribution – DV\_M (BTI #8 – Modified)

**Survey Question #2.8:**  
Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were modified since you started working on them.

Answer Value: **Supporting Knowledge-Sharing Initiatives**

		Frequency	%	Valid %	Cumulative %
Valid	Not at all	23	2.1	4.2	4.2
	To a very small extent	67	6.1	12.2	16.4
	To a small extent	113	10.3	20.6	37.0
	To a moderate extent	182	16.6	33.2	70.1
	To a fairly great extent	94	8.6	17.1	87.2
	To a great extent	42	3.8	7.7	94.9
	To a very great extent	28	2.6	5.1	100.0
	Total	549	50.1	100.0	
Missing	0	546	49.9		
Total		1095	100.0		

**Table 54.** Frequency Distribution – DV\_M (BTI #9 – Modified)

<b>Survey Question #2.9:</b>					
Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were <u>modified</u> since you started working on them.					
Answer Value: <b>Promoting Resource-Informed Decision Making</b>					
		Frequency	%	Valid %	Cumulative %
Valid	Not at all	30	2.7	5.8	5.8
	To a very small extent	51	4.7	9.8	15.6
	To a small extent	97	8.9	18.7	34.4
	To a moderate extent	171	15.6	33.0	67.4
	To a fairly great extent	80	7.3	15.4	82.8
	To a great extent	60	5.5	11.6	94.4
	To a very great extent	29	2.6	5.6	100.0
	Total		518	47.3	100.0
Missing	0	577	52.7		
Total		1095	100.0		

**Table 55.** Frequency Distribution – DV\_M (BTI #10 – Modified)

<b>Survey Question #2.10:</b>					
Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were <u>modified</u> since you started working on them.					
Answer Value: <b>Conducting Leader &amp; Workforce Development</b>					
		Frequency	%	Valid %	Cumulative %
Valid	Not at all	21	1.9	3.2	3.2
	To a very small extent	88	8.0	13.3	16.5
	To a small extent	119	10.9	18.0	34.4
	To a moderate extent	198	18.1	29.9	64.4
	To a fairly great extent	95	8.7	14.4	78.7
	To a great extent	88	8.0	13.3	92.0
	To a very great extent	53	4.8	8.0	100.0
	Total		662	60.5	100.0
Missing	0	433	39.5		
Total		1095	100.0		

**Table 56.** Frequency Distribution – DV\_M (BTI Other – Modified)

<b>Survey Question #2.11:</b>					
Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were <u>modified</u> since you started working on them.					
Answer Value: <b>Other [combined summary]</b>					
		Frequency	%	Valid %	Cumulative %
Valid	Not at all	6	.5	7.9	7.9
	To a very small extent	2	.2	2.6	10.5
	To a small extent	6	.5	7.9	18.4
	To a moderate extent	23	2.1	30.3	48.7
	To a fairly great extent	11	1.0	14.5	63.2
	To a great extent	16	1.5	21.1	84.2
	To a very great extent	12	1.1	15.8	100.0
	Total	76	6.9	100.0	
Missing	0	1019	93.1		
Total		1095	100.0		

**Table 57.** Frequency Distribution – DV\_R (BTI #1 – Reprioritized)

<b>Survey Question #3.1:</b>					
Use the “Yes/No” drop-down menu to indicate whether any of the selected initiatives were <u>reprioritized</u> (i.e., a change in level of importance) since you started working on them:					
Answer Value: <b>Establishing Army Campaign Plan</b>					
		Frequency	%	Valid %	Cumulative %
Valid	No	237	21.6	67.7	67.7
	Yes	113	10.3	32.3	100.0
	Total	350	32.0	100.0	
Missing	0	745	68.0		
Total		1095	100.0		

**Table 58.** Frequency Distribution – DV\_R (BTI #2 – Reprioritized)

<b>Survey Question #3.2:</b>					
Use the “Yes/No” drop-down menu to indicate whether any of the selected initiatives were <u>reprioritized</u> (i.e., a change in level of importance) since you started working on them:					
Answer Value: <b>Transforming the Institutional Army</b>					
		Frequency	%	Valid %	Cumulative %
Valid	No	382	34.9	57.6	57.6
	Yes	281	25.7	42.4	100.0
	Total	663	60.5	100.0	
Missing	0	432	39.5		
Total		1095	100.0		

**Table 59.** Frequency Distribution – DV\_R (BTI #3 – Reprioritized)

<b>Survey Question #3.3:</b>					
Use the “Yes/No” drop-down menu to indicate whether any of the selected initiatives were <u>reprioritized</u> (i.e., a change in level of importance) since you started working on them:					
Answer Value: <b>Improving Army Business Processes</b>					
		Frequency	%	Valid %	Cumulative %
Valid	No	213	19.5	64.0	64.0
	Yes	120	11.0	36.0	100.0
	Total	333	30.4	100.0	
-----					
Missing	0	762	69.6		
Total		1095	100.0		

**Table 60.** Frequency Distribution – DV\_R (BTI #4 – Reprioritized)

<b>Survey Question #3.4:</b>					
Use the “Yes/No” drop-down menu to indicate whether any of the selected initiatives were <u>reprioritized</u> (i.e., a change in level of importance) since you started working on them:					
Answer Value: <b>Institutionalizing the Use of Quality Metrics</b>					
		Frequency	%	Valid %	Cumulative %
Valid	No	178	16.3	55.5	55.5
	Yes	143	13.1	44.5	100.0
	Total	321	29.3	100.0	
-----					
Missing	0	774	70.7		
Total		1095	100.0		

**Table 61.** Frequency Distribution – DV\_R (BTI #5 – Reprioritized)

<b>Survey Question #3.5:</b>					
Use the “Yes/No” drop-down menu to indicate whether any of the selected initiatives were <u>reprioritized</u> (i.e., a change in level of importance) since you started working on them:					
Answer Value: <b>Reforming Acquisition Processes</b>					
		Frequency	%	Valid %	Cumulative %
Valid	No	136	12.4	63.0	63.0
	Yes	80	7.3	37.0	100.0
	Total	216	19.7	100.0	
-----					
Missing	0	879	80.3		
Total		1095	100.0		

**Table 62.** Frequency Distribution – DV\_R (BTI #6 – Reprioritized)

		Frequency	%	Valid %	Cumulative %
Valid	No	71	6.5	55.9	55.9
	Yes	56	5.1	44.1	100.0
	Total	127	11.6	100.0	
Missing	0	968	88.4		
Total		1095	100.0		

**Table 63.** Frequency Distribution – DV\_R (BTI #7 – Reprioritized)

		Frequency	%	Valid %	Cumulative %
Valid	No	85	7.8	48.0	48.0
	Yes	92	8.4	52.0	100.0
	Total	177	16.2	100.0	
Missing	0	918	83.8		
Total		1095	100.0		

**Table 64.** Frequency Distribution – DV\_R (BTI #8 – Reprioritized)

		Frequency	%	Valid %	Cumulative %
Valid	No	313	28.6	57.0	57.0
	Yes	236	21.6	43.0	100.0
	Total	549	50.1	100.0	
Missing	0	546	49.9		
Total		1095	100.0		

**Table 65.** Frequency Distribution – DV\_R (BTI #9 – Reprioritized)

		Frequency	%	Valid %	Cumulative %
<b>Survey Question #3.9:</b>					
Use the “Yes/No” drop-down menu to indicate whether any of the selected initiatives were <u>reprioritized</u> (i.e., a change in level of importance) since you started working on them:					
Answer Value: <b>Promoting Resource-Informed Decision Making</b>					
Valid	No	296	27.0	57.1	57.1
	Yes	222	20.3	42.9	100.0
	Total	518	47.3	100.0	
Missing	0	577	52.7		
Total		1095	100.0		

**Table 66.** Frequency Distribution – DV\_R (BTI #10 – Reprioritized)

		Frequency	%	Valid %	Cumulative %
<b>Survey Question #3.10:</b>					
Use the “Yes/No” drop-down menu to indicate whether any of the selected initiatives were <u>reprioritized</u> (i.e., a change in level of importance) since you started working on them:					
Answer Value: <b>Conducting Leader &amp; Workforce Development</b>					
Valid	No	363	33.2	54.8	54.8
	Yes	299	27.3	45.2	100.0
	Total	662	60.5	100.0	
Missing	0	433	39.5		
Total		1095	100.0		

**Table 67.** Frequency Distribution – DV\_R (BTI Other – Reprioritized)

		Frequency	%	Valid %	Cumulative %
<b>Survey Question #3.11:</b>					
Use the “Yes/No” drop-down menu to indicate whether any of the selected initiatives were <u>reprioritized</u> (i.e., a change in level of importance) since you started working on them:					
Answer Value: <b>Other [combined summary]</b>					
Valid	No	26	2.4	34.2	34.2
	Yes	50	4.6	65.8	100.0
	Total	76	6.9	100.0	
Missing	0	1019	93.1		
Total		1095	100.0		

**Table 68.** Frequency Distribution – DV\_S (BTI #1 – Suspended)

**Survey Question #4.1:**  
Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them:  
Answer Value: **Establishing Army Campaign Plan**

		Frequency	%	Valid %	Cumulative %
Valid	No	235	21.5	67.1	67.1
	Yes	115	10.5	32.9	100.0
	Total	350	32.0	100.0	
Missing	0	745	68.0		
Total		1095	100.0		

**Table 69.** Frequency Distribution – DV\_S (BTI #2 – Suspended)

**Survey Question #4.2:**  
Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them:  
Answer Value: **Transforming the Institutional Army**

		Frequency	%	Valid %	Cumulative %
Valid	No	441	40.3	66.5	66.5
	Yes	222	20.3	33.5	100.0
	Total	663	60.5	100.0	
Missing	0	432	39.5		
Total		1095	100.0		

**Table 70.** Frequency Distribution – DV\_S (BTI #3 – Suspended)

**Survey Question #4.3:**  
Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them:  
Answer Value: **Improving Army Business Processes**

		Frequency	%	Valid %	Cumulative %
Valid	No	213	19.5	64.0	64.0
	Yes	120	11.0	36.0	100.0
	Total	333	30.4	100.0	
Missing	0	762	69.6		
Total		1095	100.0		

**Table 71. Frequency Distribution – DV\_S (BTI #4 – Suspended)**

**Survey Question #4.4:**  
Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them:  
Answer Value: **Institutionalizing the Use of Quality Metrics**

		Frequency	%	Valid %	Cumulative %
Valid	No	208	19.0	64.8	64.8
	Yes	113	10.3	35.2	100.0
	Total	321	29.3	100.0	
Missing	0	774	70.7		
Total		1095	100.0		

**Table 72. Frequency Distribution – DV\_S (BTI #5 – Suspended)**

**Survey Question #4.5:**  
Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them:  
Answer Value: **Reforming Acquisition Processes**

		Frequency	%	Valid %	Cumulative %
Valid	No	145	13.2	67.1	67.1
	Yes	71	6.5	32.9	100.0
	Total	216	19.7	100.0	
Missing	0	879	80.3		
Total		1095	100.0		

**Table 73. Frequency Distribution – DV\_S (BTI #6 – Suspended)**

**Survey Question #4.6:**  
Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them:  
Answer Value: **Establishing Army's Enterprise Business Governance**

		Frequency	%	Valid %	Cumulative %
Valid	No	73	6.7	57.5	57.5
	Yes	54	4.9	42.5	100.0
	Total	127	11.6	100.0	
Missing	0	968	88.4		
Total		1095	100.0		



**Table 74. Frequency Distribution – DV\_S (BTI #7 – Suspended)**

**Survey Question #4.7:**  
Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them:  
Answer Value: **Achieving Financial Auditability**

		Frequency	%	Valid %	Cumulative %
Valid	No	137	12.5	77.4	77.4
	Yes	40	3.7	22.6	100.0
	Total	177	16.2	100.0	
Missing	0	918	83.8		
Total		1095	100.0		

**Table 75. Frequency Distribution – DV\_S (BTI #8 – Suspended)**

**Survey Question #4.8:**  
Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them:  
Answer Value: **Supporting Knowledge-Sharing Initiatives**

		Frequency	%	Valid %	Cumulative %
Valid	No	343	31.3	62.5	62.5
	Yes	206	18.8	37.5	100.0
	Total	549	50.1	100.0	
Missing	0	546	49.9		
Total		1095	100.0		

**Table 76. Frequency Distribution – DV\_S (BTI #9 – Suspended)**

**Survey Question #4.9:**  
Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them:  
Answer Value: **Promoting Resource-Informed Decision Making**

		Frequency	%	Valid %	Cumulative %
Valid	No	374	34.2	72.2	72.2
	Yes	144	13.2	27.8	100.0
	Total	518	47.3	100.0	
Missing	0	577	52.7		
Total		1095	100.0		

**Table 77.** Frequency Distribution – DV\_S (BTI #10 – Suspended)

**Survey Question #4.10:**  
Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them:  
Answer Value: **Conducting Leader & Workforce Development**

		Frequency	%	Valid %	Cumulative %
Valid	No	447	40.8	67.5	67.5
	Yes	215	19.6	32.5	100.0
	Total	662	60.5	100.0	
Missing	0	433	39.5		
Total		1095	100.0		

**Table 78.** Frequency Distribution – DV\_S (BTI Other – Suspended)

**Survey Question #4.11:**  
Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them:  
Answer Value: **Other [combined summary]**

		Frequency	%	Valid %	Cumulative %
Valid	No	51	4.7	67.1	67.1
	Yes	25	2.3	32.9	100.0
	Total	76	6.9	100.0	
Missing	0	1019	93.1		
Total		1095	100.0		

**Table 79.** Frequency Distribution – DV\_D (BTI #1 – Discontinued)

**Survey Question #5.1:**  
Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them:  
Answer Value: **Establishing Army Campaign Plan**

		Frequency	%	Valid %	Cumulative %
Valid	No	344	31.4	98.3	98.3
	Yes	6	.5	1.7	100.0
	Total	350	32.0	100.0	
Missing	0	745	68.0		
Total		1095	100.0		

**Table 80.** Frequency Distribution – DV\_D (BTI #2 – Discontinued)

**Survey Question #5.2:**  
Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them:  
Answer Value: **Transforming the *Institutional Army***

		Frequency	%	Valid %	Cumulative %
Valid	No	653	59.6	98.5	98.5
	Yes	10	.9	1.5	100.0
	Total	663	60.5	100.0	
Missing	0	432	39.5		
Total		1095	100.0		

**Table 81.** Frequency Distribution – DV\_D (BTI #3 – Discontinued)

**Survey Question #5.3:**  
Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them:  
Answer Value: **Improving *Army Business Processes***

		Frequency	%	Valid %	Cumulative %
Valid	No	315	28.8	94.6	94.6
	Yes	18	1.6	5.4	100.0
	Total	333	30.4	100.0	
Missing	0	762	69.6		
Total		1095	100.0		

**Table 82.** Frequency Distribution – DV\_D (BTI #4 – Discontinued)

**Survey Question #5.4:**  
Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them:  
Answer Value: **Institutionalizing the *Use of Quality Metrics***

		Frequency	%	Valid %	Cumulative %
Valid	No	309	28.2	96.6	96.6
	Yes	11	1.0	3.4	100.0
	Total	320	29.2	100.0	
Missing	0	775	70.8		
Total		1095	100.0		

**Table 83.** Frequency Distribution – DV\_D (BTI #5 – Discontinued)

**Survey Question #5.5:**  
Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them:  
Answer Value: **Reforming Acquisition Processes**

		Frequency	%	Valid %	Cumulative %
Valid	No	209	19.1	96.8	96.8
	Yes	7	.6	3.2	100.0
	Total	216	19.7	100.0	
Missing	0	879	80.3		
Total		1095	100.0		

**Table 84.** Frequency Distribution – DV\_D (BTI #6 – Discontinued)

**Survey Question #5.6:**  
Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them:  
Answer Value: **Establishing Army's Enterprise Business Governance**

		Frequency	%	Valid %	Cumulative %
Valid	No	117	10.7	92.9	92.9
	Yes	9	.8	7.1	100.0
	Total	126	11.5	100.0	
Missing	0	969	88.5		
Total		1095	100.0		

**Table 85.** Frequency Distribution – DV\_D (BTI #7 – Discontinued)

**Survey Question #5.7:**  
Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them:  
Answer Value: **Achieving Financial Auditability**

		Frequency	%	Valid %	Cumulative %
Valid	No	170	15.5	96.6	96.6
	Yes	6	.5	3.4	100.0
	Total	176	16.1	100.0	
Missing	0	919	83.9		
Total		1095	100.0		

**Table 86.** Frequency Distribution – DV\_D (BTI #8 – Discontinued)

**Survey Question #5.8:**  
Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them:  
Answer Value: **Supporting Knowledge-Sharing Initiatives**

		Frequency	%	Valid %	Cumulative %
Valid	No	536	48.9	97.8	97.8
	Yes	12	1.1	2.2	100.0
	Total	548	50.0	100.0	
Missing	0	547	50.0		
Total		1095	100.0		

**Table 87.** Frequency Distribution – DV\_D (BTI #9 – Discontinued)

**Survey Question #5.9:**  
Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them:  
Answer Value: **Promoting Resource-Informed Decision Making**

		Frequency	%	Valid %	Cumulative %
Valid	No	504	46.0	97.3	97.3
	Yes	14	1.3	2.7	100.0
	Total	518	47.3	100.0	
Missing	0	577	52.7		
Total		1095	100.0		

**Table 88.** Frequency Distribution – DV\_D (BTI #10 – Discontinued)

**Survey Question #5.10:**  
Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them:  
Answer Value: **Conducting Leader & Workforce Development**

		Frequency	%	Valid %	Cumulative %
Valid	No	649	59.3	98.0	98.0
	Yes	13	1.2	2.0	100.0
	Total	662	60.5	100.0	
Missing	0	433	39.5		
Total		1095	100.0		

**Table 89.** Frequency Distribution – DV\_D (BTI Other – Discontinued)

<b>Survey Question #5.11:</b>					
Indicate whether any of the selected initiatives were <u>discontinued</u> (i.e., permanently stopped) since you started working on them:					
Answer Value: <b>Other</b> [combined summary]					
		Frequency	%	Valid %	Cumulative %
Valid	No	70	6.4	92.1	92.1
	Yes	6	.5	7.9	100.0
	Total	76	6.9	100.0	
Missing	0	1019	93.1		
Total		1095	100.0		

## 4.3.1.2 Frequency Distributions (Independent Variables)

**Table 90.** Frequency Distribution – IV\_LT\_1 (Number of Generals)

<b>Survey Question #6:</b>					
Select the number of Commanding Generals (CGs) under whom you have served/worked at TRADOC.					
		Frequency	%	Valid %	Cumulative %
Valid	1	252	23.0	23.0	23.0
	2	187	17.1	17.1	40.1
	3	169	15.4	15.4	55.5
	4	156	14.2	14.2	69.8
	5 or more	331	30.2	30.2	100.0
	Total	1095	100.0	100.0	

**Table 91.** Frequency Distribution – IV\_LT\_2 (Commander's Intent)

<b>Survey Question #7:</b>					
A change of your CG results in a change in <i>commander's intent</i> .					
		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	36	3.3	3.4	3.4
	Moderately disagree	46	4.2	4.4	7.8
	Slightly disagree	30	2.7	2.8	10.6
	Neither agree nor disagree	94	8.6	8.9	19.5
	Slightly agree	244	22.3	23.1	42.6
	Moderately agree	332	30.3	31.4	74.1
	Strongly agree	274	25.0	25.9	100.0
	Total	1056	96.4	100.0	
Missing	I don't know the answer	39	3.6		
Total		1095	100.0		

**Table 92.** Frequency Distribution – IV\_LT\_3 (Re-evaluation Unit Goals)

<b>Survey Question #8:</b>					
A change of your CG requires re-evaluation of your <i>unit's goals</i> .					
		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	55	5.0	5.2	5.2
	Moderately disagree	71	6.5	6.7	11.9
	Slightly disagree	57	5.2	5.4	17.3
	Neither agree nor disagree	107	9.8	10.1	27.4
	Slightly agree	251	22.9	23.7	51.0
	Moderately agree	291	26.6	27.5	78.5
	Strongly agree	228	20.8	21.5	100.0
	Total	1060	96.8	100.0	
Missing	I don't know the answer	35	3.2		

**Survey Question #8:**A change of your CG requires re-evaluation of your *unit's goals*.

	Frequency	%	Valid %	Cumulative %
Total	1095	100.0		

**Table 93.** Frequency Distribution – IV\_LT\_4 (Re-evaluation Priorities)**Survey Question #9:**A change of your CG requires re-evaluation of your *unit's priorities*.

		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	50	4.6	4.7	4.7
	Moderately disagree	55	5.0	5.2	9.9
	Slightly disagree	37	3.4	3.5	13.4
	Neither agree nor disagree	74	6.8	7.0	20.4
	Slightly agree	236	21.6	22.3	42.6
	Moderately agree	308	28.1	29.1	71.7
	Strongly agree	300	27.4	28.3	100.0
	Total	1060	96.8	100.0	
Missing	I don't know the answer	35	3.2		
Total		1095	100.0		

**Table 94.** Frequency Distribution – IV\_LT\_5 (Changes in OE)**Survey Question #10:**

We are in an uncertain and unpredictable operational environment.

		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	24	2.2	2.2	2.2
	Moderately disagree	32	2.9	2.9	5.1
	Slightly disagree	30	2.7	2.7	7.9
	Neither agree nor disagree	27	2.5	2.5	10.4
	Slightly agree	141	12.9	12.9	23.3
	Moderately agree	244	22.3	22.4	45.6
	Strongly agree	593	54.2	54.4	100.0
	Total	1091	99.6	100.0	
Missing	I don't know the answer	4	.4		
Total		1095	100.0		

**Table 95.** Frequency Distribution – IV\_LT\_6 (Changes in Regulations)**Survey Question #11:**The CG enforces frequent changes in the *regulations* we need to follow.

		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	95	8.7	9.1	9.1
	Moderately disagree	117	10.7	11.2	20.3



**Survey Question #11:**The CG enforces frequent changes in the *regulations* we need to follow.

		Frequency	%	Valid %	Cumulative %
	Slightly disagree	94	8.6	9.0	29.3
	Neither agree nor disagree	368	33.6	35.2	64.5
	Slightly agree	170	15.5	16.3	80.8
	Moderately agree	134	12.2	12.8	93.6
	Strongly agree	67	6.1	6.4	100.0
	Total	1045	95.4	100.0	
Missing	I don't know the answer	50	4.6		
Total		1095	100.0		

**Table 96.** Frequency Distribution – IV\_LT\_7 (Changes in Policies)**Survey Question #12:**The CG implements frequent changes in the *policies* we need to follow.

		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	78	7.1	7.4	7.4
	Moderately disagree	119	10.9	11.2	18.6
	Slightly disagree	97	8.9	9.2	27.7
	Neither agree nor disagree	305	27.9	28.8	56.5
	Slightly agree	222	20.3	20.9	77.5
	Moderately agree	161	14.7	15.2	92.6
	Strongly agree	78	7.1	7.4	100.0
	Total	1060	96.8	100.0	
Missing	I don't know the answer	35	3.2		
Total		1095	100.0		

**Table 97.** Frequency Distribution – IV\_LT\_8 (Fluctuating Guidance)**Survey Question #13:**We receive *fluctuating guidance* from the CG.

		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	189	17.3	17.8	17.8
	Moderately disagree	210	19.2	19.8	37.5
	Slightly disagree	114	10.4	10.7	48.3
	Neither agree nor disagree	291	26.6	27.4	75.6
	Slightly agree	120	11.0	11.3	86.9
	Moderately agree	80	7.3	7.5	94.4
	Strongly agree	59	5.4	5.6	100.0
	Total	1063	97.1	100.0	
Missing	I don't know the answer	32	2.9		
Total		1095	100.0		

**Table 98.** Frequency Distribution – IV\_RBT\_1 (Knowledge/Info Sharing)

<b>Survey Question #14:</b>					
We tend not to share knowledge and/or information.					
		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	158	14.4	14.5	14.5
	Moderately disagree	169	15.4	15.5	30.0
	Slightly disagree	151	13.8	13.9	43.9
	Neither agree nor disagree	78	7.1	7.2	51.0
	Slightly agree	224	20.5	20.6	71.6
	Moderately agree	174	15.9	16.0	87.5
	Strongly agree	136	12.4	12.5	100.0
	Total	1090	99.5	100.0	
Missing	I don't know the answer	5	.5		
Total		1095	100.0		

**Table 99.** Frequency Distribution – IV\_RBT\_2 (Increase Collaboration)

<b>Survey Question #15:</b>					
Effective efforts are made by senior leadership to increase collaboration among TRADOC staff. <sup>17</sup>					
		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	89	8.1	8.5	8.5
	Moderately disagree	137	12.5	13.0	21.5
	Slightly disagree	125	11.4	11.9	33.4
	Neither agree nor disagree	182	16.6	17.3	50.8
	Slightly agree	199	18.2	19.0	69.7
	Moderately agree	224	20.5	21.3	91.0
	Strongly agree	94	8.6	9.0	100.0
	Total	1050	95.9	100.0	
Missing	I don't know the answer	45	4.1		
Total		1095	100.0		

**Table 100.** Frequency Distribution – IV\_RBT\_3 (Embrace Collaboration)

<b>Survey Question #16:</b>					
We embrace collaboration with colleagues. <sup>17</sup>					
		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	65	5.9	6.0	6.0
	Moderately disagree	91	8.3	8.4	14.3
	Slightly disagree	117	10.7	10.7	25.1
	Neither agree nor disagree	116	10.6	10.7	35.7
	Slightly agree	249	22.7	22.9	58.6

<sup>17</sup> Prior to execution of inferential statistics, *reverse scoring* was applied to this question stem. See Appendix I for additional details.

<b>Survey Question #16:</b>					
We embrace collaboration with colleagues. <sup>17</sup>		Frequency	%	Valid %	Cumulative %
	Moderately agree	279	25.5	25.6	84.2
	Strongly agree	172	15.7	15.8	100.0
	Total	1089	99.5	100.0	
Missing	I don't know the answer	6	.5		
Total		1095	100.0		

**Table 101.** Frequency Distribution – IV\_RBT\_4 (Prefer Status Quo)

<b>Survey Question #17:</b>					
As far as daily work is concerned, we prefer the status quo in the ways we work.		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	84	7.7	7.7	7.7
	Moderately disagree	163	14.9	14.9	22.6
	Slightly disagree	190	17.4	17.4	40.1
	Neither agree nor disagree	162	14.8	14.8	54.9
	Slightly agree	224	20.5	20.5	75.4
	Moderately agree	169	15.4	15.5	90.9
	Strongly agree	99	9.0	9.1	100.0
	Total	1091	99.6	100.0	
Missing	I don't know the answer	4	.4		
Total		1095	100.0		

**Table 102.** Frequency Distribution – IV\_RBT\_5 (Mission Performance)

<b>Survey Question #18:</b>					
TRADOC senior leadership's proposed changes to the ways we perform our daily work will improve mission performance outcomes. <sup>17</sup>		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	54	4.9	5.3	5.3
	Moderately disagree	95	8.7	9.4	14.8
	Slightly disagree	118	10.8	11.7	26.4
	Neither agree nor disagree	376	34.3	37.2	63.7
	Slightly agree	187	17.1	18.5	82.2
	Moderately agree	143	13.1	14.2	96.3
	Strongly agree	37	3.4	3.7	100.0
	Total	1010	92.2	100.0	
Missing	I don't know the answer	85	7.8		
Total		1095	100.0		

**Table 103.** Frequency Distribution – IV\_RBT\_6 (Adopt Mandated Change)

<b>Survey Question #19:</b>					
We readily adopt mandated changes to the ways we do daily work. <sup>17</sup>		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	66	6.0	6.1	6.1
	Moderately disagree	103	9.4	9.6	15.7
	Slightly disagree	187	17.1	17.3	33.0
	Neither agree nor disagree	186	17.0	17.3	50.3
	Slightly agree	243	22.2	22.5	72.8
	Moderately agree	204	18.6	18.9	91.7
	Strongly agree	89	8.1	8.3	100.0
	Total	1078	98.4	100.0	
Missing	I don't know the answer	17	1.6		
Total		1095	100.0		

**Table 104.** Frequency Distribution – IV\_RBT\_7 (Changes in Work)

<b>Survey Question #20:</b>					
Changes in the commander's intent cause changes in the way we work.		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	26	2.4	2.4	2.4
	Moderately disagree	65	5.9	6.0	8.4
	Slightly disagree	92	8.4	8.5	17.0
	Neither agree nor disagree	156	14.2	14.5	31.4
	Slightly agree	371	33.9	34.4	65.9
	Moderately agree	238	21.7	22.1	87.9
	Strongly agree	130	11.9	12.1	100.0
	Total	1078	98.4	100.0	
Missing	I don't know the answer	17	1.6		
Total		1095	100.0		

**Table 105.** Frequency Distribution – IV\_RBT\_8 (Unwelcome Changes)

<b>Survey Question #21:</b>					
Changes in the organization are <i>unwelcome</i> .		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	114	10.4	10.4	10.4
	Moderately disagree	202	18.4	18.5	29.0
	Slightly disagree	193	17.6	17.7	46.7
	Neither agree nor disagree	190	17.4	17.4	64.1
	Slightly agree	198	18.1	18.1	82.2
	Moderately agree	102	9.3	9.3	91.6
	Strongly agree	92	8.4	8.4	100.0
	Total	1091	99.6	100.0	

<b>Survey Question #21:</b> Changes in the organization are <i>unwelcome</i> .		Frequency	%	Valid %	Cumulative %
Missing	I don't know the answer	4	.4		
Total		1095	100.0		

**Table 106.** Frequency Distribution – IV\_RBT\_9 (Unnecessary Changes)

<b>Survey Question #22:</b> Changes in the organization are <i>unnecessary</i> . <sup>17</sup>		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	298	27.2	27.3	27.3
	Moderately disagree	245	22.4	22.4	49.7
	Slightly disagree	237	21.6	21.7	71.4
	Neither agree nor disagree	157	14.3	14.4	85.8
	Slightly agree	85	7.8	7.8	93.6
	Moderately agree	47	4.3	4.3	97.9
	Strongly agree	23	2.1	2.1	100.0
Total		1092	99.7	100.0	
Missing	I don't know the answer	3	.3		
Total		1095	100.0		

**Table 107.** Frequency Distribution – IV\_LAMC\_1 (Loss of Manpower)

<b>Survey Question #23:</b> Process efficiencies which have been implemented resulted in <i>loss of manpower</i> .		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	42	3.8	4.2	4.2
	Moderately disagree	65	5.9	6.4	10.6
	Slightly disagree	110	10.0	10.9	21.5
	Neither agree nor disagree	259	23.7	25.7	47.2
	Slightly agree	229	20.9	22.7	69.9
	Moderately agree	159	14.5	15.8	85.7
	Strongly agree	144	13.2	14.3	100.0
Total		1008	92.1	100.0	
Missing	I don't know the answer	87	7.9		
Total		1095	100.0		

**Table 108.** Frequency Distribution – IV\_LAMC\_2 (Loss of Funding)

<b>Survey Question #24:</b> Process efficiencies which have been implemented resulted in <i>loss of funding</i> .		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	28	2.6	2.8	2.8

<b>Survey Question #24:</b>					
Process efficiencies which have been implemented resulted in <i>loss of funding</i> .					
		Frequency	%	Valid %	Cumulative %
	Moderately disagree	58	5.3	5.8	8.7
	Slightly disagree	91	8.3	9.2	17.8
	Neither agree nor disagree	300	27.4	30.2	48.1
	Slightly agree	231	21.1	23.3	71.4
	Moderately agree	160	14.6	16.1	87.5
	Strongly agree	124	11.3	12.5	100.0
	Total	992	90.6	100.0	
Missing	I don't know the answer	103	9.4		
Total		1095	100.0		

**Table 109.** Frequency Distribution – IV\_LAMC\_3 (Unwillingness to Adopt)

<b>Survey Question #25:</b>					
Process efficiencies which have been implemented result in an unwillingness to adopt future process improvement efforts.					
		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	48	4.4	4.8	4.8
	Moderately disagree	105	9.6	10.4	15.2
	Slightly disagree	122	11.1	12.1	27.3
	Neither agree nor disagree	337	30.8	33.4	60.7
	Slightly agree	222	20.3	22.0	82.7
	Moderately agree	109	10.0	10.8	93.5
	Strongly agree	66	6.0	6.5	100.0
	Total	1009	92.1	100.0	
Missing	I don't know the answer	86	7.9		
Total		1095	100.0		

**Table 110.** Frequency Distribution – IV\_LAMC\_4 (Encourage Feedback)

<b>Survey Question #26:</b>					
Efforts are made by TRADOC's senior leadership to encourage <i>open feedback</i> throughout the chain of command. <sup>17</sup>					
		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	102	9.3	9.8	9.8
	Moderately disagree	107	9.8	10.2	20.0
	Slightly disagree	109	10.0	10.4	30.4
	Neither agree nor disagree	184	16.8	17.6	48.0
	Slightly agree	227	20.7	21.7	69.8
	Moderately agree	212	19.4	20.3	90.0
	Strongly agree	104	9.5	10.0	100.0
	Total	1045	95.4	100.0	
Missing	I don't know the answer	50	4.6		
Total		1095	100.0		

**Table 111.** Frequency Distribution – IV\_LAMC\_5 (Convey Feedback)

<b>Survey Question #27:</b>					
Feedback/disagreement to proposed changes is <i>conveyed</i> to TRADOC's senior leadership. <sup>17</sup>		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	135	12.3	13.8	13.8
	Moderately disagree	140	12.8	14.3	28.0
	Slightly disagree	133	12.1	13.6	41.6
	Neither agree nor disagree	297	27.1	30.3	71.9
	Slightly agree	146	13.3	14.9	86.7
	Moderately agree	108	9.9	11.0	97.8
	Strongly agree	22	2.0	2.2	100.0
Total		981	89.6	100.0	
Missing	I don't know the answer	114	10.4		
Total		1095	100.0		

**Table 112.** Frequency Distribution – IV\_LAMC\_6 (Consider Feedback)

<b>Survey Question #28:</b>					
Feedback/disagreement to proposed changes is <i>considered</i> by TRADOC's senior leadership. <sup>17</sup>		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	93	8.5	9.7	9.7
	Moderately disagree	85	7.8	8.9	18.5
	Slightly disagree	95	8.7	9.9	28.4
	Neither agree nor disagree	398	36.3	41.5	69.9
	Slightly agree	146	13.3	15.2	85.1
	Moderately agree	115	10.5	12.0	97.1
	Strongly agree	28	2.6	2.9	100.0
Total		960	87.7	100.0	
Missing	I don't know the answer	135	12.3		
Total		1095	100.0		

## 4.3.1.3 Frequency Distributions (Confirmatory Question)

**Table 113.** Frequency Distribution – Confirmatory Question (BT)

<b>Survey Question #29-1:</b>					
TRADOC is involved in implementing business transformation initiatives. <sup>17</sup>		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	28	2.6	2.8	2.8
	Moderately disagree	39	3.6	3.8	6.6
	Slightly disagree	48	4.4	4.7	11.3
	Neither agree nor disagree	256	23.4	25.2	36.5
	Slightly agree	261	23.8	25.7	62.1
	Moderately agree	260	23.7	25.6	87.7
	Strongly agree	125	11.4	12.3	100.0
	Total	1017	92.9	100.0	
Missing	I don't know the answer	78	7.1		
Total		1095	100.0		

**Table 114.** Frequency Distribution – Confirmatory Question (BTI = N/A)<sup>18</sup>

<b>Survey Question #29-2:</b>					
TRADOC is involved in implementing business transformation initiatives.		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	10	3.0	3.7	3.7
	Moderately disagree	10	3.0	3.7	7.5
	Slightly disagree	15	4.5	5.6	13.1
	Neither agree nor disagree	121	36.6	45.1	58.2
	Slightly agree	51	15.4	19.0	77.2
	Moderately agree	46	13.9	17.2	94.4
	Strongly agree	15	4.5	5.6	100.0
	Total	268	81.0	100.0	
Missing	I don't know the answer	63	19.0		
Total		331	100.0		

<sup>18</sup> 331 staff members indicated they do *not* support any BTIs within TRADOC. At the same time, 41.8% [(51+46+15)/268] of those staff members believe the command itself is engaged in business transformation activities.



## 4.3.1.4 Frequency Distribution (Optional Comment)

**Table 115.** Frequency Distribution – Optional Comment

<b>Survey Question #30:</b>					
If applicable, what could TRADOC do differently to improve the implementation of business transformation initiatives?					
<i>[Frequency distribution/answer values were derived based on qualitative analysis]<sup>19</sup></i>					
		Frequency	%	Valid %	Cumulative %
Valid	[Comment not applicable to BTI]	63	13.0	13.0	13.0
	BTI process leadership	17	3.5	3.5	16.5
	Bureaucratic complexity and paralysis	32	6.6	6.6	23.1
	Communications/knowledge-sharing	90	18.6	18.6	41.7
	Cross-organization coordination and collaboration	25	5.2	5.2	46.9
	Effective/efficient operations	73	15.1	15.1	62.0
	Fact-based decision-making	7	1.4	1.4	63.4
	Fiscal responsibility	6	1.2	1.2	64.7
	Lack of staff willingness to address perceived problems	4	0.8	0.8	65.5
	Leadership out of touch	4	0.8	0.8	66.3
	Leadership support	5	1.0	1.0	67.4
	Leadership turbulence	2	0.4	0.4	67.8
	Metrics	4	0.8	0.8	68.6
	Need for analysis/planning	25	5.2	5.2	73.8
	Regulatory and budgetary constraints/influences	17	3.5	3.5	77.3
	Resistance to change	14	2.9	2.9	80.2
	Reward system for BTI requires changes	3	0.6	0.6	80.8
	Staff consulted in BTI implementation decisions	53	11.0	11.0	91.7
	Understanding of the organization/environment/goals	33	6.8	6.8	98.6
	Unpredictable instability	2	0.4	0.4	99.0
	Workforce education	5	1.0	1.0	100.0
	<b>Total</b>	<b>484</b>	<b>100.0</b>	<b>100.0</b>	

<sup>19</sup> Evaluating the qualitative and optional comments/feedback was conducted with the assistance of two TRADOC staff members (Chief Knowledge Office). Their professional expertise lies within the fields of both organizational/industrial psychology and operations research (OR). Additional details, including operational definitions, are provided in Appendix M.

## 4.3.1.5 Frequency Distributions (Demographics)

**Table 116.** Frequency Distribution – Demographics (Branch)

<b>Survey Question #31:</b>					
While on active duty, what is/was your military branch? Select "N/A" if you have not served on active duty.		Frequency	%	Valid %	Cumulative %
Valid	Air Force	29	2.6	2.6	2.6
	Army	938	85.7	85.7	88.3
	Marines	9	.8	.8	89.1
	Navy	11	1.0	1.0	90.1
	Other	1	.1	.1	90.2
	N/A [i.e., no active duty]	107	9.8	9.8	100.0
	Total	1095	100.0	100.0	

**Table 117.** Frequency Distribution – Demographics (Rank-Grade)

<b>Survey Question #32:</b>					
Select your current military rank or civilian grade.		Frequency	%	Valid %	Cumulative %
Valid	O3(P)	14	1.3	1.3	1.3
	O4	130	11.9	11.9	13.2
	O5	194	17.7	17.7	30.9
	O6	79	7.2	7.2	38.1
	GS-13	423	38.6	38.6	76.7
	GS-14	185	16.9	16.9	93.6
	GS-15	70	6.4	6.4	100.0
	Total	1095	100.0	100.0	

**Table 118.** Frequency Distribution – Demographics (Military vs. Civilian)

<b>Derived Survey Question #32*:</b>					
<i>[Answer values for question Q32* were derived from Q32 answer values]</i>		Frequency	%	Valid %	Cumulative %
Valid	Military	417	38.1	38.1	38.1
	Civilian	678	61.9	61.9	100.0
	Total	1095	100.0	100.0	

**Table 119.** Frequency Distribution – Demographics (Years – Active Duty)

<b>Survey Question #33:</b>					
While on active duty, how many years have you served in the military? Select "N/A" if you have not served on active duty.		Frequency	%	Valid %	Cumulative %
Valid	1 to 5	34	3.1	3.1	3.1
	6 to 10	59	5.4	5.4	8.5
	11 to 15	100	9.1	9.1	17.6
	16 to 20	160	14.6	14.6	32.2
	More than 20	630	57.5	57.5	89.8
	N/A [i.e., no active duty]	112	10.2	10.2	100.0
	Total	1095	100.0	100.0	

**Table 120.** Frequency Distribution – Demographics (Mil/Civ – Years Military)

<b>Derived Survey Question #33*:</b>					
<i>[Answer values for question Q33* were derived from Q32 &amp; Q33 answer values]</i>		Frequency	%	Valid %	Cumulative %
Valid	Mil (1 to 5 years of military exp.)	1	.1	.1	.1
	Mil (6 to 10 years of military exp.)	23	2.1	2.1	2.2
	Mil (11 to 15 years of military exp.)	63	5.8	5.8	7.9
	Mil (16 to 20 years of military exp.)	109	10.0	10.0	17.9
	Mil (20+ years of military exp.)	221	20.2	20.2	38.1
	Civ (no military exp.)	112	10.2	10.2	48.3
	Civ (1 to 5 years of military exp.)	33	3.0	3.0	51.3
	Civ (6 to 10 years of military exp.)	36	3.3	3.3	54.6
	Civ (11 to 15 years of military exp.)	37	3.4	3.4	58.0
	Civ (16 to 20 years of military exp.)	51	4.7	4.7	62.6
	Civ (20+ years of military exp.)	409	37.4	37.4	100.0
	Total	1095	100.0	100.0	

**Table 121.** Frequency Distribution – Demographics (Current Command)

<b>Survey Question #34:</b>					
Select your current organization.		Frequency	%	Valid %	Cumulative %
Valid	TRADOC HQ	148	13.5	13.5	13.5
	Asymmetric Warfare Group	13	1.2	1.2	14.7
	Army Capabilities Integration Center	95	8.7	8.7	23.4
	Cadet Command	57	5.2	5.2	28.6
	Combined Arms Center	203	18.5	18.5	47.1
	Combined Arms Support Command	57	5.2	5.2	52.3
	Initial Military Training	19	1.7	1.7	54.1
	Recruiting Command	32	2.9	2.9	57.0

**Survey Question #34:**

Select your current organization.

	Frequency	%	Valid %	Cumulative %
Aviation CoE	42	3.8	3.8	60.8
Fires CoE	50	4.6	4.6	65.4
Initial Military Training CoE	10	.9	0.9	66.3
Intelligence CoE	48	4.4	4.4	70.7
Maneuver CoE	54	4.9	4.9	75.6
Maneuver Support CoE	57	5.2	5.2	80.8
Mission Command CoE	44	4.0	4.0	84.8
Signal CoE	26	2.4	2.4	87.2
Sustainment CoE	43	3.9	3.9	91.1
Other (see Table 122)	97	8.9	8.9	100.0
Total	1095	100.0	100.0	

**Table 122.** Frequency Distribution – Demographics (Current Command – “Other”)**Survey Question #34\*:***[Answer values for question Q34\* were derived from Q34-Other answer values]*

	Frequency	%	Valid %	Cumulative %
Valid Army Management Staff College (AMSC)	3	3.1	3.1	3.1
Army Training Support Center (ATSC)	3	3.1	3.1	6.2
Brigade Modernization Command (BMC)	5	5.2	5.2	11.3
Defense Language Institute Foreign Language Center (DLIFLC)	2	2.1	2.1	13.4
Deployed	2	2.1	2.1	15.5
Joint Center of Excellence (JCoE)	1	1	1	16.5
Joint Staff (J7)	1	1	1	17.5
TRADOC Analysis Center (TRAC)	41	42.3	42.3	59.8
TRADOC Capability Management (TCM)	1	1	1	60.8
TRADOC Intelligence Support Activity (TRISA)	3	3.1	3.1	63.9
Training Operations Management Activity (TOMA)	2	2.1	2.1	66
Unidentified	2	2.1	2.1	68
US Army Aeronautical Services Agency (USAASA)	3	3.1	3.1	71.1
US Army Chaplain Center and School (USACHCS)	6	6.2	6.2	77.3
US Army Human Terrain System (HTS)	1	1	1	78.4
US Army Peacekeeping &	1	1	1	79.4

**Survey Question #34\*:**

[Answer values for question Q34\* were derived from Q34-Other answer values]

	Frequency	%	Valid %	Cumulative %
Stability Operations Institute (USPKSOI)				
US Army Reserve Officers' Training Corps (ROTC)	1	1	1	80.4
US Army War College (USAWC)	19	19.6	19.6	100
Total	97	100.0	100.0	

**Table 123.** Frequency Distribution – Demographics (G1)**Survey Question #35-1:**

What G-staff function(s) have you supported at TRADOC? Check all that apply.<sup>20</sup>

Answer Value: *G-1 Personnel and Administration*

		Frequency	%	Valid %	Cumulative %
Valid	G-1 Personnel and Admin	304	27.8	100.0	100.0
Missing	null	791	72.2		
Total		1095	100.0		

**Table 124.** Frequency Distribution – Demographics (G2)**Survey Question #35-2:**

What G-staff function(s) have you supported at TRADOC? Check all that apply.<sup>20</sup>

Answer Value: *G-2 Intelligence and Security*

		Frequency	%	Valid %	Cumulative %
Valid	G-2 Intelligence and Security	257	23.5	100.0	100.0
Missing	null	838	76.5		
Total		1095	100.0		

**Table 125.** Frequency Distribution – Demographics (G3)**Survey Question #35-3:**

What G-staff function(s) have you supported at TRADOC? Check all that apply.<sup>20</sup>

Answer Value: *G-3 Operations*

		Frequency	%	Valid %	Cumulative %
Valid	G-3 Operations	694	63.4	100.0	100.0
Missing	null	401	36.6		
Total		1095	100.0		

<sup>20</sup> In the context of this research, the term "support" means *contributing work* towards assigned job functions and/or duties.

**Table 126.** Frequency Distribution – Demographics (G4)

<b>Survey Question #35-4:</b>					
What G-staff function(s) have you supported at TRADOC? Check all that apply. <sup>20</sup>					
Answer Value: <i>G-4 Logistics</i>					
		Frequency	%	Valid %	Cumulative %
Valid	G-4 Logistics	247	22.6	100.0	100.0
Missing	null	848	77.4		
Total		1095	100.0		

**Table 127.** Frequency Distribution – Demographics (G5)

<b>Survey Question #35-5:</b>					
What G-staff function(s) have you supported at TRADOC? Check all that apply. <sup>20</sup>					
Answer Value: <i>G-5 Plans</i>					
		Frequency	%	Valid %	Cumulative %
Valid	G-5 Plans	302	27.6	100.0	100.0
Missing	null	793	72.4		
Total		1095	100.0		

**Table 128.** Frequency Distribution – Demographics (G6)

<b>Survey Question #35-6:</b>					
What G-staff function(s) have you supported at TRADOC? Check all that apply. <sup>20</sup>					
Answer Value: <i>G-6 Signal</i>					
		Frequency	%	Valid %	Cumulative %
Valid	G-6 Signal	137	12.5	100.0	100.0
Missing	null	958	87.5		
Total		1095	100.0		

**Table 129.** Frequency Distribution – Demographics (G7)

<b>Survey Question #35-7:</b>					
What G-staff function(s) have you supported at TRADOC? Check all that apply. <sup>20</sup>					
Answer Value: <i>G-7 Training</i>					
		Frequency	%	Valid %	Cumulative %
Valid	G-7 Training	522	47.7	100.0	100.0
Missing	null	573	52.3		
Total		1095	100.0		

**Table 130. Frequency Distribution – Demographics (G8)**

<b>Survey Question #35-8:</b>		Frequency	%	Valid %	Cumulative %
What G-staff function(s) have you supported at TRADOC? Check all that apply. <sup>20</sup>					
Answer Value: <i>G-8 Finance and Contracts</i>					
Valid	G-8 Finance and Contracts	271	24.7	100.0	100.0
Missing	null	824	75.3		
Total		1095	100.0		

**Table 131. Frequency Distribution – Demographics (G9)**

<b>Survey Question #35-9:</b>		Frequency	%	Valid %	Cumulative %
What G-staff function(s) have you supported at TRADOC? Check all that apply. <sup>20</sup>					
Answer Value: <i>G-9 Civil Affairs</i>					
Valid	G-9 Civil Affairs	37	3.4	100.0	100.0
Missing	null	1058	96.6		
Total		1095	100.0		

**Table 132. Frequency Distribution – Demographics (Other)**

<b>Survey Question #35-10:</b>		Frequency	%	Valid %	Cumulative %
What G-staff function(s) have you supported at TRADOC? Check all that apply. <sup>20</sup>					
Answer Value: <b>Other [combined summary]</b>					
Valid	Other	199	18.2	100.0	100.0
Missing	null	896	81.8		
Total		1095	100.0		

**Table 133. Frequency Distribution – Demographics (G1 – Years)**

<b>Survey Question #36-1:</b>		Frequency	%	Valid %	Cumulative %
Based on your selection in the previous question, select the number of years that you have served/worked in each function:					
Answer Value: <i>G-1 Personnel and Administration</i>					
Valid	1 to 5	159	14.5	52.3	52.3
	6 to 10	36	3.3	11.8	64.1
	11 to 15	18	1.6	5.9	70.1
	16 to 20	4	.4	1.3	71.4
	More than 20	19	1.7	6.3	77.6
	N/A	68	6.2	22.4	100.0

	Total	304	27.8	100.0
Missing	0	791	72.2	
Total		1095	100.0	

**Table 134. Frequency Distribution – Demographics (G2 – Years)**

**Survey Question #36-2:**

Based on your selection in the previous question, select the number of years that you have served/worked in each function:

Answer Value: *G-2 Intelligence and Security*

		Frequency	%	Valid %	Cumulative %
Valid	1 to 5	109	10.0	42.4	42.4
	6 to 10	38	3.5	14.8	57.2
	11 to 15	16	1.5	6.2	63.4
	16 to 20	14	1.3	5.4	68.9
	More than 20	27	2.5	10.5	79.4
	N/A	53	4.8	20.6	100.0
	Total	257	23.5	100.0	
Missing	0	838	76.5		
Total		1095	100.0		

**Table 135. Frequency Distribution – Demographics (G3 – Years)**

**Survey Question #36-3:**

Based on your selection in the previous question, select the number of years that you have served/worked in each function:

Answer Value: *G-3 Operations*

		Frequency	%	Valid %	Cumulative %
Valid	1 to 5	338	30.9	48.7	48.7
	6 to 10	117	10.7	16.9	65.6
	11 to 15	54	4.9	7.8	73.3
	16 to 20	31	2.8	4.5	77.8
	More than 20	48	4.4	6.9	84.7
	N/A	106	9.7	15.3	100.0
	Total	694	63.4	100.0	
Missing	0	401	36.6		
Total		1095	100.0		



**Table 136.** Frequency Distribution – Demographics (G4 – Years)

<b>Survey Question #36-4:</b>					
Based on your selection in the previous question, select the number of years that you have served/worked in each function:					
Answer Value: <i>G-4 Logistics</i>					
		Frequency	%	Valid %	Cumulative %
Valid	1 to 5	108	9.9	43.7	43.7
	6 to 10	32	2.9	13.0	56.7
	11 to 15	15	1.4	6.1	62.8
	16 to 20	19	1.7	7.7	70.4
	More than 20	20	1.8	8.1	78.5
	N/A	53	4.8	21.5	100.0
Total		247	22.6	100.0	
Missing	0	848	77.4		
Total		1095	100.0		

**Table 137.** Frequency Distribution – Demographics (G5 – Years)

<b>Survey Question #36-5:</b>					
Based on your selection in the previous question, select the number of years that you have served/worked in each function:					
Answer Value: <i>G-5 Plans</i>					
		Frequency	%	Valid %	Cumulative %
Valid	1 to 5	156	14.2	51.7	51.7
	6 to 10	44	4.0	14.6	66.2
	11 to 15	28	2.6	9.3	75.5
	16 to 20	8	.7	2.6	78.1
	More than 20	16	1.5	5.3	83.4
	N/A	50	4.6	16.6	100.0
Total		302	27.6	100.0	
Missing	0	793	72.4		
Total		1095	100.0		

**Table 138.** Frequency Distribution – Demographics (G6 – Years)

<b>Survey Question #36-6:</b>					
Based on your selection in the previous question, select the number of years that you have served/worked in each function:					
Answer Value: <i>G-6 Signal</i>					
		Frequency	%	Valid %	Cumulative %
Valid	1 to 5	57	5.2	41.6	41.6
	6 to 10	14	1.3	10.2	51.8
	11 to 15	15	1.4	10.9	62.8
	16 to 20	6	.5	4.4	67.2

	More than 20	11	1.0	8.0	75.2
	N/A	34	3.1	24.8	100.0
	Total	137	12.5	100.0	
Missing	0	958	87.5		
Total		1095	100.0		

**Table 139. Frequency Distribution – Demographics (G7 – Years)**

**Survey Question #36-7:**

Based on your selection in the previous question, select the number of years that you have served/worked in each function:

Answer Value: *G-7 Training*

		Frequency	%	Valid %	Cumulative %
Valid	1 to 5	216	19.7	41.4	41.4
	6 to 10	81	7.4	15.5	56.9
	11 to 15	69	6.3	13.2	70.1
	16 to 20	29	2.6	5.6	75.7
	More than 20	50	4.6	9.6	85.2
	N/A	77	7.0	14.8	100.0
	Total	522	47.7	100.0	
Missing	0	573	52.3		
Total		1095	100.0		

**Table 140. Frequency Distribution – Demographics (G8 – Years)**

**Survey Question #36-8:**

Based on your selection in the previous question, select the number of years that you have served/worked in each function:

Answer Value: *G-8 Finance and Contracts*

		Frequency	%	Valid %	Cumulative %
Valid	1 to 5	115	10.5	42.4	42.4
	6 to 10	42	3.8	15.5	57.9
	11 to 15	26	2.4	9.6	67.5
	16 to 20	13	1.2	4.8	72.3
	More than 20	23	2.1	8.5	80.8
	N/A	52	4.7	19.2	100.0
	Total	271	24.7	100.0	
Missing	0	824	75.3		
Total		1095	100.0		

**Table 141. Frequency Distribution – Demographics (G9 – Years)**

**Survey Question #36-9:**

Based on your selection in the previous question, select the number of years that you have

served/worked in each function:  
 Answer Value: *G-9 Civil Affairs*

		Frequency	%	Valid %	Cumulative %
Valid	1 to 5	21	1.9	56.8	56.8
	6 to 10	2	.2	5.4	62.2
	11 to 15	2	.2	5.4	67.6
	16 to 20	0	.0	0.0	67.6
	More than 20	2	.2	5.4	73.0
	N/A	10	.9	27.0	100.0
	Total	37	3.4	100.0	
Missing	0	1058	96.6		
Total		1095	100.0		

**Table 142.** Frequency Distribution – Demographics (Other – Years)

**Survey Question #36-10:**

Based on your selection in the previous question, select the number of years that you have served/worked in each function:

Answer Value: **Other [combined summary]**

		Frequency	%	Valid %	Cumulative %
Valid	1 to 5	85	7.8	42.7	42.7
	6 to 10	33	3.0	16.6	59.3
	11 to 15	22	2.0	11.1	70.4
	16 to 20	3	.3	1.5	71.9
	More than 20	14	1.3	7.0	78.9
	N/A	42	3.8	21.1	100.0
	Total	199	18.2	100.0	
Missing	0	896	81.8		
Total		1095	100.0		

**Table 143.** Frequency Distribution – Demographics (Education)

**Survey Question #37:**

What is the highest level of education you have completed?

		Frequency	%	Valid %	Cumulative %
Valid	High School	2	.2	.2	.2
	Some college credit (no degree)	38	3.5	3.5	3.7
	Associate Degree	27	2.5	2.5	6.1
	Bachelor's Degree	120	11.0	11.0	17.1
	Some graduate work	128	11.7	11.7	28.8
	Master's Degree	639	58.4	58.4	87.1
	Some postgraduate work	89	8.1	8.1	95.3
	Doctoral Degree	49	4.5	4.5	99.7
	Other	3	.3	.3	100.0
	Total	1095	100.0	100.0	

#### 4.3.2 *Min | Max | Mean | Standard Deviation | Variance*

Basic descriptive statistics are minimum and maximum values, mean (i.e., average), as well as standard deviation and variance. The descriptive statistics for the dependent variables (Table 144), independent variables (Table 145), and demographics (Table 146) are provided in this section.

To obtain data for the dependent variable(s), research participants were asked to respond to five questions: *Do their daily work activities contribute – directly or indirectly – to any business transformation initiative(s) that are supported by TRADOC? Based on their experience, were any BTI requirements changed or modified? Was their level of support to any of the BTIs reprioritized? Was their support to any of the BTIs temporarily interrupted or suspended? Based on the staff member's experience, was any BTI support permanently discontinued/stopped?*<sup>21</sup>

Staff members' direct or indirect support of a business transformation initiative was captured in question #1 (where *not checked* equals 0; *checked* equals 1). Based on the min/max values for Q1\_DV (Table 144), it is evident that all BTIs have been actively supported by TRADOC. Then, for any selected BTI, subsequent questions 2 through 5 required a response either on a 7-point Likert scale (Q2\_DV\_M) or binary value selection (Q3\_DV\_R, Q4\_DV\_S, and Q5\_DV\_D).<sup>22</sup>

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<sup>21</sup> Refer to the survey instrument in Appendix H to cross-reference the actual names of the business transformation initiatives to the coded BTI values (1 through 10). Furthermore, it should be noted that all of the provided BTIs have been selected based on the *2012 Annual Report on Business Transformation*

<sup>22</sup> Question #2 (Q2\_DV\_M) – 7-point Likert scale (Gillian et al., 2010): (1) Not at all; (2) To a very small extent; (3) To a small extent; (4) To a moderate extent; (5) To a fairly great extent; (6) To a great extent; (7) To a very great extent

Table 144. Descriptive Statistics – Metrics for Dependent Variables

Metric ID	Metric	N	Min	Max	$\bar{x}$	$\sigma$	$\sigma^2$
Q1_DV	BTI # 1 (checkbox)	350	1	1	1.00	0.000	0.000
Q1_DV	BTI # 2 (checkbox)	663	1	1	1.00	0.000	0.000
Q1_DV	BTI # 3 (checkbox)	333	1	1	1.00	0.000	0.000
Q1_DV	BTI # 4 (checkbox)	321	1	1	1.00	0.000	0.000
Q1_DV	BTI # 5 (checkbox)	216	1	1	1.00	0.000	0.000
Q1_DV	BTI # 6 (checkbox)	127	1	1	1.00	0.000	0.000
Q1_DV	BTI # 7 (checkbox)	177	1	1	1.00	0.000	0.000
Q1_DV	BTI # 8 (checkbox)	549	1	1	1.00	0.000	0.000
Q1_DV	BTI # 9 (checkbox)	518	1	1	1.00	0.000	0.000
Q1_DV	BTI # 10 (checkbox)	662	1	1	1.00	0.000	0.000
Q1_DV	BTI # 11 (checkbox)	76	1	1	1.00	0.000	0.000
Q2_DV_M	BTI # 1	350	1	7	3.58	1.488	2.215
Q2_DV_M	BTI # 2	663	1	7	3.72	1.361	1.853
Q2_DV_M	BTI # 3	333	1	7	3.44	1.378	1.898
Q2_DV_M	BTI # 4	321	1	7	3.74	1.457	2.124
Q2_DV_M	BTI # 5	216	1	7	3.40	1.564	2.445
Q2_DV_M	BTI # 6	127	1	7	3.28	1.395	1.947
Q2_DV_M	BTI # 7	177	1	7	4.01	1.534	2.352
Q2_DV_M	BTI # 8	549	1	7	3.90	1.415	2.001
Q2_DV_M	BTI # 9	518	1	7	4.00	1.493	2.228
Q2_DV_M	BTI # 10	662	1	7	4.11	1.544	2.385
Q2_DV_M	BTI # 11 (Other)	76	1	7	4.67	1.700	2.890
Q3_DV_R	BTI # 1	350	1	2	1.32	.468	.219
Q3_DV_R	BTI # 2	663	1	2	1.42	.495	.245
Q3_DV_R	BTI # 3	333	1	2	1.36	.481	.231
Q3_DV_R	BTI # 4	321	1	2	1.45	.498	.248
Q3_DV_R	BTI # 5	216	1	2	1.37	.484	.234
Q3_DV_R	BTI # 6	127	1	2	1.44	.498	.248
Q3_DV_R	BTI # 7	177	1	2	1.52	.501	.251
Q3_DV_R	BTI # 8	549	1	2	1.43	.496	.246
Q3_DV_R	BTI # 9	518	1	2	1.43	.495	.245
Q3_DV_R	BTI # 10	662	1	2	1.45	.498	.248
Q3_DV_R	BTI # 11 (Other)	76	1	2	1.66	.478	.228
Q4_DV_S	BTI # 1	350	1	2	1.33	.470	.221
Q4_DV_S	BTI # 2	663	1	2	1.33	.472	.223
Q4_DV_S	BTI # 3	333	1	2	1.36	.481	.231
Q4_DV_S	BTI # 4	321	1	2	1.35	.478	.229
Q4_DV_S	BTI # 5	216	1	2	1.33	.471	.222
Q4_DV_S	BTI # 6	127	1	2	1.43	.496	.246
Q4_DV_S	BTI # 7	177	1	2	1.23	.419	.176
Q4_DV_S	BTI # 8	549	1	2	1.38	.485	.235
Q4_DV_S	BTI # 9	518	1	2	1.28	.448	.201
Q4_DV_S	BTI # 10	662	1	2	1.32	.469	.220
Q4_DV_S	BTI # 11 (Other)	76	1	2	1.33	.473	.224
Q5_DV_D	BTI # 1	350	1	2	1.02	.130	.017
Q5_DV_D	BTI # 2	663	1	2	1.02	.122	.015

Table 144. Continued.

Q5_DV_D	BTI # 3	333	1	2	1.05	.226	.051
Q5_DV_D	BTI # 4	320	1	2	1.03	.182	.033
Q5_DV_D	BTI # 5	216	1	2	1.03	.177	.032
Q5_DV_D	BTI # 6	126	1	2	1.07	.259	.067
Q5_DV_D	BTI # 7	176	1	2	1.03	.182	.033
Q5_DV_D	BTI # 8	548	1	2	1.02	.146	.021
Q5_DV_D	BTI # 9	518	1	2	1.03	.162	.026
Q5_DV_D	BTI # 10	662	1	2	1.02	.139	.019
Q5_DV_D	BTI # 11 (Other)	76	1	2	1.08	.271	.074
Valid N (listwise)		0					

**Table 145.** Descriptive Statistics – Metrics for Independent Variables (H1<sub>a</sub> – H3<sub>b</sub>)

Metric ID	Metric	N	Min	Max	$\bar{x}$	$\sigma$	$\sigma^2$
IV_LT_1	Number of Generals	1095	1	5	3.12	1.559	2.432
IV_LT_2	Commander's Intent	1056	1	7	5.42	1.522	2.318
IV_LT_3	Re-evaluation Unit Goals	1060	1	7	5.09	1.697	2.879
IV_LT_4	Re-evaluation Priorities	1060	1	7	5.37	1.648	2.717
IV_LT_5	Changes in OE	1091	1	7	6.05	1.427	2.037
IV_LT_6	Changes in Regulations	1045	1	7	4.02	1.616	2.610
IV_LT_7	Changes in Policies	1060	1	7	4.20	1.627	2.646
IV_LT_8	Fluctuating Guidance	1063	1	7	3.39	1.746	3.047
IV_RBT_1	Knowledge/Info Sharing	1090	1	7	4.02	2.008	4.034
IV_RBT_2	Increase Collaboration	1050	1	7	3.75	1.787	3.193
IV_RBT_3	Embrace Collaboration	1089	1	7	3.24	1.754	3.077
IV_RBT_4	Prefer Status Quo	1091	1	7	4.08	1.761	3.102
IV_RBT_5	Mission Performance	1010	1	7	3.89	1.430	2.045
IV_RBT_6	Adopt Mandated Change	1078	1	7	3.70	1.656	2.743
IV_RBT_7	Changes in Work	1078	1	7	4.87	1.450	2.103
IV_RBT_8	Unwelcome Changes	1091	1	7	3.76	1.766	3.118
IV_RBT_9	Unnecessary Changes	1092	1	7	5.26	1.559	2.431
IV_LAMC_1	Loss of Manpower	1008	1	7	4.61	1.587	2.519
IV_LAMC_2	Loss of Funding	992	1	7	4.64	1.476	2.179
IV_LAMC_3	Unwillingness to Adopt	1009	1	7	4.16	1.477	2.183
IV_LAMC_4	Encourage Feedback	1045	1	7	3.68	1.794	3.218
IV_LAMC_5	Convey Feedback	981	1	7	4.40	1.606	2.581
IV_LAMC_6	Consider Feedback	960	1	7	4.09	1.488	2.213
Valid N (listwise)		814					

**Table 146.** Descriptive Statistics – Metrics for Demographics

Metric ID	Metric	N	Min	Max	$\bar{x}$	$\sigma$	$\sigma^2$	
DEM_Q31 <sup>23</sup>	Branch	1095	1	6	2.40	1.221	1.492	
DEM_Q32	Rank-Grade	1095	1	7	4.46	1.481	2.192	
DEM_Q32* <sup>24</sup>	Mil-Civ Groups	1095	1	2	1.62	.486	.236	
DEM_Q33	Years Active Duty	1095	1	6	4.49	1.155	1.334	
DEM_Q33* <sup>25</sup>	Mil-Civ Experience	1095	1	11	7.59	3.084	9.509	
DEM_Q34	Current Command	1095	1	18	8.28	5.623	31.614	
DEM_Q35_1	G-1 (Yes-No)	304	1	1	1.00	0.000	0.000	
DEM_Q35_2	G-2 (Yes-No)	257	1	1	1.00	0.000	0.000	
DEM_Q35_3	G-3 (Yes-No)	694	1	1	1.00	0.000	0.000	
DEM_Q35_4	G-4 (Yes-No)	247	1	1	1.00	0.000	0.000	
DEM_Q35_5	G-5 (Yes-No)	302	1	1	1.00	0.000	0.000	
DEM_Q35_6	G-6 (Yes-No)	137	1	1	1.00	0.000	0.000	
DEM_Q35_7	G-7 (Yes-No)	522	1	1	1.00	0.000	0.000	
DEM_Q35_8	G-8 (Yes-No)	271	1	1	1.00	0.000	0.000	
DEM_Q35_9	G-9 (Yes-No)	37	1	1	1.00	0.000	0.000	
DEM_Q35_10	G-10 (Yes-No)	199	1	1	1.00	0.000	0.000	
DEM_Q36_1	G-1 (Years)	304	1	6	2.64	2.092	4.375	
DEM_Q36_2	G-2 (Years)	257	1	6	2.89	2.044	4.179	
DEM_Q36_3	G-3 (Years)	694	1	6	2.50	1.888	3.566	
DEM_Q36_4	G-4 (Years)	247	1	6	2.88	2.053	4.213	
DEM_Q36_5	G-5 (Years)	302	1	6	2.45	1.911	3.650	
DEM_Q36_6	G-6 (Years)	137	1	6	3.01	2.097	4.397	
DEM_Q36_7	G-7 (Years)	522	1	6	2.71	1.870	3.497	
DEM_Q36_8	G-8 (Years)	271	1	6	2.79	1.984	3.937	
DEM_Q36_9	G-9 (Years)	37	1	6	2.73	2.244	5.036	
DEM_Q36_10	G-10 (Years)	199	1	6	2.77	2.009	4.037	
DEM_Q37	Education	1095	1	9	5.62	1.233	1.521	
Valid N (listwise)								3

#### 4.4 Inferential Statistics

The author Timothy C. Urdan defines inferential statistics as an analysis method which allows us to “use sample data [in order] to reach some conclusion (i.e., make some inferences) about the characteristics of the larger population that the sample is supposed

<sup>23</sup> Survey response values for question #31 (Branch) are as follows: Air Force (1); Army (2); Marines (3); Navy (4); N/A (5); Other (6). Given that the survey was released within the *U.S. Army Training and Doctrine Command*, the majority of responses were anticipated to come from Army personnel. This assumption was validated given the average response value of 2.40.

<sup>24</sup> Answer values for question DEM\_Q32\* were derived from answer values for DEM\_Q32

<sup>25</sup> Answer values for question DEM\_Q33\* were derived from answer values for DEM\_Q32 & DEM\_Q33

to represent” (Urdan, 2010). There is a wide range of inferential statistical tests that should be conducted in any research project. Thus, it is argued there is no *one-size-fits-all* statistical technique which could be applied across a variety of studies. Most often though the decision as to which statistical test(s) should be considered depends on both the type of research design and the distribution of the data (The University of Arizona, 2013). As part of this decision process, it is recommended to a) validate all research assumptions, b) determine whether or not the sample size is sufficient, and c) check data for normality. The next few sections provide more information on these topics and their associated statistical techniques.

#### *4.4.1 Validation of Assumptions*

Section 3.6 outlined several research assumptions such as: 1) all collected data was based on a representative sample population within TRADOC; 2) research participants offered their professional opinions; 3) staff members provided free and honest feedback; and 4) research participants had full recollection of their daily work activities in support of business transformation initiatives.

Upon closing the data collection activity, it was determined that staff members from both TRADOC headquarters and thirty-four subordinate organizations (see question #34 in Appendix J) participated in the study. Although the research participants were active duty or civilian staff members at TRADOC, this relatively wide cross-section of distinct organizations facilitates generalizability of the research findings to similar military strategic commands in the United States. In support of confidentiality, staff members



were reminded that none of the data is traceable to a specific individual and/or function (i.e., all research data would only be reported in the aggregate).

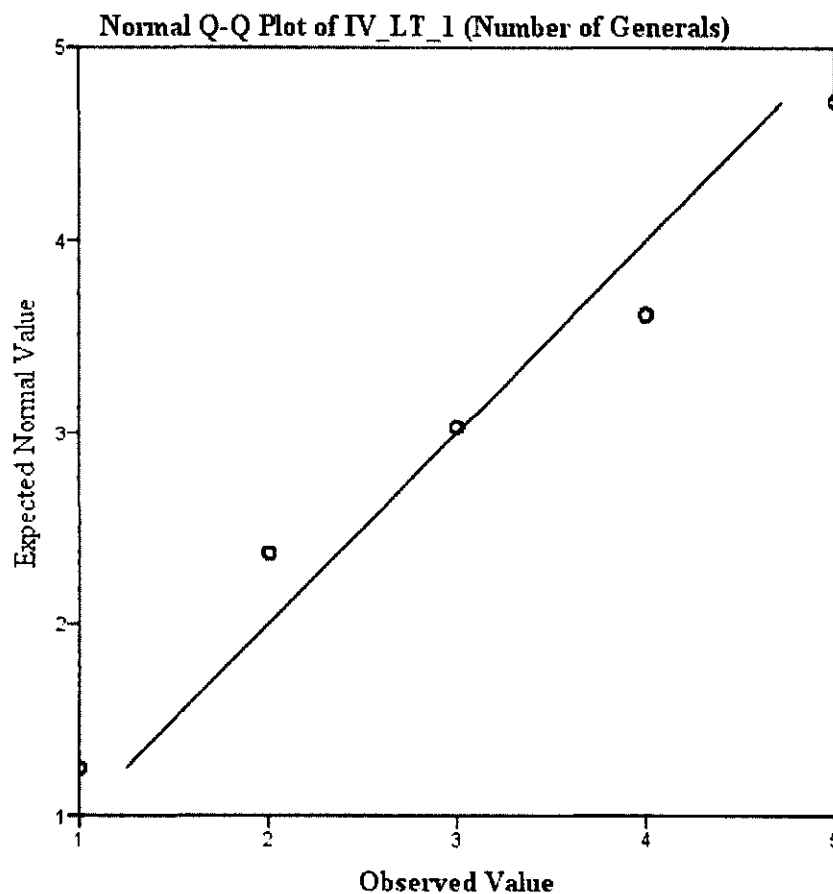
#### 4.4.2 *Sample Size*

There is a wide array of recommendations for determining an appropriate sample size within the field of behavioral sciences. Kass and Tinsley recommended 5 to 10 participants per independent variable (Kass & Tinsley, 1979). Alternatively, Tabachnick, et al. suggest to have a minimum of 300 cases when utilizing factor analysis (Tabachnick, Fidell, & Osterlind, 2001). Further, Comrey and Lee suggest the following scale pertaining to sample size: “50 – very poor; 100 – poor; 200 – fair; 300 – good; 500 – very good; 1,000 or more – excellent” (Comrey & Lee, 1992). Therefore, the total number of 1,095 received (and completed) surveys was deemed sufficiently large for conducting the subsequent research analysis.

#### 4.4.3 *Normality (of all Independent Variables)*

Many of the statistical methods in this research are based on multivariate analysis (MVA). When applying MVA, there is an underlying assumption that all variables are normally distributed. Multiple tests are available to validate this assumption. Utilizing the SPSS software, the following tests for normality were completed: 1) assessment of both *Kolmogorov-Smirnov* and *Shapiro-Wilk* tests; and 2) review of *Normal Q-Q* plots – where *Q* stands for quantile (Field, 2009).

Figure 9 shows the distribution of the variable IV\_LT\_1. If the data were to be considered normally distributed, the dots should closely fit the diagonal line – which was the case for this particular variable. Upon review of the remaining *Normal Q-Q* plots (Appendix K), it was concluded all independent variables were normally distributed.



**Figure 9.** Normality Plot – IV\_LT\_1 (Number of Generals)

The second check for normality requires the evaluation of the *Kolmogorov-Smirnov* (K-S) and *Shapiro-Wilk* (S-W) tests (Table 147). The S-W test may be applied when the sample size is 50 or less; the K-S should be utilized for a sample size greater than 50. To validate a normal distribution, a general rule suggests the *p*-value (or significance value)

shall be greater than 0.05. However, it must be recognized the K-S test is not always considered reliable. According to author Andy Field, “[this test has its] limitations because with large sample sizes it is very easy to get significant results from small deviations from normality, and so a significant test does not necessarily tell us whether the deviation from normality is enough to bias any statistical procedures that we can apply to the data” (Field, 2009).

**Table 147.** Tests of Normality (Kolmogorov-Smirnov and Shapiro-Wilk)

Metric ID	Metric	Kolmogorov-Smirnov			Shapiro-Wilk		
		Stat	df	Sig.	Stat	df	Sig.
IV_LT_1	Number of Generals	.196	814	.000	.851	814	.000
IV_LT_2	Commander's Intent	.225	814	.000	.839	814	.000
IV_LT_3	Re-evaluation Unit Goals	.208	814	.000	.869	814	.000
IV_LT_4	Re-evaluation Priorities	.223	814	.000	.828	814	.000
IV_LT_5	Changes in OE	.298	814	.000	.685	814	.000
IV_LT_6	Changes in Regulations	.199	814	.000	.936	814	.000
IV_LT_7	Changes in Policies	.174	814	.000	.940	814	.000
IV_LT_8	Fluctuating Guidance	.153	814	.000	.928	814	.000
IV_RBT_1	Knowledge/Info Sharing	.181	814	.000	.909	814	.000
IV_RBT_2	Increase Collaboration	.163	814	.000	.928	814	.000
IV_RBT_3	Embrace Collaboration	.200	814	.000	.906	814	.000
IV_RBT_4	Prefer Status Quo	.155	814	.000	.938	814	.000
IV_RBT_5	Mission Performance	.206	814	.000	.936	814	.000
IV_RBT_6	Adopt Mandated Change	.163	814	.000	.941	814	.000
IV_RBT_7	Changes in Work	.219	814	.000	.915	814	.000
IV_RBT_8	Unwelcome Changes	.132	814	.000	.938	814	.000
IV_RBT_9	Unnecessary Changes	.182	814	.000	.887	814	.000
IV_LAMC_1	Loss of Manpower	.140	814	.000	.940	814	.000
IV_LAMC_2	Loss of Funding	.161	814	.000	.937	814	.000
IV_LAMC_3	Unwillingness to Adopt	.184	814	.000	.943	814	.000
IV_LAMC_4	Encourage Feedback	.171	814	.000	.924	814	.000
IV_LAMC_5	Convey Feedback	.185	814	.000	.934	814	.000
IV_LAMC_6	Consider Feedback	.244	814	.000	.916	814	.000

Further tests of normality (i.e., evaluation of skewness for all factor scores) were required. These additional tests and their results will be covered in Sub-Section 4.6.7.

#### 4.5 Evaluation of Disruption Scores

Section 3.13 outlined the applied techniques for both computing and normalizing the disruption scores (i.e., the dependent variables in this research). The total disruption score (MRSDS) is a product of the modified (M), reprioritized (R), suspended (S), and discontinued (D) metrics derived from survey questions 2 through 5. Table 148 through Table 150 outline their mean scores by rank/grade, function, and military experience.

Upon calculating the disruption scores, the values may range between 0 and 1. Theoretically, a disruption score equal to 0 would suggest that the research participants never experienced any changes whatsoever (i.e., neither modified/reprioritized program requirements nor suspended/discontinued programs) as part of the business transformation initiatives which they support(ed). Alternatively, a disruption score equal to 1 would indicate that every single business transformation initiative was either modified, reprioritized, suspended, or discontinued. For example, the data in Table 148 indicate that staff members with a rank of O4 experienced that 35.8% (on average) of their supported business transformation initiatives/requirements were modified ( $\bar{x} MS_{ik}$ ).

**Table 148.** Distribution of Average Disruption Scores (by Rank/Grade)

Rank/Grade	Count	$\bar{x} MS_{ik}$	$\bar{x} RS_{ik}$	$\bar{x} SS_{ik}$	$\bar{x} DS_{ik}$	$\bar{x} MRSDS_{ik}$
O3(P)	14	0.432	0.184	0.039	0.453	0.265
O4	130	0.358	0.259	0.197	0.461	0.303
O5	194	0.328	0.282	0.194	0.458	0.300
O6	79	0.328	0.335	0.266	0.454	0.326
GS-13	423	0.337	0.323	0.263	0.465	0.329
GS-14	185	0.353	0.323	0.230	0.459	0.323
GS-15	70	0.371	0.368	0.251	0.458	0.341

**Table 149.** Distribution of Average Disruption Scores (by Function)

Function	Count	$\bar{x} MS_{ik}$	$\bar{x} RS_{ik}$	$\bar{x} SS_{ik}$	$\bar{x} DS_{ik}$	$\bar{x} MRSDS_{ik}$
G-1	200	0.354	0.356	0.265	0.458	0.338
G-2	131	0.332	0.301	0.277	0.464	0.326
G-3	340	0.340	0.293	0.219	0.461	0.311
G-4	48	0.297	0.272	0.189	0.471	0.295
G-5	15	0.377	0.403	0.151	0.474	0.334
G-6	33	0.284	0.270	0.213	0.454	0.290
G-7	146	0.374	0.330	0.300	0.465	0.347
G-8	40	0.312	0.221	0.093	0.447	0.256
G-9 <sup>26</sup>	0	---	---	---	---	---
Other	142	0.349	0.313	0.186	0.458	0.310

**Table 150.** Distribution of Average Disruption Scores (by Military Experience)

Years Mil Exp (ME)	Count	$\bar{x} MS_{ik}$	$\bar{x} RS_{ik}$	$\bar{x} SS_{ik}$	$\bar{x} DS_{ik}$	$\bar{x} MRSDS_{ik}$
Civ (no ME)	112	0.360	0.327	0.175	0.467	0.316
Civ (1-5 years ME)	33	0.337	0.323	0.283	0.453	0.328
Civ (6-10 years ME)	36	0.360	0.426	0.369	0.465	0.380
Civ (11-15 years ME)	37	0.349	0.337	0.209	0.458	0.320
Civ (16-20 years ME)	51	0.309	0.271	0.332	0.456	0.323
Civ (20+ years ME)	409	0.344	0.326	0.256	0.464	0.329
Mil (1-5 years ME)	1	0.500	1.000	1.000	0.453	0.670
Mil (6-10 years ME)	23	0.342	0.243	0.083	0.453	0.268
Mil (11-15 years ME)	63	0.369	0.256	0.150	0.454	0.292
Mil (16-20 years ME)	109	0.339	0.277	0.168	0.463	0.298
Mil (20+ years ME)	221	0.333	0.292	0.244	0.456	0.313

Figure 10 through Figure 19 illustrate the dispersion of the M, R, S, D, and MRSDS disruption scores. The histograms show the disruption scores on the x-axis and the frequency on the y-axis (for the entire target population). The bivariate scatter plots illuminate the clusters of disruption scores (y-axis) by rank/grade (x-axis).

<sup>26</sup> Survey question #35 allowed selecting multiple G-functions when answering this question. To ensure a mutually exclusive distribution, it was proposed to utilize the G-function based on the *maximum* chosen answer value (i.e., maximum number of years served) in any given organization. Although G-9 has been supported by 37 staff members, the staff members' years of service in G-9 were always lower than those of other G-functions. Therefore, this particular row in Table 149 contains null values.

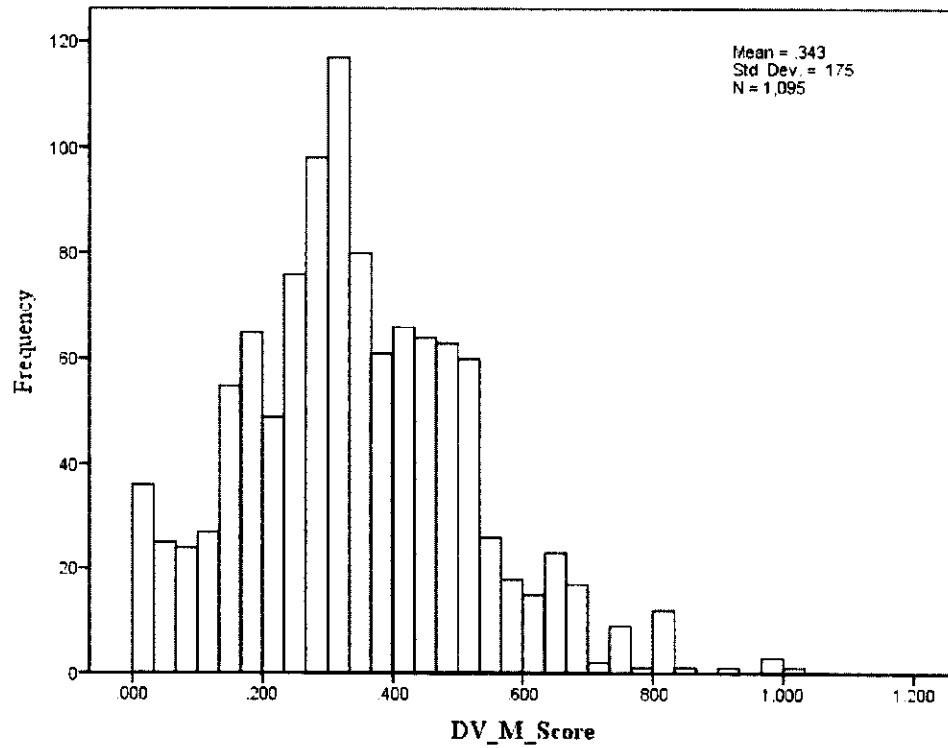


Figure 10. Histogram (Modified Scores – across entire research target population)

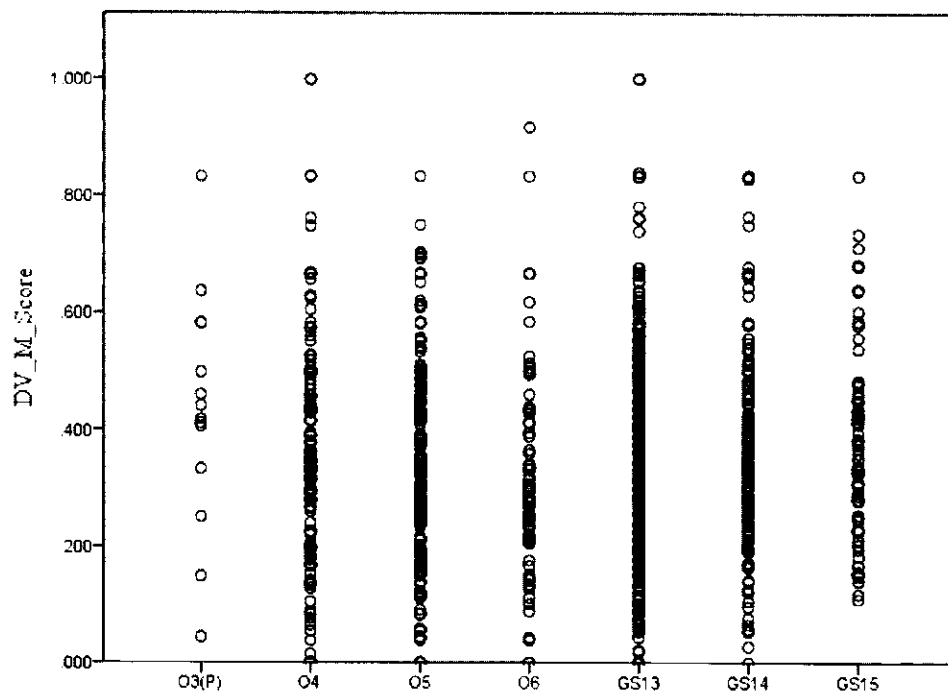
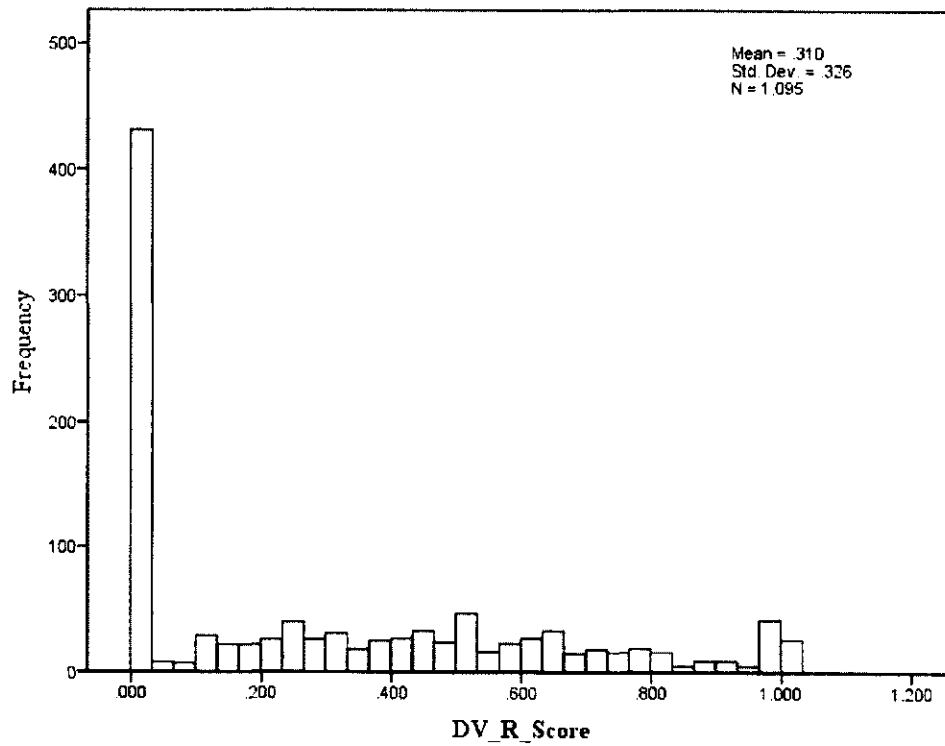
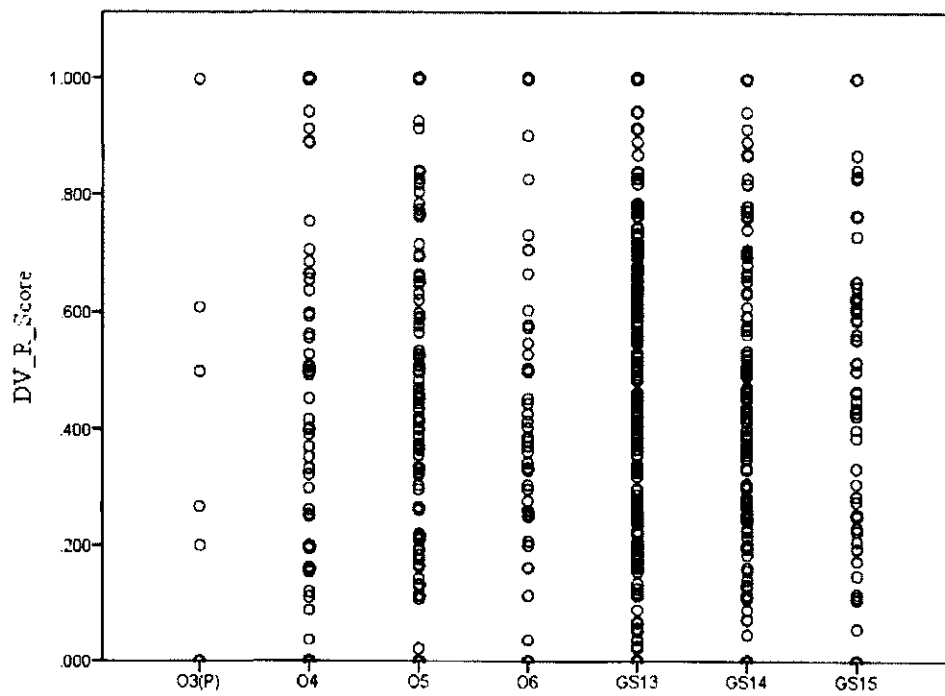


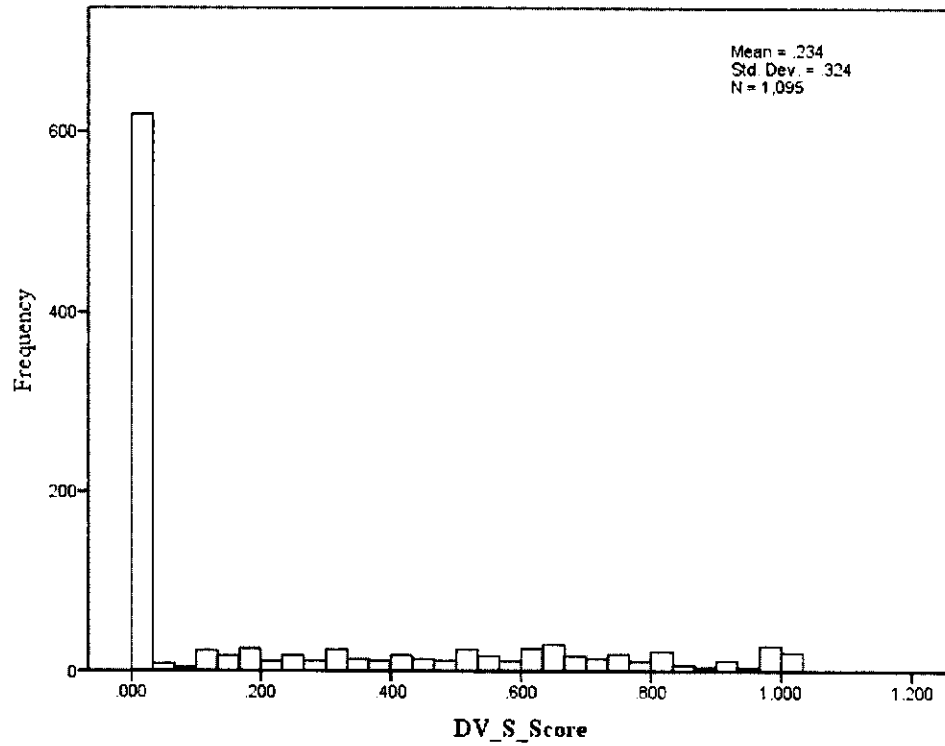
Figure 11. Bivariate Scatter Plot (Modified Scores – by rank/grade)



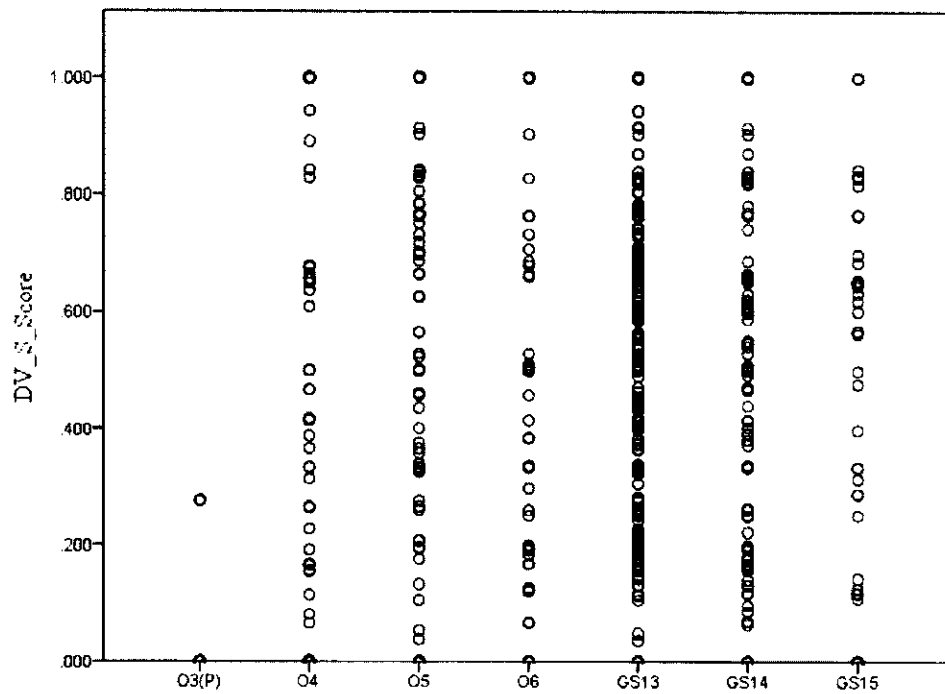
**Figure 12.** Histogram (Reprioritized Scores – across entire research target population)



**Figure 13.** Bivariate Scatter Plot (Reprioritized Scores – by rank/grade)

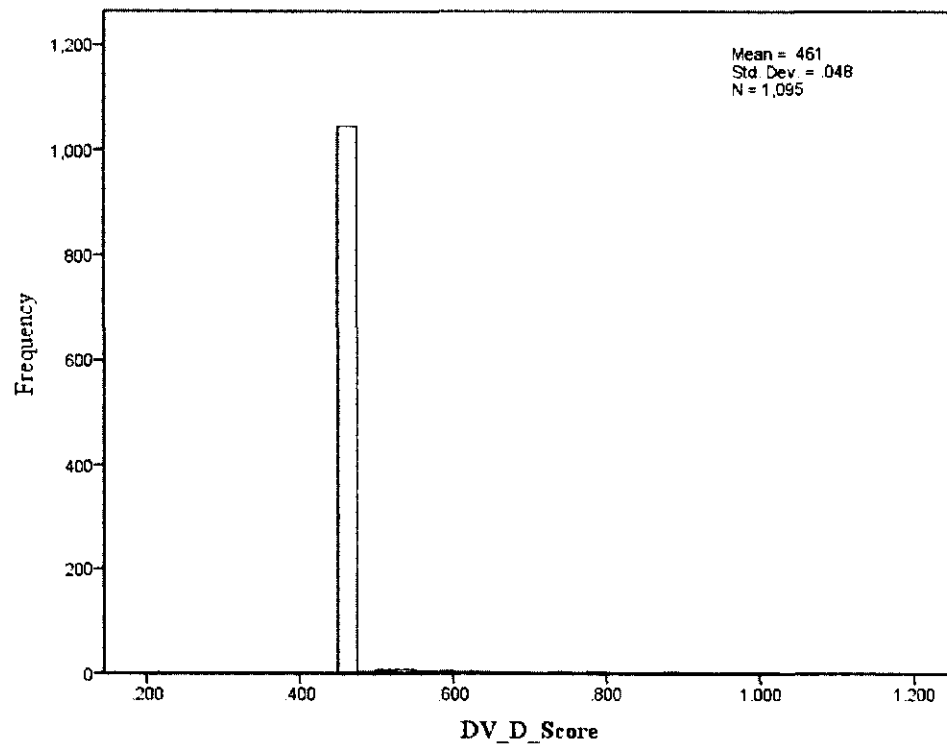


**Figure 14.** Histogram (Suspended Scores – across entire research target population)

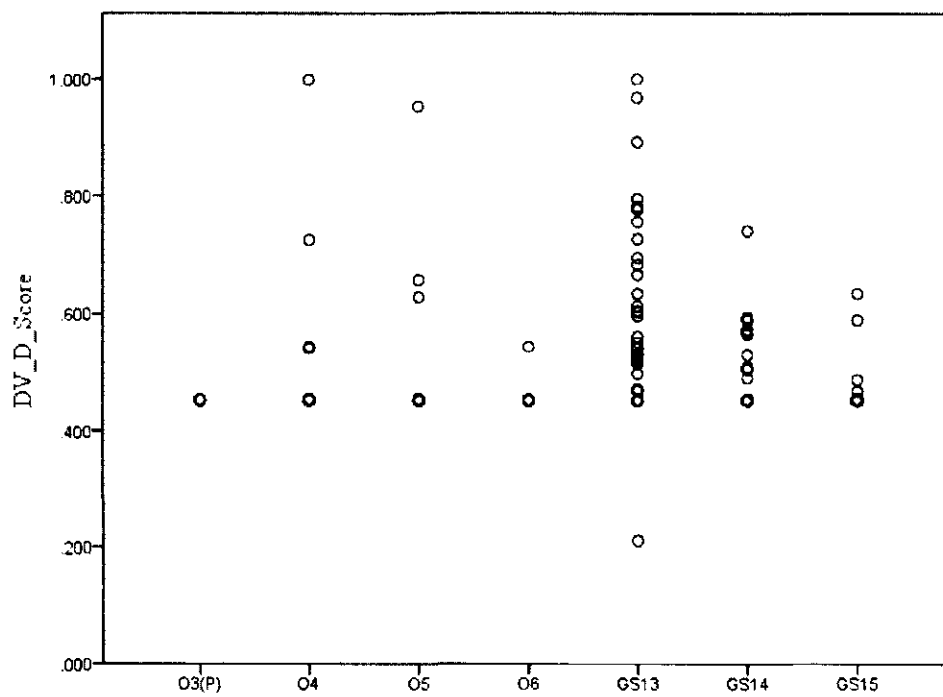


**Figure 15.** Bivariate Scatter Plot (Suspended Scores – by rank/grade)





**Figure 16.** Histogram (Discontinued Scores – across entire research target population)



**Figure 17.** Bivariate Scatter Plot (Discontinued Scores – by rank/grade)

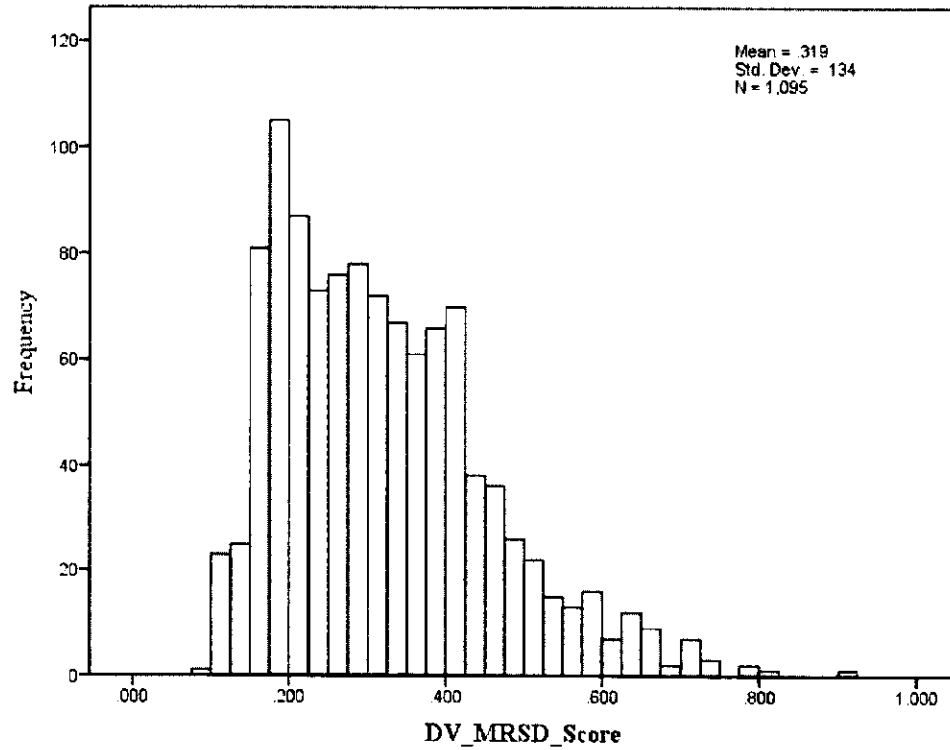


Figure 18. Histogram (MRSD Scores – across entire research target population)

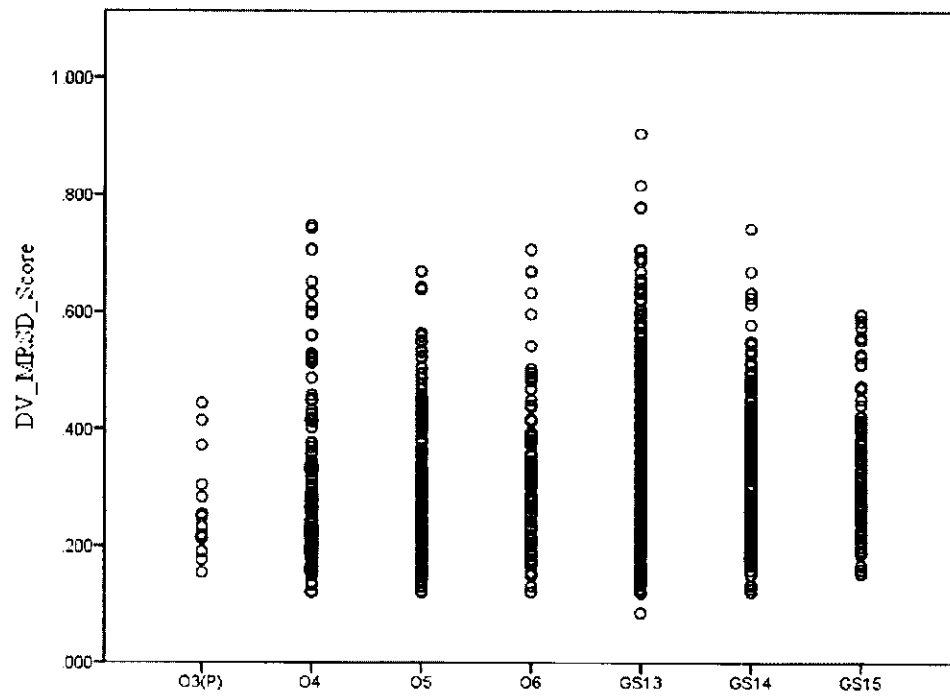
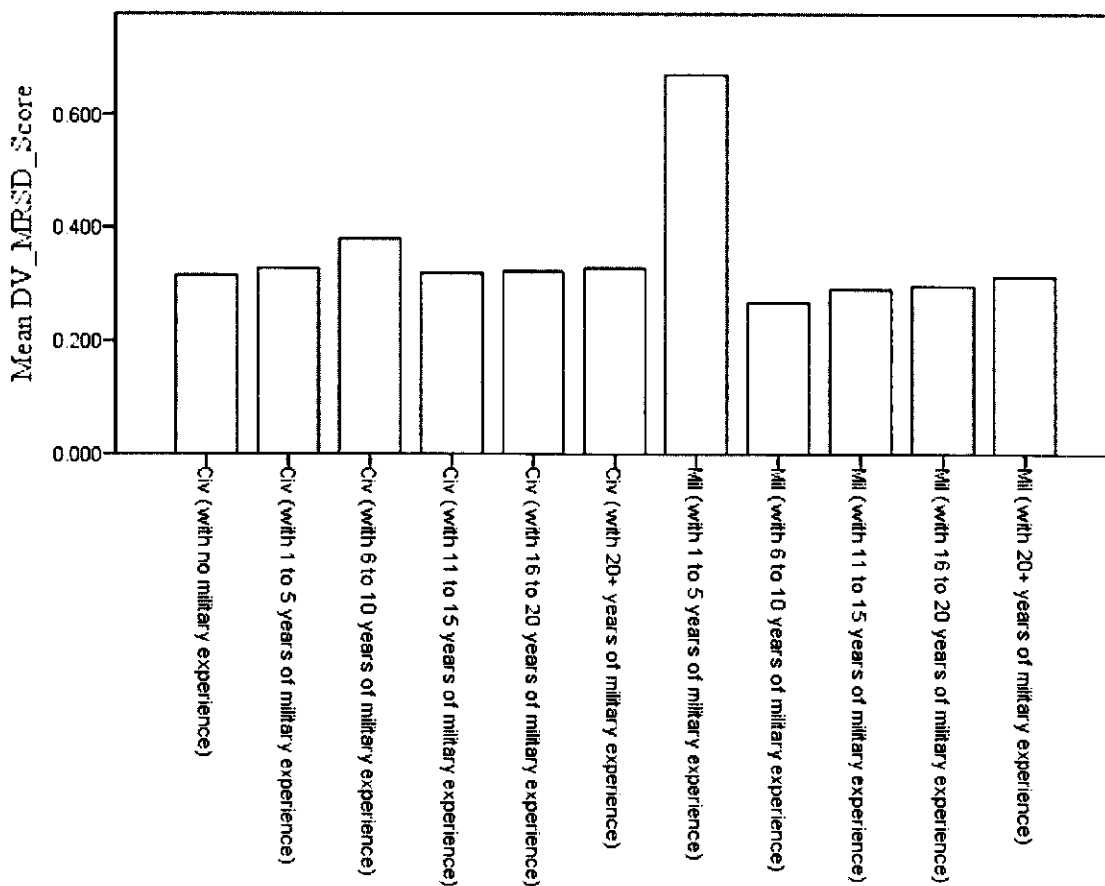


Figure 19. Bivariate Scatter Plot (MRSD Scores – by rank/grade)



**Figure 20.** Histogram (by military & civilian – and military experience)

Appendix Q provides all mathematical functions which were utilized to compute the modified, reprioritized, suspended, and discontinued scores as well as the total MRSD disruption scores (products). The same appendix also includes all 1,095 individual scores which can be identified only by the survey response identification number. These records are *not* traceable to a specific staff member and or staff function.

#### 4.5.1 Summary/Conclusion – Descriptive Statistics

As part of the descriptive statistics, the summary below includes some unique and interesting research findings which should be emphasized in this study.

First, as part of the survey (question #1), staff members were asked to identify which business transformation initiatives, to which they contributed their efforts, either directly or indirectly. Of the 1,436 survey responses, 331 staff members (23.1%) indicated that they did not contribute to any BTIs within TRADOC. However, as part of the confirmatory survey question (#29), 41.8% of those particular staff members indicated that they believe the command itself is engaged in business transformation activities. So, while nearly half of those surveyed staff members have situational awareness of business transformation initiatives within the organization, they believe they have not been tasked (or do not need) to contribute to business transformation efforts.

Further, most of the aggregated survey responses (i.e., for independent variables) were normally distributed (with some being slightly left-skewed or right-skewed). However, survey question/statement #22 (i.e., “Changes in the organization are *unnecessary*”) resulted in a distinctive response pattern which resembles an interval distribution. Here, based on the 7-point Likert scale, the majority of survey staff members indicated that they strongly disagree with such a statement (i.e., they believe that changes in the organization are necessary).

With respect to the survey response rates – broken down by military/civilian categories as well as by rank/grade – the senior staff members within each category (i.e., O6s and GS-15s) had the largest participation rates. For example, 24.55% of all Colonels (at TRADOC) and 45.12% of all civilians at the GS-15 level (at TRADOC) submitted their feedback. From the researcher's perspective, this is important as these senior staff members are responsible for, e.g., the successful implementation of any business transformation initiatives.

#### *4.5.2 Summary/Conclusion – Disruption Scores*

Table 151 provides a statistical summary of the modified (M), reprioritized (R), suspended (S), discontinued (D), and total disruption scores across rank/grade, function, and years of military experience.

Within the category “Rank/Grade”, the minimum average disruption score (0.039) was observed in the suspended (S) disruption score category while the maximum average disruption score (0.465) was observed in the discontinued (D) disruption score category. The mean and median disruption scores were 0.326 and 0.328, respectively.

Within the category “Function”, the minimum average disruption score (0.093) was also observed in the suspended (S) disruption score category while the maximum average disruption score (0.474) was, again, observed in the discontinued (D) disruption score category. The mean and median disruption scores were 0.325 and 0.313, respectively.

Within the category “Years Military Experience”, both the minimum average disruption score (0.083) and the maximum average disruption score (1.000) were observed in the suspended (S) disruption score category. However, it should be noted that the outlier value of 1.000 was based on a single staff member who has 1-5 years of military experience.

**Table 151.** Statistical Summary of Average Disruption Scores (by Category)

Disruption Score Category	Min	Max	Mean	Median
Rank/Grade	0.039	0.465	0.326	0.328
Function	0.093	0.474	0.325	0.313
Years Military Experience	0.083	1.000	0.367	0.333

Finally, as part of this initial investigation about disruptors which may impact business transformation initiatives in a strategic military command, a rating system that would classify the organizational overall state of business transformation (e.g., poor, fair, average, good, excellent) has *not* been established at this time. However, developing such rating system ought to be considered for future research activities.

#### **4.6 Construct Development: Factor Analysis, Reliability, and Skewness Test**

Factor analysis using *Principal Component Analysis* (PCA) statistical techniques were applied in order to check the validity and reliability of the constructs developed (see Table 152). This section presents results of the data analysis based on the following tests: 1) exploratory factor analysis; 2) confirmatory factor analysis; 3) reliability testing; 4) communalities; and 5) skewness. In some cases, re-runs of both confirmatory factor analysis and reliability testing were conducted in the building of acceptable values of

construct validity and reliability, after which factor scores were drawn to later test the hypotheses.

Table 152 illustrates the relationship between the twenty-three independent variables and their associated constructs (i.e., they were used for the hypotheses testing).

**Table 152.** Independent Variables and Associated Constructs

Independent Variable		Construct
IV_LT_1	Number of Generals	→ Construct #1 (H1 <sub>a</sub> )
IV_LT_2	Commander's Intent	
IV_LT_3	Re-evaluation Unit Goals	
IV_LT_4	Re-evaluation Priorities	
IV_LT_5	Changes in OE	→ Construct #2 (H1 <sub>b</sub> )
IV_LT_6	Changes in Regulations	
IV_LT_7	Changes in Policies	
IV_LT_8	Fluctuating Guidance	
IV_RBT_1	Knowledge/Info Sharing	→ Construct #3 (H2 <sub>a</sub> )
IV_RBT_2	Increase Collaboration	
IV_RBT_3	Embrace Collaboration	
IV_RBT_4	Prefer Status Quo	→ Construct #4 (H2 <sub>b</sub> )
IV_RBT_5	Mission Performance	
IV_RBT_6	Adopt Mandated Change	
IV_RBT_7	Changes in Work	→ Construct #5 (H2 <sub>c</sub> )
IV_RBT_8	Unwelcome Changes	
IV_RBT_9	Unnecessary Changes	
IV_LAMC_1	Loss of Manpower	→ Construct #6 (H3 <sub>a</sub> )
IV_LAMC_2	Loss of Funding	
IV_LAMC_3	Unwillingness to Adopt	
IV_LAMC_4	Encourage Feedback	→ Construct #7 (H3 <sub>b</sub> )
IV_LAMC_5	Convey Feedback	
IV_LAMC_6	Consider Feedback	

#### 4.6.1 Exploratory Factor Analysis

*Exploratory Factor Analysis* (EFA) was utilized to determine whether or not any of the independent variables were indeed significant contributors to a given construct. For

this test, the orthogonal rotated component matrix (see Table 153) provides valuable information to the researcher. In this study, small coefficients with a value below 0.4 were suppressed by the software (i.e., this specific value was selected in one of the menu options for the factor analysis).<sup>27</sup>

**Table 153.** Rotated Component Matrix

Construct	Metric ID	Rotated Component Matrix						
		1	2	3	4	5	6	7
Construct #1 (H1 <sub>a</sub> )	IV_LT_1							.765
	IV_LT_2		.845					
	IV_LT_3		.911					
	IV_LT_4		.915					
Construct #2 (H1 <sub>b</sub> )	IV_LT_5							.637
	IV_LT_6				.886			
	IV_LT_7				.896			
	IV_LT_8	.423			.473			
Construct #3 (H2 <sub>a</sub> )	IV_RBT_1			.526				
	IV_RBT_2	.701						
	IV_RBT_3	.483		.545				
Construct #4 (H2 <sub>b</sub> )	IV_RBT_4			.751				
	IV_RBT_5	.652						
	IV_RBT_6			.647				
Construct #5 (H2 <sub>c</sub> )	IV_RBT_7		.470					
	IV_RBT_8			.737				
	IV_RBT_9						.858	
Construct #6 (H3 <sub>a</sub> )	IV_LAMC_1					.893		
	IV_LAMC_2					.884		
	IV_LAMC_3			.473		.519		
Construct #7 (H3 <sub>b</sub> )	IV_LAMC_4	.832						
	IV_LAMC_5	.765						
	IV_LAMC_6	.836						

<sup>27</sup> Two of the three RBT constructs suggest overlapping. Thus, applying EFA may not be necessary. As a result, CFA should be forced for the RBT-related constructs. In essence, the obtained data results from applying EFA did not provide sufficient evidence in order to define questions for loading each of these factors (R. Landaeta, personal communication, December 13, 2013). Appendix L provides a *What-If Analysis* with respect to keeping factors LT\_1 and LT\_5 (as part of construct #1 and #2, respectively).



#### 4.6.2 Confirmatory Factor Analysis

PCA was chosen as the extraction method during the *Confirmatory Factor Analysis* (CFA). As illustrated in Table 153, variables with a value greater than 0.4 were considered contributing factors to their constructs. The primary purpose for using CFA was to validate the initial findings as determined by the EFA method. For example, in the previous step, applying the EFA technique indicated that only three out of 4 variables (i.e., LT\_2, LT\_3, and LT\_4) contributed to the larger construct #1 (i.e., for hypothesis H1<sub>a</sub>). Data in Table 154 confirm the CFA results based on the preliminary assessment for construct #1. Therefore, any outlier variable (e.g., LT\_1) should be removed from the proposed construct before transitioning into the phase of *reliability testing*.

Table 154 through Table 160 summarize the component matrices for the seven constructs. Cell content containing variables which did *not* meet the .4 threshold level criteria were shaded in gray. It is noteworthy to mention, however, any reliable construct must contain at least three variables (R. Landaeta, personal communication, December 2, 2013). Therefore, proposed constructs that do not satisfy this requirement (e.g., construct #5) should not be considered a reliable measure.

**Table 154.** Component Matrix (Construct #1 – H1<sub>a</sub>)

Construct	Metric ID	Component 1
Construct #1 (H1 <sub>a</sub> )	IV_LT_1	.058
	IV_LT_2	.865
	IV_LT_3	.922
	IV LT 4	.935

**Table 155.** Component Matrix (Construct #2 – H1<sub>b</sub>)

Construct	Metric ID	Component 1
Construct #2 (H1 <sub>b</sub> )	IV_LT_5	.368
	IV_LT_6	.853
	IV_LT_7	.906
	IV LT 8	.584

**Table 156.** Component Matrix (Construct #3 – H2<sub>a</sub>)

Construct	Metric ID	Component 1
Construct #3 (H2 <sub>a</sub> )	IV_RBT_1	.740
	IV_RBT_2	.829
	IV RBT 3	.859

**Table 157.** Component Matrix (Construct #4 – H2<sub>b</sub>)

Construct	Metric ID	Component 1
Construct #4 (H2 <sub>b</sub> )	IV_RBT_4	.753
	IV_RBT_5	.470
	IV RBT 6	.800

**Table 158.** Component Matrix (Construct #5 – H2<sub>c</sub>)

Construct	Metric ID	Component 1
Construct #5 (H2 <sub>c</sub> )	IV_RBT_7	.174
	IV_RBT_8	-.792
	IV RBT 9	.776

**Table 159.** Component Matrix (Construct #6 – H3<sub>a</sub>)

Construct	Metric ID	Component 1
Construct #6 (H3 <sub>a</sub> )	IV_LAMC_1	.888
	IV_LAMC_2	.889
	IV_LAMC_3	.616

**Table 160.** Component Matrix (Construct #7 – H3<sub>b</sub>)

Construct	Metric ID	Component 1
Construct #7 (H3 <sub>b</sub> )	IV_LAMC_4	.873
	IV_LAMC_5	.890
	IV_LAMC_6	.900

#### 4.6.3 Reliability Testing

Measuring internal consistency was conducted through the *Cronbach's Alpha* model. Rovai, et al. confirm that “the widely-accepted social science cut-off should be 0.7 or higher for a set of items to be considered an internally-consistent scale” (Rovai, Baker, & Ponton, 2012). The formula (4-1) was utilized to calculate *Cronbach's Alpha* where the authors define its elements as follows: a)  $n$  equals number of items, b)  $s_i^2$  equals the variance of scores on each variable item, and c)  $S_{Test}^2$  is the total variance of all items on the scale.

$$\alpha = \frac{n}{n-1} \left( 1 - \frac{\sum s_i^2}{S_{Test}^2} \right) \quad (4-1)$$

Table 161 through Table 167 summarize the reliability statistics of the study's seven constructs (H1<sub>a</sub> to H3<sub>b</sub>). A derived *Cronbach's Alpha* value of greater than 0.7 exceeds the general acceptance criteria and, therefore, suggests internal consistency of the measurement instrument (i.e., survey). Table 168 through Table 174 outline the *Item-Total-Statistics* and offer additional information about each variable's significance in support of a construct (e.g., the change in *Cronbach's Alpha* if a variable was deleted).

**Table 161.** Reliability Statistics – Cronbach's Alpha (Construct #1 – H1<sub>a</sub>)

Cronbach's Alpha	N of Items
.721	4

**Table 162.** Reliability Statistics – Cronbach's Alpha (Construct #2 – H1<sub>b</sub>)

Cronbach's Alpha	N of Items
.644	4

**Table 163.** Reliability Statistics – Cronbach's Alpha (Construct #3 – H2<sub>a</sub>)

Cronbach's Alpha	N of Items
.732	3

**Table 164.** Reliability Statistics – Cronbach's Alpha (Construct #4 – H2<sub>b</sub>)

Cronbach's Alpha	N of Items
.441	3

**Table 165.** Reliability Statistics – Cronbach's Alpha (Construct #5 – H2<sub>c</sub>)

Cronbach's Alpha	N of Items
-.407	3

**Table 166.** Reliability Statistics – Cronbach's Alpha (Construct #6 – H3<sub>a</sub>)

Cronbach's Alpha	N of Items
.723	3

**Table 167.** Reliability Statistics – Cronbach's Alpha (Construct #7 – H3<sub>b</sub>)

Cronbach's Alpha	N of Items
.861	3

**Table 168.** Item-Total Statistics (Construct #1 – H1<sub>a</sub>)

Construct	Metric ID	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Construct #1 (H1 <sub>a</sub> )	IV_LT_1	15.88	19.609	.034	.894
	IV_LT_2	13.63	12.815	.671	.565
	IV_LT_3	13.96	11.407	.713	.523
	IV LT 4	13.68	11.394	.748	.502

**Table 169.** Item-Total Statistics (Construct #2 – H1<sub>b</sub>)

Construct	Metric ID	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Construct #2 (H1 <sub>b</sub> )	IV_LT_5	11.64	15.747	.195	.709
	IV_LT_6	13.67	11.394	.549	.483
	IV_LT_7	13.50	10.406	.664	.389
	IV LT 8	14.28	12.812	.332	.645

**Table 170.** Item-Total Statistics (Construct #3 – H2<sub>a</sub>)

Construct	Metric ID	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Construct #3 (H2 <sub>a</sub> )	IV_RBT_1	7.00	10.023	.476	.749
	IV_RBT_2	7.31	10.289	.574	.624
	IV RBT 3	7.80	10.012	.627	.564

**Table 171.** Item-Total Statistics (Construct #4 – H2<sub>b</sub>)

Construct	Metric ID	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Construct #4 (H2 <sub>b</sub> )	IV_RBT_4	7.59	5.609	.300	.284
	IV_RBT_5	7.77	7.914	.155	.518
	IV_RBT_6	7.96	5.596	.362	.161

**Table 172.** Item-Total Statistics (Construct #5 – H2<sub>c</sub>)

Construct	Metric ID	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Construct #5 (H2 <sub>c</sub> )	IV_RBT_7	9.02	4.172	-.041	-.668
	IV_RBT_8	10.13	4.556	-.220	.010
	IV_RBT_9	8.63	4.973	-.197	-.107

**Table 173.** Item-Total Statistics (Construct #6 – H3<sub>a</sub>)

Construct	Metric ID	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Construct #6 (H3 <sub>a</sub> )	IV_LAMC_1	8.80	5.787	.647	.500
	IV_LAMC_2	8.78	6.212	.658	.497
	IV_LAMC_3	9.24	7.994	.358	.841

**Table 174.** Item-Total Statistics (Construct #7 – H3<sub>b</sub>)

Construct	Metric ID	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Construct #7 (H3 <sub>b</sub> )	IV_LAMC_4	8.48	8.201	.718	.833
	IV_LAMC_5	7.83	9.115	.744	.799
	IV_LAMC_6	8.11	9.582	.764	.787

#### 4.6.4 Confirmatory Factor Analysis (Re-Run)

Given the required removal of some variables (e.g., IV\_LT\_1 in construct #1 and IV\_LT\_5 in construct #2), it is suggested to re-run CFA. In fact, research practitioners such as DiStefano, et al. recommend this technique since it “[reduces] a large number of items from a questionnaire or survey instrument to a smaller number of components, [in order to uncover] latent dimensions underlying a data set, or [to examine] which items have the strongest association with a given factor” (DiStefano, Zhu, & Mindrila, 2009). Upon completion of re-executing the CFA, factor scores were now created in SPSS. Table 175 summarizes the constructs, construct names, metric IDs, and the newly established factor scores (which are to be utilized for later hypotheses testing).

**Table 175.** Constructs and Factor Scores

Construct	Name of Construct	Metric ID	Name of Factor Score (FS)
Construct #1 (H1 <sub>a</sub> )	Frequent turnover/change of a Commander or Commanding General	IV_LT_2	→ FactorScore_1_H1 <sub>a</sub>
		IV_LT_3	
		IV_LT_4	
Construct #2 (H1 <sub>b</sub> )	Guidance inconsistencies	IV_LT_6	→ FactorScore_2_H1 <sub>b</sub>
		IV_LT_7	
		IV_LT_8	
Construct #3 (H2 <sub>a</sub> )	Collaboration with colleagues	IV_RBT_1	→ FactorScore_3_H2 <sub>a</sub>
		IV_RBT_2	
		IV_RBT_3	
Construct #4 (H2 <sub>b</sub> )	Adoption of different business processes	IV_RBT_4	→ FactorScore_4_H2 <sub>b</sub>
		IV_RBT_5	
		IV_RBT_6	
Construct #5 (H2 <sub>c</sub> )	Evaluation of required changes	IV_RBT_7	→ FactorScore_5_H2 <sub>c</sub>
		IV_RBT_8	
		IV_RBT_9	
Construct #6 (H3 <sub>a</sub> )	Disincentives for increased organizational process efficiencies	IV_LAMC_1	→ FactorScore_6_H3 <sub>a</sub>
		IV_LAMC_2	
		IV_LAMC_3	
Construct #7 (H3 <sub>b</sub> )	Dissent tolerance	IV_LAMC_4	→ FactorScore_7_H3 <sub>b</sub>
		IV_LAMC_5	
		IV_LAMC_6	

Also, as part of the CFA re-run, the *Total Variance Explained* (TVE) matrices provide additional information about the eigenvalues which indicate the “proportion of total variance in all the variables that is accounted for by the identified factor/component” (Rovai, et al., 2012). Table 176 through Table 182 outline the construct variances, including both the eigenvalues as well as the sums of squared loadings.

**Table 176. Total Variance Explained – Construct #1 (H1<sub>a</sub>)**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.475	82.486	82.486	2.475	82.486	82.486
2	.364	12.142	94.629			
3	.161	5.371	100.000			

**Table 177. Total Variance Explained – Construct #2 (H1<sub>b</sub>)**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.953	65.109	65.109	1.953	65.109	65.109
2	.805	26.826	91.936			
3	.242	8.064	100.000			

**Table 178. Total Variance Explained – Construct #3 (H2<sub>a</sub>)**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.973	65.751	65.751	1.973	65.751	65.751
2	.633	21.088	86.840			
3	.395	13.160	100.000			



**Table 179.** Total Variance Explained – Construct #4 (H2<sub>b</sub>)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.428	47.605	47.605	1.428	47.605	47.605
2	.932	31.065	78.669			
3	.640	21.331	100.000			

**Table 180.** Total Variance Explained – Construct #5 (H2<sub>c</sub>)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.259	41.960	41.960	1.259	41.960	41.960
2	.998	33.264	75.224			
3	.743	24.776	100.000			

**Table 181.** Total Variance Explained – Construct #6 (H3<sub>a</sub>)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.958	65.266	65.266	1.958	65.266	65.266
2	.769	25.646	90.913			
3	.273	9.087	100.000			

**Table 182.** Total Variance Explained – Construct #7 (H3<sub>b</sub>)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.364	78.808	78.808	2.364	78.808	78.808
2	.353	11.779	90.587			
3	.282	9.413	100.000			

Lastly, the CFA produced the modified component matrices (Table 183 through Table 189). They summarize the final proposed constructs (i.e., after the removal of the non-contributing variables).

**Table 183.** Component Matrix (Construct #1 – H1<sub>a</sub>) – Re-Run

Construct	Metric ID	Component 1
Construct #1 (H1 <sub>a</sub> )	IV_LT_2	.864
	IV_LT_3	.923
	IV LT 4	.935

**Table 184.** Component Matrix (Construct #2 – H1<sub>b</sub>) – Re-Run

Construct	Metric ID	Component 1
Construct #2 (H1 <sub>b</sub> )	IV_LT_6	.873
	IV_LT_7	.917
	IV LT 8	.592

**Table 185.** Component Matrix (Construct #3 – H2<sub>a</sub>) – Re-Run

Construct	Metric ID	Component 1
Construct #3 (H2 <sub>a</sub> )	IV_RBT_1	.740
	IV_RBT_2	.829
	IV RBT 3	.859

**Table 186.** Component Matrix (Construct #4 – H2<sub>b</sub>) – Re-Run

Construct	Metric ID	Component 1
Construct #4 (H2 <sub>b</sub> )	IV_RBT_4	.753
	IV_RBT_5	.470
	IV RBT 6	.800

**Table 187.** Component Matrix (Construct #5 – H2<sub>c</sub>) – Re-Run

Construct	Metric ID	Component 1
Construct #5 (H2 <sub>c</sub> )	IV_RBT_7	.174
	IV_RBT_8	-.792
	IV_RBT_9	.776

**Table 188.** Component Matrix (Construct #6 – H3<sub>a</sub>) – Re-Run

Construct	Metric ID	Component 1
Construct #6 (H3 <sub>a</sub> )	IV_LAMC_1	.888
	IV_LAMC_2	.889
	IV_LAMC_3	.616

**Table 189.** Component Matrix (Construct #7 – H3<sub>b</sub>) – Re-Run

Construct	Metric ID	Component 1
Construct #7 (H3 <sub>b</sub> )	IV_LAMC_4	.873
	IV_LAMC_5	.890
	IV_LAMC_6	.900

#### 4.6.5 Reliability Testing (Re-Run)

As indicated in the previous section, some variables were removed from the final proposed constructs. Therefore, *Cronbach's Alpha* values should be re-generated in support of reliability testing. As illustrated in Table 190 and Table 191, their values changed from 0.721 to 0.894 and 0.644 to 0.711 for constructs 1 and 2, respectively.

Furthermore, Table 197 to Table 203 outline the *Item-Total-Statistics* which provide additional information about content validity of the seven constructs.

**Table 190.** Reliability Statistics – Cronbach's Alpha (Construct #1 – H1<sub>a</sub>)

Cronbach's Alpha	N of Items
.894	3

**Table 191.** Reliability Statistics – Cronbach's Alpha (Construct #2 – H1<sub>b</sub>)

Cronbach's Alpha	N of Items
.711	3

**Table 192.** Reliability Statistics – Cronbach's Alpha (Construct #3 – H2<sub>a</sub>)

Cronbach's Alpha	N of Items
.732	3

**Table 193.** Reliability Statistics – Cronbach's Alpha (Construct #4 – H2<sub>b</sub>)

Cronbach's Alpha	N of Items
.441	3

**Table 194.** Reliability Statistics – Cronbach's Alpha (Construct #5 – H2<sub>c</sub>)

Cronbach's Alpha	N of Items
-.407	3

**Table 195.** Reliability Statistics – Cronbach's Alpha (Construct #6 – H3<sub>a</sub>)

Cronbach's Alpha	N of Items
.723	3

**Table 196.** Reliability Statistics – Cronbach's Alpha (Construct #7 – H3<sub>b</sub>)

Cronbach's Alpha	N of Items
.861	3

**Table 197.** Item-Total Statistics (Construct #1 – H1<sub>a</sub>)

Construct	Metric ID	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Construct #1 (H1 <sub>a</sub> )	IV_LT_2	10.46	10.294	.715	.911
	IV_LT_3	10.79	8.583	.820	.823
	IV_LT_4	10.51	8.659	.846	.799

**Table 198.** Item-Total Statistics (Construct #2 – H1<sub>b</sub>)

Construct	Metric ID	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Construct #2 (H1 <sub>b</sub> )	IV_LT_6	7.60	7.835	.590	.547
	IV_LT_7	7.44	7.090	.701	.400
	IV_LT_8	8.21	9.196	.336	.854

**Table 199.** Item-Total Statistics (Construct #3 – H2<sub>a</sub>)

Construct	Metric ID	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Construct #3 (H2 <sub>a</sub> )	IV_RBT_1	7.00	10.023	.476	.749
	IV_RBT_2	7.31	10.289	.574	.624
	IV_RBT_3	7.80	10.012	.627	.564

**Table 200.** Item-Total Statistics (Construct #4 – H2<sub>b</sub>)

Construct	Metric ID	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Construct #4 (H2 <sub>b</sub> )	IV_RBT_4	7.59	5.609	.300	.284
	IV_RBT_5	7.77	7.914	.155	.518
	IV_RBT_6	7.96	5.596	.362	.161

**Table 201.** Item-Total Statistics (Construct #5 – H2<sub>c</sub>)

Construct	Metric ID	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Construct #5 (H2 <sub>c</sub> )	IV_RBT_7	9.02	4.172	-.041	-.668
	IV_RBT_8	10.13	4.556	-.220	.010
	IV_RBT_9	8.63	4.973	-.197	-.107

**Table 202.** Item-Total Statistics (Construct #6 – H3<sub>a</sub>)

Construct	Metric ID	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Construct #6 (H3 <sub>a</sub> )	IV_LAMC_1	8.80	5.787	.647	.500
	IV_LAMC_2	8.78	6.212	.658	.497
	IV_LAMC_3	9.24	7.994	.358	.841

**Table 203.** Item-Total Statistics (Construct #7 – H3<sub>b</sub>)

Construct	Metric ID	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Construct #7 (H3 <sub>b</sub> )	IV_LAMC_4	8.48	8.201	.718	.833
	IV_LAMC_5	7.83	9.115	.744	.799
	IV_LAMC_6	8.11	9.582	.764	.787

#### 4.6.6 Communalities

According to MacCallum, et al., “the communality of a variable is the portion of the variance of that variable that is accounted for by the common factors” (MacCallum, Widaman, Zhang, & Hong, 1999). Specifically, communality values range between 0 and 1. The recognized statistician, Andy Field, provides the following explanation: “A variable that has no specific variance (or random variance) would have a communality of 1; a variable that shares none of its variance with any other variable would have a

communality of 0" (Field, 2009). For instance, in the case of the variable IV\_LT\_4 (see Table 204), 87.5% of the variance is explained by this factor. The calculated mean communalities were greater than 0.5 except for construct # 4 (0.476) and #5 (0.420). In summary, communalities analysis is a good way to determine if the sample used in factor analysis is large enough to result in valid constructs.

**Table 204.** Communalities

Construct	Metric ID	Initial	Extraction	Mean
Construct #1 (H1 <sub>a</sub> )	IV_LT_2	1.000	.747	.825
	IV_LT_3	1.000	.852	
	IV_LT_4	1.000	.875	
Construct #2 (H1 <sub>b</sub> )	IV_LT_6	1.000	.762	.651
	IV_LT_7	1.000	.841	
	IV_LT_8	1.000	.351	
Construct #3 (H2 <sub>a</sub> )	IV_RBT_1	1.000	.548	.658
	IV_RBT_2	1.000	.687	
	IV_RBT_3	1.000	.737	
Construct #4 (H2 <sub>b</sub> )	IV_RBT_4	1.000	.567	.476
	IV_RBT_5	1.000	.221	
	IV_RBT_6	1.000	.640	
Construct #5 (H2 <sub>c</sub> )	IV_RBT_7	1.000	.030	.420
	IV_RBT_8	1.000	.627	
	IV_RBT_9	1.000	.602	
Construct #6 (H3 <sub>a</sub> )	IV_LAMC_1	1.000	.788	.653
	IV_LAMC_2	1.000	.790	
	IV_LAMC_3	1.000	.380	
Construct #7 (H3 <sub>b</sub> )	IV_LAMC_4	1.000	.762	.788
	IV_LAMC_5	1.000	.792	
	IV_LAMC_6	1.000	.810	

#### 4.6.7 Skewness

Determining whether or not the aggregated data of the constructs (i.e., the factor scores drawn from factor analysis) are normally distributed requires testing for *skewness*. The results of such test may facilitate the researcher's decision for conducting either a

parametric or nonparametric test (using either *Pearson's correlation coefficient* or *Spearman's rho*, respectively) for hypothesis testing and further analysis. Thus, it is necessary to validate normality for all independent variable constructs as well as the dependent variable(s). Field indicates that four basic assumptions must be met in order to consider the skewness test itself valid. These four assumptions concentrate on: 1) normally distributed sampling distribution; 2) homogeneity of variance; 3) interval or ratio data; and 4) independence (Field, 2009).

Table 205 through Table 211 describe the statistics for the independent variables (constructs H1<sub>a</sub> to H3<sub>b</sub>). Additionally, Table 212 provides information about the skewness for the dependent variable (DV\_MRSDS). Values ranging between 0 and 1 suggest a normal distribution. Consequently, it was determined that underlying data in support of constructs #3, #4, #7, as well as the dependent variable were normally distributed. Hence, as part of the later hypotheses testing, *Pearson's correlation coefficient* should be selected. The skewness test for constructs #1, #2, #5, and #6 resulted in a negative statistic (shaded in gray); therefore, *Spearman's rho* must be chosen during hypotheses testing. Lastly, it should be noted that a parametric test requires both the independent as well as the dependent variable to be normally distributed (Institute for Digital Research and Education, IDRE 2013).



**Table 205.** Descriptive Statistics – Construct #1 (H1<sub>a</sub>)

	N		Skewness	
	Statistic		Statistic	Std. Error
FactorScore_1_H1 <sub>a</sub>	1053		-1.127	.075
FactorScore_DepVariable_Disruption	1095		.865	.074
Valid N (listwise)	1053			

**Table 206.** Descriptive Statistics – Construct #2 (H1<sub>b</sub>)

	N		Skewness	
	Statistic		Statistic	Std. Error
FactorScore_2_H1 <sub>b</sub>	1030		-.305	.076
FactorScore_DepVariable_Disruption	1095		.865	.074
Valid N (listwise)	1030			

**Table 207.** Descriptive Statistics – Construct #3 (H2<sub>a</sub>)

	N		Skewness	
	Statistic		Statistic	Std. Error
FactorScore_3_H2 <sub>a</sub>	1047		.290	.076
FactorScore_DepVariable_Disruption	1095		.865	.074
Valid N (listwise)	1047			

**Table 208.** Descriptive Statistics – Construct #4 (H2<sub>b</sub>)

	N		Skewness	
	Statistic		Statistic	Std. Error
FactorScore_4_H2 <sub>b</sub>	1008		.173	.077
FactorScore_DepVariable_Disruption	1095		.865	.074
Valid N (listwise)	1008			

**Table 209.** Descriptive Statistics – Construct #5 (H2<sub>c</sub>)

	N		Skewness	
	Statistic		Statistic	Std. Error
FactorScore_5_H2 <sub>c</sub>	1072		-.281	.075
FactorScore_DepVariable_Disruption	1095		.865	.074
Valid N (listwise)	1072			

**Table 210.** Descriptive Statistics – Construct #6 (H3<sub>a</sub>)

	N	Skewness	
	Statistic	Statistic	Std. Error
FactorScore_6_H3 <sub>a</sub>	975	-.177	.078
FactorScore_DepVariable_Disruption	1095	.865	.074
Valid N (listwise)	975		

**Table 211.** Descriptive Statistics – Construct #7 (H3<sub>b</sub>)

	N	Skewness	
	Statistic	Statistic	Std. Error
FactorScore_7_H3 <sub>b</sub>	946	.270	.080
FactorScore_DepVariable_Disruption	1095	.865	.074
Valid N (listwise)	946		

**Table 212.** Descriptive Statistics – Dependent Variable (MRSD Score)

	N	Skewness	
	Statistic	Statistic	Std. Error
FactorScore_DepVariable_Disruption	1095	.865	.074
Valid N (listwise)	1095		

Sub-Sections 4.6.1 through 4.6.7 included a variety of statistical techniques which were recommended before conducting hypotheses testing. Table 213 summarizes findings for each of the seven proposed constructs as well as the dependent variable (FactorScore\_DepVariable\_Disruption).

**Table 213.** Summary of CFA, Reliability, Community, and Skewness

Construct	CFA	Reliability	Community	Skewness
Construct #1 (H1 <sub>a</sub> )	<ul style="list-style-type: none"> <li>Component matrix value for IV_LT_1 was less than 0.4</li> <li>Remove factor</li> </ul>	<ul style="list-style-type: none"> <li>Initial Cronbach's alpha was 0.721</li> <li>It increased to 0.894 after removing IV_LT_1</li> </ul>	<ul style="list-style-type: none"> <li>Mean communality value was 0.825</li> </ul>	<ul style="list-style-type: none"> <li>Statistic was -1.127</li> <li>Apply Spearman's</li> </ul>

Table 213. Continued.

Construct #2 (H1 <sub>b</sub> )	<ul style="list-style-type: none"> <li>• Component matrix value for IV_LT_5 was less than 0.4</li> <li>• Remove factor</li> </ul>	<ul style="list-style-type: none"> <li>• Initial Cronbach's alpha was 0.644</li> <li>• It increased to 0.711 after removing IV_LT_5</li> </ul>	<ul style="list-style-type: none"> <li>• Mean communality value was 0.651</li> </ul>	<ul style="list-style-type: none"> <li>• Statistic was -0.305</li> <li>• Apply Spearman's</li> </ul>
Construct #3 (H2 <sub>a</sub> )	<ul style="list-style-type: none"> <li>• All component matrix factors were greater than 0.4</li> </ul>	<ul style="list-style-type: none"> <li>• Initial and final Cronbach's alpha was 0.732</li> </ul>	<ul style="list-style-type: none"> <li>• Mean communality value was 0.658</li> </ul>	<ul style="list-style-type: none"> <li>• Statistic was 0.290</li> <li>• Apply Pearson's</li> </ul>
Construct #4 (H2 <sub>b</sub> )	<ul style="list-style-type: none"> <li>• All component matrix factors were greater than 0.4</li> </ul>	<ul style="list-style-type: none"> <li>• Initial and final Cronbach's alpha was 0.441</li> <li>• See additional information in footnote<sup>28</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Mean communality value was 0.476</li> </ul>	<ul style="list-style-type: none"> <li>• Statistic was 0.173</li> <li>• Apply Pearson's</li> </ul>
Construct #5 (H2 <sub>c</sub> )	<ul style="list-style-type: none"> <li>• As there is no overlapping, none of the components appear to be a construct</li> <li>• Forced CFA as EFA did <i>not</i> produce sufficient evidence to define questions for loading each of these factors</li> </ul>	<ul style="list-style-type: none"> <li>• Initial and final Cronbach's alpha was -0.407</li> <li>• More than likely due to a negative average covariance among items</li> </ul>	<ul style="list-style-type: none"> <li>• Mean communality value was 0.420</li> </ul>	<ul style="list-style-type: none"> <li>• Statistic was -0.281</li> <li>• Apply Spearman's</li> </ul>
Construct #6 (H3 <sub>a</sub> )	<ul style="list-style-type: none"> <li>• All component matrix factors were greater than 0.4</li> </ul>	<ul style="list-style-type: none"> <li>• Initial and final Cronbach's alpha was 0.723</li> </ul>	<ul style="list-style-type: none"> <li>• Mean communality value was 0.653</li> </ul>	<ul style="list-style-type: none"> <li>• Statistic was -0.177</li> <li>• Apply Spearman's</li> </ul>
Construct #7 (H3 <sub>b</sub> )	<ul style="list-style-type: none"> <li>• All component matrix factors were greater than 0.4</li> </ul>	<ul style="list-style-type: none"> <li>• Initial and final Cronbach's alpha was 0.861</li> </ul>	<ul style="list-style-type: none"> <li>• Mean communality value was 0.788</li> </ul>	<ul style="list-style-type: none"> <li>• Statistic was 0.270</li> <li>• Apply Pearson's</li> </ul>
Dependent Variable	<ul style="list-style-type: none"> <li>• N/A (MRSD was calculated from M, R, S, and D scores)</li> </ul>	<ul style="list-style-type: none"> <li>• N/A (MRSD was calculated from M, R, S, and D scores)</li> </ul>	<ul style="list-style-type: none"> <li>• N/A (MRSD was calculated from M, R, S, and D scores)</li> </ul>	<ul style="list-style-type: none"> <li>• Statistic was 0.865</li> <li>• Normally distributed</li> </ul>

<sup>28</sup> This construct was determined to be unreliable. Factor IV\_RBT\_5 (Mission Performance) may have been the contributing cause for a low Cronbach's alpha value of 0.441. More specifically, as part of the survey instrument, *mission performance* could have been interpreted differently by the research participants. It is recommended that future research should break this factor further down (e.g., # of persons trained, # of budgets approved, # of schedules released, etc.).

#### 4.7 Correlation Analysis and Hypotheses Testing

As indicated at the beginning of this chapter, the purpose of this study was to explore the following research questions: *Are there existing correlations among either a) leadership turbulence, b) resistance to business transformation, and/or c) lack of agility in military culture in respect to potential disruption of DoD business transformation processes in strategic commands? If so, what is the direction for any of the seven associated aspects (i.e., hypotheses H1<sub>a</sub> through H3<sub>b</sub>) given staff members' responses to the perceived disruption of business transformation?*

Table 214 through Table 220 outline the statistical results from having applied correlation analysis between the proposed constructs and the dependent variable (DV\_MRSDS). Then, Table 221 summarizes the bivariate correlation tests and the associated decisions on the research hypotheses.

**Table 214.** Correlations (Construct #1 – H1<sub>a</sub>)

		FactorScore_1 H1 <sub>a</sub>	FactorScore_ DV
Spearman's rho	FactorScore_1 _H1 <sub>a</sub>	Correlation Coefficient Sig. (2-tailed) N	1.000 .105** 1053
	FactorScore_ DepVariable_ Disruption	Correlation Coefficient Sig. (2-tailed) N	.105** .001 1053
			1095

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Table 215.** Correlations (Construct #2 – H1<sub>b</sub>)

			FactorScore_2 H1 <sub>b</sub>	FactorScore_ DV
Spearman's rho	FactorScore_2 _H1 <sub>b</sub>	Correlation Coefficient	1.000	.102**
		Sig. (2-tailed)		.001
		N	1030	1030
-----				
	FactorScore_ DepVariable_ Disruption	Correlation Coefficient	.102**	1.000
		Sig. (2-tailed)	.001	
		N	1030	1095
-----				
**. Correlation is significant at the 0.01 level (2-tailed).				

**Table 216.** Correlations (Construct #3 – H2<sub>a</sub>)

			FactorScore_3 H2 <sub>a</sub>	FactorScore_ DV
Person's correlation coefficient	FactorScore_3 _H2 <sub>a</sub>	Pearson Correlation	1	.035
		Sig. (2-tailed)		.264
		N	1047	1047
-----				
	FactorScore_ DepVariable_ Disruption	Pearson Correlation	.035	1
		Sig. (2-tailed)	.264	
		N	1047	1095

**Table 217.** Correlations (Construct #4 – H2<sub>b</sub>)

			FactorScore_4 H2 <sub>b</sub>	FactorScore_ DV
Person's correlation coefficient	FactorScore_4 _H2 <sub>b</sub>	Pearson Correlation	1	-.042
		Sig. (2-tailed)		.188
		N	1008	1008
-----				
	FactorScore_ DepVariable_ Disruption	Pearson Correlation	-.042	1
		Sig. (2-tailed)	.188	
		N	1008	1095

**Table 218.** Correlations (Construct #5 – H2<sub>c</sub>)

			FactorScore_5 H2 <sub>c</sub>	FactorScore_ DV
Spearman's rho	FactorScore_5	Correlation Coefficient	1.000	.105**
	_H2 <sub>c</sub>	Sig. (2-tailed)		.001
		N	1072	1072
	FactorScore_ DepVariable_ Disruption	Correlation Coefficient	.105**	1.000
		Sig. (2-tailed)	.001	
		N	1072	1095

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Table 219.** Correlations (Construct #6 – H3<sub>a</sub>)

			FactorScore_6 H3 <sub>a</sub>	FactorScore_ DV
Spearman's rho	FactorScore_6	Correlation Coefficient	1.000	.107**
	_H3 <sub>a</sub>	Sig. (2-tailed)		.001
		N	975	975
	FactorScore_ DepVariable_ Disruption	Correlation Coefficient	.107**	1.000
		Sig. (2-tailed)	.001	
		N	975	1095

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Table 220.** Correlations (Construct #7 – H3<sub>b</sub>)

			FactorScore_7 H3 <sub>b</sub>	FactorScore_ DV
Person's correlation coefficient	FactorScore_7	Pearson Correlation	1	.113**
	_H3 <sub>b</sub>	Sig. (2-tailed)		.000
		N	975	975
	FactorScore_ DepVariable_ Disruption	Pearson Correlation	.113**	1
		Sig. (2-tailed)	.000	
		N	975	1095

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Table 221.** Summary of Correlation Testing and Hypotheses Decisions

Construct	Summary of Correlation Analysis	Hypothesis & Decision
Construct #1 (H1 <sub>a</sub> )	<ul style="list-style-type: none"> <li>• <i>p</i>-value of 0.001 is statistically significant.</li> <li>• Correlation coefficient (0.105) has a positive value (supporting <i>direction</i> of proposed hypothesis).</li> <li>• Correlation coefficient (.105) has a low value (indicating that strength of relationship is weak).</li> </ul>	<ul style="list-style-type: none"> <li>• H1<sub>a</sub>: Frequent turnover/change of a Commander or Commanding General will be <u>positively</u> related to disrupting business transformation processes.</li> <li>• The data collected in this sample and analyzed in this research suggest an <u>acceptance</u> of the hypothesis.</li> </ul>
Construct #2 (H1 <sub>b</sub> )	<ul style="list-style-type: none"> <li>• <i>p</i>-value of 0.001 is statistically significant.</li> <li>• Correlation coefficient (0.102) has a positive value (supporting <i>direction</i> of proposed hypothesis).</li> <li>• Correlation coefficient (0.102) has a low value (indicating that strength of relationship is weak).</li> </ul>	<ul style="list-style-type: none"> <li>• H1<sub>b</sub>: Perceived inconsistencies of leadership guidance will be <u>positively</u> related to disrupting business transformation processes.</li> <li>• The data collected in this sample and analyzed in this research suggest an <u>acceptance</u> of the hypothesis.</li> </ul>
Construct #3 (H2 <sub>a</sub> )	<ul style="list-style-type: none"> <li>• <i>p</i>-value of 0.264 is marginally low and, therefore, is <i>not</i> statistically significant.</li> <li>• Correlation coefficient (0.035) has a positive value – as part of this research, however, a negative relationship was anticipated.</li> <li>• Correlation coefficient (0.035) has a low value (indicating that strength of relationship is weak).</li> </ul>	<ul style="list-style-type: none"> <li>• H2<sub>a</sub>: Collaboration with colleagues will be <u>negatively</u> related to disrupting business transformation processes.</li> <li>• The data collected in this sample and analyzed in this research suggest a <u>rejection</u> of the hypothesis.</li> </ul>
Construct #4 (H2 <sub>b</sub> )	<ul style="list-style-type: none"> <li>• <i>p</i>-value of 0.188 is marginally low and, therefore, is <i>not</i> statistically significant.</li> <li>• Correlation coefficient (-0.042) has a negative value – as part of this research, however, a positive relationship was anticipated.</li> <li>• Correlation coefficient (-0.042) has a low value (indicating that strength of relationship is weak).</li> </ul>	<ul style="list-style-type: none"> <li>• H2<sub>b</sub>: Reluctance to adopting different business processes will be <u>positively</u> related to disrupting business transformation processes.</li> <li>• The data collected in this sample and analyzed in this research suggest a <u>rejection</u> of the hypothesis.</li> </ul>

Table 221. Continued.

Construct #5 (H2 <sub>c</sub> )	<ul style="list-style-type: none"> <li>• <i>p</i>-value of 0.001 is statistically significant.</li> <li>• Correlation coefficient (0.105) has a positive value (supporting <i>direction</i> of proposed hypothesis).</li> <li>• However, given the negative <i>Cronbach's alpha</i> value of -0.407, this construct violates reliability and model assumptions.</li> <li>• Reinvestigation of the reverse coding process was conducted. The original coding also resulted in a negative <i>Cronbach's alpha</i> value.</li> <li>• Therefore, it <i>cannot</i> be considered a valid construct.</li> </ul>	<ul style="list-style-type: none"> <li>• H2<sub>c</sub>: Perceived negative assessment of process improvement initiatives will be <u>positively</u> related to disrupting business transformation processes.</li> <li>• The data collected in this sample and analyzed in this research suggest a <u>rejection</u> of the hypothesis.</li> </ul>
Construct #6 (H3 <sub>a</sub> )	<ul style="list-style-type: none"> <li>• <i>p</i>-value of 0.001 is statistically significant.</li> <li>• Correlation coefficient (0.107) has a positive value (supporting <i>direction</i> of proposed hypothesis).</li> <li>• Correlation coefficient (0.107) has a low value (indicating that strength of relationship is weak).</li> </ul>	<ul style="list-style-type: none"> <li>• H3<sub>a</sub>: Perceived disincentives for achieving increased organizational process efficiencies will be <u>positively</u> related to disrupting business transformation processes.</li> <li>• The data collected in this sample and analyzed in this research suggest an <u>acceptance</u> of the hypothesis.</li> </ul>
Construct #7 (H3 <sub>b</sub> )	<ul style="list-style-type: none"> <li>• <i>p</i>-value of 0.000 is statistically significant.</li> <li>• Correlation coefficient (0.113) has a positive value – as part of this research, however, a negative relationship was anticipated.</li> <li>• Correlation coefficient (0.113) has a low value (indicating that strength of relationship is weak).</li> </ul>	<ul style="list-style-type: none"> <li>• H3<sub>b</sub>: Dissent tolerance will be <u>negatively</u> related to disrupting business transformation processes.</li> <li>• The data collected in this sample and analyzed in this research suggest a <u>rejection</u> of the hypothesis.</li> </ul>

#### 4.7.1 Regression Analysis (Multiple Regression)

In order to further the analysis of this investigation, the scope of the research was extended to investigate the collective impact of the independent variables upon the total disruption score (i.e., MRSDS). Multiple (linear) regression was utilized to predict the



values on a quantitative outcome variable using several other predictor variables. More specifically, Cohen provides the following definition: “Multiple regression/correlation analysis (MRC) is a highly general and therefore very flexible data analytic system. Basic MRC may be used whenever a quantitative variable, the dependent variable ( $Y$ ), is to be studied as a function of, or in relationship to, any factors of interest, the independent variables (IVs)” (Cohen, 2003).

In order to verify the extent that collinearity exist in the independent variables in a multiple-regression analysis, a correlation analysis across all the independent variables was performed. Table 222 illustrates the correlations amongst all independent with the addition of the dependent variables (reiterating results presented in the previous section). Given the previous findings concluding in a lack of construct validity (Section 4.7), construct #5 (i.e., FS\_5\_H2<sub>c</sub>) was excluded when creating this matrix in SPSS. As illustrated in the table, factor scores FS\_1\_H1<sub>a</sub>, FS\_2\_H1<sub>b</sub>, and FS\_6\_H3<sub>a</sub> were considered statistically significant on the 0.01 level. Additionally, factor score FS\_7\_H3<sub>b</sub> was determined statistically significant on the 0.05 level.

Table 222. Correlations Matrix

		FS_ DV	FS_1_ H1 <sub>a</sub>	FS_2_ H1 <sub>b</sub>	FS_3_ H2 <sub>a</sub>	FS_4_ H2 <sub>b</sub>	FS_6_ H3 <sub>a</sub>	FS_7_ H3 <sub>b</sub>	
Spearman's rho	FactorScore_ DepVariable_ Disruption	Correlation Coefficient	1.000	.101**	.103**	.011	-.056	.103**	.064*
		Sig. (2-tailed)		.001	.001	.712	.075	.001	.047
		N	1095	1053	1030	1047	1008	975	946
	FactorScore_1_ H1 <sub>a</sub>	Correlation Coefficient	.101**	1.000	.253**	.134**	.043	.122**	.087**
		Sig. (2-tailed)	.001		.000	.000	.184	.000	.008
		N	1053	1053	1006	1012	979	945	919
	FactorScore_2_ H1 <sub>b</sub>	Correlation Coefficient	.103**	.253**	1.000	.110**	.022	.146**	.107**
		Sig. (2-tailed)	.001	.000		.001	.487	.000	.001
		N	1030	1006	1030	995	972	941	916
	FactorScore_3_ H2 <sub>a</sub>	Correlation Coefficient	.011	.134**	.110**	1.000	.494**	.178**	.524**
		Sig. (2-tailed)	.712	.000	.001		.000	.000	.000
		N	1047	1012	995	1047	983	945	931
	FactorScore_4_ H2 <sub>b</sub>	Correlation Coefficient	-.056	.043	.022	.494**	1.000	.118**	.337**
		Sig. (2-tailed)	.075	.184	.487	.000		.000	.000
	N	1008	979	972	983	1008	925	909	
FactorScore_6_ H3 <sub>a</sub>	Correlation Coefficient	.103**	.122**	.146**	.178**	.118**	1.000	.228**	
	Sig. (2-tailed)	.001	.000	.000	.000	.000		.000	
	N	975	945	941	945	925	975	879	
FactorScore_7_ H3 <sub>b</sub>	Correlation Coefficient	.064*	.087**	.107**	.524**	.337**	.228**	1.000	
	Sig. (2-tailed)	.047	.008	.001	.000	.000	.000		
	N	946	919	916	931	909	879	946	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Despite some level of marginal collinearity (i.e., correlation) across the independent variables, a multiple regression analysis was performed. It is important to notice the limitations of the validity of the results (i.e., multiple regression analysis with independent variables that are correlated). Therefore, linear regression analysis was then used to further study the hypotheses. There are several different regression analysis

methods (e.g., *Enter*, *Stepwise*, *Remove*, *Backward*, or *Forward*) for executing the regression analysis. In this study, the *Stepwise* method was chosen. For the independent variables, all factor scores except the non-reliable FactorScore\_5\_H2<sub>c</sub> were selected. Alternatively, for the dependent variable, the total disruption's factor score (i.e., FactorScore\_DepVariable\_Disruption) was entered. The data of the stepwise regression are displayed in Table 223 through Table 227.

**Table 223.** Variables Entered/Removed (Stepwise Regression)

Model	Variables Entered <sup>a</sup>	Variables Removed	Method
1	FactorScore_6_H3 <sub>a</sub>		Stepwise (Criteria: Probability-of-F-to-enter ≤ .050, Probability-of-F-to-remove ≥ .100).
2	FactorScore_2_H1 <sub>b</sub>		Stepwise (Criteria: Probability-of-F-to-enter ≤ .050, Probability-of-F-to-remove ≥ .100).
3	FactorScore_4_H2 <sub>b</sub>		Stepwise (Criteria: Probability-of-F-to-enter ≤ .050, Probability-of-F-to-remove ≥ .100).
a. Dependent Variable: FactorScore DepVariable Disruption			

**Table 224. Model Summary (Stepwise Regression)**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.114 <sup>a</sup>	.013	.012	.99472859
2	.145 <sup>b</sup>	.021	.019	.99126238
3	.169 <sup>c</sup>	.028	.025	.98815253

a. Predictors: (Constant), FactorScore\_6\_H3<sub>a</sub>  
b. Predictors: (Constant), FactorScore\_6\_H3<sub>a</sub>, FactorScore\_2\_H1<sub>b</sub>  
c. Predictors: (Constant), FactorScore\_6\_H3<sub>a</sub>, FactorScore\_2\_H1<sub>b</sub>, FactorScore\_4\_H2<sub>b</sub>

**Table 225. ANOVA<sup>a</sup> (Stepwise Regression)**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	10.670	1	10.670	10.783	.001 <sup>b</sup>
Residual	804.451	813	.989		
Total	815.121	814			
2 Regression	17.249	2	8.624	8.777	.000 <sup>c</sup>
Residual	797.872	812	.983		
Total	815.121	814			
3 Regression	23.224	3	7.741	7.928	.000 <sup>d</sup>
Residual	791.897	811	.976		
Total	815.121	814			

a. Dependent Variable: FactorScore\_DepVariable\_Disruption  
b. Predictors: (Constant), FactorScore\_6\_H3<sub>a</sub>  
c. Predictors: (Constant), FactorScore\_6\_H3<sub>a</sub>, FactorScore\_2\_H1<sub>b</sub>  
d. Predictors: (Constant), FactorScore\_6\_H3<sub>a</sub>, FactorScore\_2\_H1<sub>b</sub>, FactorScore\_4\_H2<sub>b</sub>

**Table 226. Coefficients (Stepwise Regression)**

Model	Unstandardized Coefficients <sup>a</sup>		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.048	.035		1.377	.169
FactorScore_6_H3 <sub>a</sub>	.115	.035	.114	3.284	.001
2 (Constant)	.043	.035		1.231	.219
FactorScore_6_H3 <sub>a</sub>	.102	.035	.102	2.896	.004
FactorScore_2_H1 <sub>b</sub>	.093	.036	.091	2.588	.010
3 (Constant)	.044	.035		1.283	.200
FactorScore_6_H3 <sub>a</sub>	.117	.036	.116	3.261	.001
FactorScore_2_H1 <sub>b</sub>	.094	.036	.092	2.639	.008
FactorScore_4_H2 <sub>b</sub>	-.087	.035	-.087	-2.474	.014

a. Dependent Variable: FactorScore\_DepVariable\_Disruption

**Table 227.** Excluded Variables (Stepwise Regression)

Model <sup>a</sup>	Beta In	t	Sig.	Partial Correlation <sup>29</sup>	Collinearity Statistics Tolerance <sup>30</sup>
1 FactorScore_1_H1 <sub>a</sub>	.079 <sup>b</sup>	2.264	.024	.079	.991
FactorScore_2_H1 <sub>b</sub>	.091 <sup>b</sup>	2.588	.010	.090	.980
FactorScore_3_H2 <sub>a</sub>	-.016 <sup>b</sup>	-.449	.654	-.016	.952
FactorScore_4_H2 <sub>b</sub>	-.085 <sup>b</sup>	-2.419	.016	-.085	.973
FactorScore_7_H3 <sub>b</sub>	.030 <sup>b</sup>	.841	.401	.030	.933
2 FactorScore_1_H1 <sub>a</sub>	.060 <sup>c</sup>	1.668	.096	.058	.928
FactorScore_3_H2 <sub>a</sub>	-.023 <sup>c</sup>	-.639	.523	-.022	.947
FactorScore_4_H2 <sub>b</sub>	-.087 <sup>c</sup>	-2.474	.014	-.087	.973
FactorScore_7_H3 <sub>b</sub>	.023 <sup>c</sup>	.643	.520	.023	.927
3 FactorScore_1_H1 <sub>a</sub>	.060 <sup>d</sup>	1.684	.093	.059	.928
FactorScore_3_H2 <sub>a</sub>	.033 <sup>d</sup>	.778	.437	.027	.684
FactorScore_7_H3 <sub>b</sub>	.064 <sup>d</sup>	1.656	.098	.058	.805

a. Dependent Variable: FactorScore\_DepVariable\_Disruption  
b. Predictors in the Model: (Constant), FactorScore\_6\_H3<sub>a</sub>  
c. Predictors in the Model: (Constant), FactorScore\_6\_H3<sub>a</sub>, FactorScore\_2\_H1<sub>b</sub>  
d. Predictors in the Model: (Constant), FactorScore\_6\_H3<sub>a</sub>, FactorScore\_2\_H1<sub>b</sub>, FactorScore\_4\_H2<sub>b</sub>

Commonly, the mathematical model (i.e., equation) for linear regression is expressed as shown in formula 4-2a, where  $\beta$  represents the linear parameter estimates and  $\varepsilon$  represents the error terms (MathWorks [Linear Model], 2014).

$$y = \beta_0 + \sum \beta_i X_i + \varepsilon_i \quad (4-2a)$$

Therefore, based on the coefficients output (Table 227), the proposed mathematical model for predicting business disruption (D) is shown in formulae (4-2b, 4-2c, 4-2d) where  $b_0$  (constant) = null;  $b_1 = [H3_a - \text{Disincentives for increased organizational}$

<sup>29</sup> Partial correlation: “[It] is the relationship between two variables after removing a third variable from just the IV” (Rovai, et al., 2012).

<sup>30</sup> Tolerance: “If the tolerance value is less than some cutoff value, usually 0.20, the independent should be dropped from the analysis due to multicollinearity” (Rovai, et al., 2012).

*process efficiencies*];  $b_2 = [H1_b - \text{Guidance inconsistencies}]$ ; and  $b_3 = [H2_b - \text{Adoption of different business processes}]$ .

$$\text{Disruption } (D) = b_0 + b_1 + b_2 + b_3 \quad (4-2b)$$

$$\text{Disruption } (D) = b_1 + b_2 + b_3 \quad (4-2c)$$

$$D = (0.116 \times H3_a) + (0.092 \times H1_b) + (-0.087 \times H2_b) \quad (4-2d)$$

According to Halmiwanger, “R Square is the ratio of the change in the dependent variable that is explained by a change in the independent variable[s]” (Halmiwanger, 2012). While the multiple regression is statistically significant at the 0.00 level, it must be noted that the model’s predictive power has a very low *R-squared* value of 0.028. However, a low *R-squared* value should *not* be considered inherently bad. In fact, Jank suggests that – based on the context – a low *R-squared* value can be fully expected within the field of social sciences. More specifically, he indicates “it is typically very hard to control extraneous factors when dealing with humans” (Jank, 2011). Also, as this research proposed a six-dimensional model, it is believed the multi-axis model itself may be a contributing factor for not fitting a straight line through the data points. While the initial findings of the regression analysis resulted in a low *R-squared* value, it offers an opportunity to investigate additional independent values (e.g., see focus groups’ summary; Appendix D – Table 246) and their potential impact on the disruption score. However, at this stage of the research, this study was focused on the direction(s) of the

correlations (e.g., positive or negative) of the hypotheses (vs. the strength of their relationships).

Finally, to further extend the scope of this research, the data analysis was concluded by producing a two-tailed bivariate correlations matrix (see Table 275 through Table 280 in Appendix M). The output of the correlation matrix – which includes all twenty-three independent variables and factor scores for the seven IVs and single DV – illuminates several statistically significant correlations on both the 0.01 and 0.05 level(s). Additionally, Table 281 through Table 284 (also listed in Appendix M) summarize all significant correlations where the correlation coefficient is greater or equal to 0.3.

#### *4.7.2 Summary of Validity Indices*

Chapter 3 (Methodology), Section 3.4, outlined research design strategies and safeguards to respond to (potential) criticism. As part of summarizing the data results, it is prudent to ensure that all validity indices (see Table 228) were addressed. For this particular research, a data analysis flowchart/research guideline was developed (see Figure 6 and Figure 7 in Chapter 3) in order to enhance the validity of the listed indices. In review, the following research activities were conducted: a) literature review; b) research framework review by advisory committee; c) survey review by subject matter experts at the Army Research Institute; d) facilitation of survey pilot; e) data analysis and interpretation; f) confirmatory and exploratory factor analysis; g) communality and skewness tests; h) reliability testing; i) bivariate data analysis; and j) sharing of research results with subject matter experts and organizations.

**Table 228.** Definitions of Validity Indices <sup>31</sup>

Validity Index	Definition	Test/Activity
Construct Validity	The extent to which indicators are associated with each other and represent a single concept. (Hattie, 1985)	<ul style="list-style-type: none"> <li>As part of the data analysis, a check for normality (e.g., skewness, analysis, normal distribution, and multicollinearity) was conducted.</li> <li>See Chapter 4, Sub-Section 4.6.7, Table 213 for additional details on statistics, including Cronbach's alpha, communalities, and skewness.</li> </ul>
Content Validity	The degree to which the measurement instrument covers the domain of the concept. (Carmines & Zeller, 1979; Kerlinger, 1986)	<ul style="list-style-type: none"> <li>Developed survey instrument and verified content validity through continued literature review.</li> <li>Research director/committee approved the survey and associated metrics to ensure external validity.</li> </ul>
External Validity	The degree to which the research findings [seem] to prove or disprove the research questions.	<ul style="list-style-type: none"> <li>Prior to the survey release, the questionnaire was reviewed and approved by a subject matter expert at the Army Research Institute (ARI).</li> <li>More specifically, the senior research psychologist provided feedback and change recommendations which were integrated into the survey.</li> <li>The survey review was also staffed in TRADOC. As part of the chain of command, senior military officers (O6 and above) and civilians (on GS-13 and GS-15 level) from the following offices approved the questionnaire: <ul style="list-style-type: none"> <li>ARI, CKO, DCG, DCoS, DSJA, G-6, IG, PAO, and SJA</li> <li>See Appendix C, Table 235, for additional details.</li> </ul> </li> </ul>

<sup>31</sup> Adapted from "Research in Engineering Management" (Landaeta, 2008) and "An Empirical Comparison of Statistical Construct Validation Approaches" (Ahire & Devaraj, 2001). Chapter 3 (Table 7) includes the original table (columns: Validity Index | Definition | Method Test) as published by Ahire, et al., and Landaeta. This modified table includes specific tests and activities (providing references to chapters/sections/tables) to demonstrate that all validity indices were addressed.



Table 228. Continued.

Face Validity	The extent to which the measurement instrument (after it has been developed) 'looks like' it measures what it is intended to measure. (Nunnally & Bernstein, 1978)	<ul style="list-style-type: none"> <li>• The research champion (i.e., Chief Knowledge Officer at TRADOC) conducted a survey pilot with 16 staff members (within the research target population).</li> <li>• All change recommendations (provided by 9 staff members) were carefully reviewed and addressed by the researcher.</li> </ul>
Internal Validity	The validity of the statements regarding the effect of the independent variable(s) on the dependent variable(s). (Pedhazur & Pedhazur-Schmekin, 1991)	<ul style="list-style-type: none"> <li>• Correlation and regression analysis were conducted.</li> <li>• Data results were analyzed and interpreted by the researcher (see Chapters 4 and 5).</li> </ul>
Nomological Validity	The extent to which constructs of the framework relate to each other in a manner consistent with theory and/or prior research. (Peter, 1981)	<ul style="list-style-type: none"> <li>• Conducted nomological validity (i.e., bivariate and multivariate analysis).</li> <li>• This includes bivariate correlation tests between the constructs and the dependent variable (see Table 214 through Table 220) as well as a summary of the correlation tests and hypotheses decisions (Table 221).</li> </ul>
Research Model Validity	The degree to which the research model and the research method [seem] to be able to achieve the research objectives.	<ul style="list-style-type: none"> <li>• In accordance with the data analysis flowchart (see Chapter 3, Section 3.12), the research committee verified the validity of the proposed research model (during the initial phase of this study).</li> </ul>
Research Topic Validity	The extent to which the investigation's objectives address current literature gaps and practitioners' concerns/challenges.	<ul style="list-style-type: none"> <li>• The literature review included an investigation of existing publications from across 69 peer-reviewed journals (see Appendix F, Table 252).</li> <li>• A summary of 49 journal articles (primary and secondary sources) and books are provided in Chapter 2 of this research.</li> <li>• Table 1 provides a gap analysis identifying areas where this study may contribute to the larger body of knowledge. Table 2, summarizes 39 selected journal articles.</li> </ul>

## CHAPTER 5

### CONCLUSIONS AND RECOMMENDATIONS

This chapter summarizes the research results, limitations, implications to engineering managers, recommendations, and conclusions of the dissertation. Furthermore, it will also address the extent to which the findings can be used in a practical sense with respect to business transformation at the strategic command level. Finally, some key recommendations are offered for academia, military, and industry organizations.

As a means of summarizing the purpose of the study and some of its key findings, it is necessary to present the original interest in conducting the research. In order to design, implement, and manage transformation initiatives, proper planning and a keen understanding of myriad factors is essential. Transformation initiatives are frequently conducted in large/complex systems and organizations that deal with tumultuous change processes in general. These organizations must be prepared to effectively address changing trends – influenced by both internal and external factors, which may or may not be beyond the organization's control. For example, socio-political forces such as budgetary constraints often have tremendous bearing on how organizations need to position themselves for future work and mission planning. The impact of such external forces (e.g., sequestration in the government sector) will be briefly discussed in the limitations section of this chapter. Alternatively, internal factors such as leadership turbulence, resistance to change, and organizational culture have an indirect – and in some cases direct – impact on the success or failure of transformation efforts. Such

internal factors are further exacerbated when “[individuals] also deliberately omit acquired knowledge [and] information” (Chua, Storey, & Chiang, 2012).

### 5.1 Research Results (Hypotheses)

This section includes the conclusion of the testing of seven hypotheses. As part of this study, these hypotheses fall under the following three research categories: 1) *Leadership Turbulence*; 2) *Resistance to Business Transformation*; and 3) *Lack of Agility in Military Culture*. Furthermore, beyond the interpretation of the hypotheses, additional work was performed through reviewing a full correlation matrix which provides every combination of variables (both independent variables and research constructs).

5.1.1 *H1<sub>a</sub>: Frequent turnover/change of a Commander or Commanding General will be positively related to disrupting business transformation processes*

#### 5.1.1.1 *Interpretation of Hypothesis H1<sub>a</sub>*

The results of the statistical analysis conducted on the data collected from this sample demonstrate a positive and statistically significant correlation between *frequency of leadership turnover* and *disruption of business transformation* at the 0.01 significance level. Therefore, according to the survey data, frequent modifications of the commander’s intent and any associated changes in both unit goals and unit priorities – triggered by a change of the commanding general – appear to be associated to disruption of business transformation implementation initiatives. Moreover, these findings can be linked to comments that were gathered during the initial focus groups. For example, several military and civilian staff members indicated that “we are in a continuous cycle of

reinventing processes.” Conversely, the results suggest that the actual *number of generals* (under whom staff members have served) has no particular influence on either success or failure of BTI implementation. This is a salient point because it differentiates between the number of change outs (i.e., turn-over) of commanding generals and the sorts of changes in direction brought about by said changes in leadership. The research provided greater insight regarding this nuance in understanding in terms what the workers experience as disruptive to achieving transformation goals.

#### 5.1.1.2 *Analysis of Full Correlation Matrix (all combinations of variables)*

Additional work performed through a full correlation table (Appendix M – Table 275) show very interesting findings which are noteworthy with respect to the association of the research category *Frequent Turnover/Change of a Commander or Commanding General* and several other independent variables. For example, the variable *Number of Generals* has statistical significant positive associations with other variables such as: Commander’s Intent, Changes in OE, Changes in Policies, Fluctuating Guidance, Knowledge/Info Sharing, Increase Collaboration, Embrace Collaboration, Mission Performance, Unwelcome Changes, Loss of Manpower, Loss of Funding, Encourage Feedback, Convey Feedback, and Consider Feedback. Moreover, the variable *Number of Generals* has also statistical significant positive associations with research constructs such as: “Collaboration with colleagues”, “Disincentives for increased organizational process efficiencies”, and “Dissent tolerance.”

Conversely, *Number of Generals* was found to have statistical significant negative associations with the following variables and constructs: Unnecessary Changes; construct "Evaluation of required changes."

These findings demonstrate that as frequent turnover/change of CGs increases, there is an expected – and to some extent logical – increase in changes in commander's intent, changes in guidance, and staff perceptions of unwelcome changes. Moreover, of particular interest are the findings that associate the CG's turnover with loss of manpower, loss of funding, and the perception of unnecessary changes which lead to the suggestion that a CG's turnover can be perceived as a risky and unwelcome nature of a strategic military command for which strategic personnel may have developed mitigation strategies.<sup>32</sup>

5.1.2 *H1<sub>b</sub>: Perceived inconsistencies of leadership guidance will be positively related to disrupting business transformation processes*

5.1.2.1 *Interpretation of Hypothesis H1<sub>b</sub>*

The results of the data analysis demonstrate a positive and statistically significant correlation between *perceived inconsistencies of leadership guidance* and *disruption of business transformation* at the 0.01 significance level. Based on the survey data, it can be argued that the degree to which *current* and *previous guidance* (i.e., changes in regulation, changes in policy, or changes in directional guidance) fluctuate has a direct impact on achieving the successful delivery of business transformation processes.

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<sup>32</sup> Further interpretations of these results are out of the scope of this research and recommended for future investigations.

### 5.1.2.2 Analysis of Full Correlation Matrix (all combinations of variables)

Based on the survey data and an evaluation of the full correlation table (Appendix M – Table 276), significant associations between the research category *Guidance Inconsistencies* and several other independent variables should be emphasized. For example, the variable *Fluctuating Guidance* has statistical significant positive associations with other variables such as: Number of Generals, Commander's Intent, Re-evaluation Unit Goals, Re-evaluation Priorities, Changes in OE, Changes in Regulations, Changes in Policies, Knowledge/Info Sharing, Increase Collaboration, Embrace Collaboration, Prefer Status Quo, Mission Performance, Adopt Mandated Change, Changes in Work, Unwelcome Changes, Loss of Manpower, Loss of Funding, Unwillingness to Adopt, Encourage Feedback, Convey Feedback, and Consider Feedback. Furthermore, the variable *Fluctuating Guidance* has also statistical significant positive associations with research constructs such as: "Frequent turnover/change of a Commander or Commanding General", "Guidance inconsistencies", "Collaboration with colleagues", "Adoption of different business processes", "Disincentives for increased organizational process efficiencies", and "Dissent tolerance."

Conversely, similar to the *Leadership Turbulence* aspect (category H1<sub>a</sub>), *Fluctuating Guidance* was found to have statistical significant negative associations with the following variables and constructs: Unnecessary Changes; construct "Evaluation of required changes."

The findings indicate that as the amount of turnover between CGs increases from one CG to the next, this phenomenon increases the likelihood of re-evaluation of both unit goals and priorities. It also results in a perception amongst staff that there has been a resort to status quo thinking. These associations are of particular interest as they further substantiate what was learned from the focus groups' feedback. For instance, a staff member expressed the following insight: "Look, we did *this* two leaders ago and it did not work. Why should *it* work now?"<sup>32</sup>

5.1.3 *H2<sub>a</sub>: Collaboration with colleagues will be negatively related to disrupting business transformation processes*

5.1.3.1 *Interpretation of Hypothesis H2<sub>a</sub>*

The results of the data analysis did *not* demonstrate any negative correlation between *collaboration with colleagues* and *disruption of business transformation*. This suggests collaboration amongst staff members and/or co-workers neither improves nor hinders the successful implementation of business transformation initiatives.

5.1.3.2 *Analysis of Full Correlation Matrix (all combinations of variables)*

Based on the survey data and an evaluation of the full correlation table (Appendix M – Table 276), significant associations between the research category *Collaboration with Colleagues* and several other variables should be reiterated. For example, the variable *Knowledge/Information Sharing* has statistical significant positive associations with other variables such as: Number of Generals, Commander's Intent, Re-evaluation Unit Goals, Re-evaluation Priorities, Changes in OE, Changes in Regulations, Changes in

Policies, Fluctuating Guidance, Increase Collaboration, Embrace Collaboration, Prefer Status Quo, Mission Performance, Adopt Mandated Change, Changes in Work, Unwelcome Changes, Loss of Manpower, Loss of Funding, Unwillingness to Adopt, Encourage Feedback, Convey Feedback, and Consider Feedback. Also, the variable *Knowledge/Information Sharing* has statistical significant positive associations with research constructs such as: “Frequent turnover/change of a Commander or Commanding General”, “Guidance inconsistencies”, “Collaboration with colleagues”, “Adoption of different business processes”, “Disincentives for increased organizational process efficiencies”, and “Dissent tolerance.”

Alternatively, *Knowledge/Information Sharing* was found to have statistical significant negative associations with the following construct: “Evaluation of required changes.”

The data in correlation matrix suggest that there are statistically significant positive associations between a) knowledge and information-sharing and b) conveying/considering staff members’ feedback through the chain of command. Nevertheless, independent from the interpretation of the hypothesis, these significant factor associations do *not* imply that the implementation of business transformation initiatives is *more likely* to succeed.<sup>32</sup>



5.1.4 *H2<sub>b</sub>: Reluctance to adopting different business processes will be positively related to disrupting business transformation processes*

5.1.4.1 *Interpretation of Hypothesis H2<sub>b</sub>*

The results of the data analysis did *not* demonstrate any positive correlation between *reluctance to adopting difference business processes* and *disruption of business transformation*. This implies that the extent to which staff members are reluctant to adopt different business processes cannot necessarily be linked to the success or failure of implementing business transformation initiatives.

5.1.4.2 *Analysis of Full Correlation Matrix (all combinations of variables)*

Based on the survey data and an evaluation of the full correlation table (Appendix M – Table 277), significant associations between the research category *Adoption of Different Business Processes* and several other variables should be highlighted. For example, the variable *Prefer Status Quo* has statistical significant positive associations with other variables such as: Commander's Intent, Changes in OE, Fluctuating Guidance, Knowledge/Info Sharing, Increase Collaboration, Embrace Collaboration, Mission Performance, Adopt Mandated Change, Unwelcome Changes, Unwillingness to Adopt, Encourage Feedback, Convey Feedback, and Consider Feedback. Furthermore, the variable *Prefer Status Quo* has statistical significant positive associations with research constructs such as: "Collaboration with colleagues", "Adoption of different business processes", and "Dissent tolerance."

Conversely, similar to the *Leadership Turbulence* aspect (research categories H1<sub>a</sub> and H1<sub>b</sub>), *Prefer Status Quo* (as part of the *Resistance to Business Transformation* aspect) was found to have statistical significant negative associations with the following variable and construct: Unnecessary Changes; construct “Evaluation of required changes.”

These results of this test suggest that there is an association between a) the preference of status quo and b) the unwillingness to adapt as well as changes being viewed as unwelcome. At the same time, independent from the interpretation of the hypothesis, these significant factor associations do *not* imply that the implementation of business transformation initiatives is *less likely* to succeed.<sup>32</sup>

5.1.5 *H2<sub>c</sub>: Perceived negative assessment of process improvement initiatives will be positively related to disrupting business transformation processes*

5.1.5.1 *Interpretation of Hypothesis H2<sub>c</sub>*

The results of the data analysis did *not* demonstrate a positive relationship between any *perceived negative assessments of process improvement initiatives* and *disruption of business transformation*. This suggests that staff members’ negative evaluation of, e.g., organizational changes, policy impact, or budgetary reallocation, etc. does *not* necessarily result in unwanted outcomes with respect to business transformation efforts.

5.1.5.2 *Analysis of Full Correlation Matrix (all combinations of variables)*

Based on the survey data and an evaluation of the full correlation table (Appendix M – Table 278), significant associations between the research category *Evaluation of*

*Required Changes* and several other variables should be emphasized. For example, the variable *Unnecessary Changes* has statistical significant positive associations with other variables such as: Commander's Intent, Re-evaluation Unit Goals, and Re-evaluation Priorities. Additionally, the variable *Unnecessary Changes* has statistical significant positive associations with research constructs such as: "Frequent turnover/change of a Commander or Commanding General" and "Evaluation of required changes."

Alternatively, the variable *Unnecessary Changes* (as part of the *Resistance to Business Transformation* aspect) was found to have statistical significant negative associations with the following variables and constructs: Number of Generals, Fluctuating Guidance, Increase Collaboration, Prefer Status Quo, Mission Performance, Unwelcome Changes, Loss of Funding, Unwillingness to Adopt, Encourage Feedback, and Consider Feedback; construct "Guidance inconsistencies"; construct "Adoption of different business processes"; construct "Disincentives for increased organizational process efficiencies"; and construct "Dissent tolerance."

There is an association between a) negative evaluations of organizational changes and b) the re-evaluation of unit goals and priorities. Conversely, these significant factor associations do *not* imply that the implementation of business transformation efforts are either hindered or hampered.<sup>32</sup>

5.1.6 *H3<sub>a</sub>: Perceived disincentives for achieving increased organizational process efficiencies will be positively related to disrupting business transformation processes*

5.1.6.1 *Interpretation of Hypothesis H3<sub>a</sub>*

The results of the data analysis demonstrate a positive and statistically significant correlation between *perceived disincentives for achieving increased organizational process efficiencies* and *disruption of business transformation* at the 0.01 significance level. This suggests that staff members' achieved process efficiencies may not be perceived as rewarding in a way that could benefit either the individual or the unit. For example, one of the staff member's comments echoes such interpretation: "When I hear efficiencies I hear I'm gonna get to keep what I have and do more work, or I keep the work that I have but with fewer people. So, I don't come in with the idea this is necessarily gonna be good for me. Introducing the human factor, this is probably making my life a little bit harder when we do this efficiency process. And that's where the resistance [comes] from. It's not that people don't want to do things better, but they're not rewarded for the efficiencies."

5.1.6.2 *Analysis of Full Correlation Matrix (all combinations of variables)*

Based on the survey data and an evaluation of the full correlation table (Appendix M – Table 278), significant associations between the research category *Disincentives for Increased Organizational Process Efficiencies* and several other variables should be highlighted. For example, the variable *Unwillingness to Adopt* has statistical significant positive associations with other variables such as: Changes in OE, Fluctuating Guidance,

Knowledge/Info Sharing, Increase Collaboration, Embrace Collaboration, Prefer Status Quo, Mission Performance, Adopt Mandated Change, Unwelcome Changes, Loss of Manpower, Loss of Funding, Encourage Feedback, Convey Feedback, and Consider Feedback. Moreover, the variable *Unwillingness to Adopt* has statistical significant positive associations with research constructs such as: “Guidance inconsistencies”, “Collaboration with colleagues”, “Adoption of different business processes”, “Disincentives for increased organizational process efficiencies”, and “Dissent tolerance.”

Conversely, the variable *Unwillingness to Adopt* (as part of the *Lack of Agility in Military Culture* aspect) was found to have statistical significant negative associations with the following variable and construct: Unnecessary Changes; construct “Evaluation of required changes.”

These findings demonstrate that there is an association between a) staff members’ unwillingness to adopt/support, e.g., process improvement initiatives and b) loss of resources or manpower. Prior to collecting the survey data, feedback from the focus groups provided insights which validate the factor associations. For example, one staff member expressed the following concern: “I don’t get to reinvest the people I save; [instead] they are taken from me. I don’t get to take the savings from a process and make my product better; I am given more work to fill that gap instead.”<sup>32</sup>

5.1.7 *H3<sub>b</sub>: Dissent tolerance will be negatively related to disrupting business transformation processes*

5.1.7.1 *Interpretation of Hypothesis H3<sub>b</sub>*

The results of the data analysis did *not* demonstrate a negative relationship between *dissent tolerance* and *disruption of business transformation*. This suggests that staff members' feedback or potential disagreement to proposed changes – conveyed to and considered by the leadership – may not influence different outcomes with respect to implementing business transformation initiatives.

5.1.7.2 *Analysis of Full Correlation Matrix (all combinations of variables)*

Based on the survey data and an evaluation of the full correlation table (Appendix M – Table 279), significant associations between the research category *Dissent Tolerance* and several other variables should be reiterated. For example, the variable *Encouraging Feedback* has statistical significant positive associations with other variables such as: Number of Generals, Fluctuating Guidance, Knowledge/Info Sharing, Increase Collaboration, Embrace Collaboration, Prefer Status Quo, Mission Performance, Adopt Mandated Change, Unwelcome Changes, Loss of Manpower, Loss of Funding, Unwillingness to Adopt, Convey Feedback, and Consider Feedback. Furthermore, the variable *Encouraging Feedback* has statistical significant positive associations with research constructs such as: “Guidance inconsistencies”, “Collaboration with colleagues”, “Adoption of different business processes”, “Disincentives for increased organizational process efficiencies”, and “Dissent tolerance.”

Conversely, the variable *Encouraging Feedback* (as part of the *Lack of Agility in Military Culture* category) was found to have statistical significant negative associations with the following variables and constructs: Unwelcome Changes; construct "Evaluation of required changes."

The data indicate that there is an association between a) encouraging staff members' feedback and b) conveying feedback through the chain of command. However, independent from the interpretation of the hypothesis, these significant factor associations do *not* imply that the implementation of business transformation initiatives is *more likely* to succeed.<sup>32</sup>

## 5.2 Limitations

As with any research endeavor, limitations exist in terms of research approach, target population, time span considered, and other aspects that may not be under the researcher's control. One of the most important limitations during this research process was that of the political climate which emerged while preparing for the data collection phase. More specifically, in early/mid 2013, the U.S. federal government instituted automatic budget cuts, otherwise known as *sequestration*. This caused a cascading effect whereby U.S. government and military organizations were impacted by an administrative furlough. As a result, federal workers were either a) encouraged to accept temporary leave without benefits or b) faced by a reduction in force (RIF). One of the outcomes from this situation was increased uncertainty and anxiety amongst certain members of the target population causing the researcher to recalibrate the originally proposed survey

release date. Once the initial phases of the sequestration had passed, the survey was then released to the entire proposed sample population. However, it is hard to predict to what extent, if at all, this situation may have impacted the survey results.

Another limitation that should be addressed is the nature of the research scope. This study was only intended to gain an initial insight into the phenomena of disruption of business transformation, so it is not considered a predictive research or a longitudinal study. Instead, it was a point-in-time snapshot in year 2013 of the target population's opinions within in a very specific organizational context – a strategic-level command (e.g., TRADOC) within the Department of Defense. Therefore, further research could expand on the study of business transformation at TRADOC, but also include other higher headquarters in order to further support the generalizability of this research.

An additional potential internal bias may relate to the survey instrument and its associated questions which focused on staff members' insights on subjects related to their current commanding general. Although an operating assumption, the following questions could not be entirely ignored: *To what extent, if at all, did research participants feel compelled to withhold pertinent information about their leadership? To what extent, if at all, were all survey questions honestly answered given the questions about topics such as leadership guidance?*

Finally, while the analysis of variance (ANOVA) yielded statistically significant correlations (at the 0.000 level) among some of the variables and factor scores, it should



be noted that the mathematical model (i.e., linear regression) resulted in a very low *R-squared* value. Therefore, the predictive power of the proposed math model (see Chapter 4, equation 4-2d) is considered low. However, there are factors not taken into consideration in the overall research that may impact the disruption of business transformation. This is a salient point that should be reserved for future research.

### **5.3 Implications and Future Research**

The findings from this research study have several important implications across a range of fields and professions, but for the purposes of this effort, this section will focus only on those related to engineering management, academia, and the military. The implications are profound and relevant to contemporary problems that continue to frustrate and vex leaders responsible for solving problems in dynamic, ever-changing complex environments. With respect to the three research categories (i.e., leadership turbulence, resistance to business transformation, and lack of agility in military culture), the following implications should be noted.

#### *5.3.1 Leadership Turbulence*

Based on the initial qualitative research findings (i.e., focus groups), staff members expressed high levels of frustration as it relates to their perception of inconsistent leadership guidance triggered by a change of a commander or commanding general. The key implication in this case is that higher levels of frustration amongst staff are likely to impact the organizational climate (e.g., moral). If so, continued disruption – as part of any business transformation process – may be experienced. Therefore, as the study

confirmed a positive correlation between a) frequent turnover of a commander or commanding general and b) disruption of business transformation processes, the findings of this research should be taken into account so as to help mitigate program/project misfires and/or failures. Furthermore, the research results may prove useful in long-range planning such as during the implementation of either a Business Enterprise Architecture (BEA) or risk management framework as outlined in both the *2012 and 2013 Annual Report on Business Transformation* as well as the *Strategic Management Plan (SMP) – The Business of Defense FY2014 - FY2015* (Department of Defense, 2013; Department of the Army, 2012, 2013a).

### *5.3.2 Resistance to Business Transformation*

While the initial qualitative portion provided sufficient feedback to justify pursuing this element of the research, the quantitative portion of the mixed methodology failed to confirm any of the underlying hypotheses for this category. It may be necessary to further investigate this phenomenon via additional research to help uncover if there was some level of imbedded bias when answering questions in survey format. Essentially, this line of thinking is based upon focus group participants' remarks, e.g., a) unwillingness to relinquish resources, b) unwillingness to change, c) out wait the change (i.e., staff may be waiting for an incumbent leader to transfer/leave).

### *5.3.3 Lack of Agility in Military Culture*

The findings confirmed a positive relationship between disincentives for increased organizational process efficiencies and disruption of business transformation initiatives.

Therefore, there is an implication that staff members are not as willing to embrace future process improvement efforts when those efficiencies derived from such improvements had previously resulted in either loss of resources or loss of manpower (i.e., there is some perception that achieving process efficiencies could have negative consequences for the unit and/or individual).

#### 5.3.4 *Future Research*

In terms of future research, the results from this study indicate the need for an in-depth inquiry in order to learn more about the contexts in which workers address transformation challenges. Moreover, as the engineering management field continues to develop and establishes new theories, it is essential that dedicated attention be given to understanding the subtle nuances of complex systems, particularly those aspects that deal with the dynamics of cultural change that are often tumultuous. Further, engineers might find ways to expand upon the body of knowledge that will help to alleviate the negative influence of disruptive factors on transformation goals and objectives.

#### **5.4 Recommendations**

In this section, the researcher offers recommendations that could either a) assist with future research or b) provide additional guidance to engineering practitioners, especially those working in the domain/arena of risk and change management, planning, and/or complex systems in general. The recommendations were primarily based on the qualitative portion of the research process. Specifically, they were derived from participants' responses to the following question: *What could TRADOC do differently to*

*improve implementation of business transformation initiatives?* These recommendations are presented in manner specific to academia, military, and practitioners in the industry. Also, as this research is considered *exploratory*, a proposed agenda of research opportunities and questions is outlined in Sub-Section 5.4.4.

#### 5.4.1 *Academia*

Within academia, there is a wide range of opportunities to inform new and emerging fields of thought based on the findings from this research effort. Institutions of higher learning, scientific research institutes, and military schools may benefit from the research results. For example, survey respondents provided much needed insight in terms of learning more about context and human aspects of social constructs. It is highly recommended that the academic community considers expanding its educational offerings to engineering management students such that a wider variety of classes in the behavioral and human factors sciences become available. Also, it may be necessary to investigate the feasibility of including these fields as core requirements for engineering science.

It is also recommended that academia strives toward opening up more pathways of experiential learning for engineers so that they can gain first-hand knowledge working with experts in the human behavior discipline(s). There is scholarly support for expanding engineering sciences to include a variety of fields so that professional engineers can increase their likelihood of formulating solutions, including those factors heavily influenced by human behavior. For instance, Stafford Beer – a cybernetics expert

and research scholar – articulates the necessity for the scientific research community to re-imagine the manner in which planners and managerial problem-solvers prepare to learn new ways of doing business (Beer, 1972).

#### *5.4.2 Military*

First, as pointed out in Chapter 2 of this report, it is important to note that transformation initiatives typically have high failure rates. Research suggests that 70% to 80% of any transformation efforts not only tend to fail overall, but also fall short of their intended goals and objectives (Lyons, et al., 2009). This knowledge is vitally important, as it will help risk managers and planning practitioners to factor it into transformation processes enabling risk mitigation over time. For instance, when a transformation initiative involves cultural changes within the military context, it would be prudent to consider aspects such as turnover frequency, rigidity, and hierarchical leadership structures in order to properly calibrate potential solutions.

Additionally, several other recommendations are based on feedback from the survey participants. Despite being derived from the complex organizational system under study (i.e., U.S. Army TRADOC), the recommendations can be generalized to similar strategic military command organizations. These include but are not limited to the following suggestions: 1) more concerted coordination efforts should be made to include staff earlier on in the planning processes so that higher level military executives can benefit from the knowledge and expertise of front-line workers and all personnel across the transformation planning spectrum; 2) re-evaluate the traditional bureaucratic nature of

decision-making processes, hierarchical authority, and stove-piped work processes as these were viewed by survey respondents as impediments to successful implementation of BTIs; 3) provide means for planning and analysis of existing work processes in order to ensure proper identification of requirements and value-added improvements; 4) invest more time clarifying business transformation goals, particularly as it relates to collaboration with the commercial sector. According to the qualitative feedback, lack of understanding as to how BTIs are linked to a unique military mission suggests this may be one main reason why staff members may resist business transformation in general; 5) invest more time, effort, and financial resources for risk mitigation and management training and education. This is consistent with the guiding principles of the *Strategic Management Plan* (Department of Defense, 2013).<sup>33</sup>

In terms of risk management and building teams to devise risk mitigation solutions, it is highly advisable to ensure teams are multi-disciplined. Furthermore, access to staff or consultants with expertise in the behavioral sciences and/or industrial/organizational psychology should be arranged. As pointed out in earlier portions of this study, the engineering sciences are somewhat ill-equipped to effectively address major knowledge gaps related to human factors, human behavior, and social phenomena which have some degree of impact on transformation, continuous process improvement or solution architecture endeavors. Thus, there is a need for better understanding disruptive factors that are likely to have a negative impact on program failure rates or project misfires.

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<sup>33</sup> Refer to Appendix M for the complete list of comment categories and their associated definitions.

Finally, it is recommended that both executive level decision-makers and key managerial staff consider how one approaches design structures and processes in general. The following questions ought to be examined: *What factors are included in planning outlines as solutions are developed? How do teams view the underpinnings of a problem? Is proper and accurate calibration taking place in order to ensure key factors are not left out?*

#### 5.4.3 Industry/Practitioners

While it is believed that engineers do an exceptional job of focusing on technical aspects as well as general project planning, the engineering management field still leaves much to be desired in terms of expert knowledge of human and social implications with respect to building theories, models, and/or systems. The engineering community may be able to improve its contribution to praxis by establishing new standards of professional certifications that will include some level of multi-disciplinary expertise with attention to increased understanding of human behavior, social interaction, and organizational context. At the very least, it might be extremely advantageous for more engineers, scientists, and planners to attend educational seminars, symposia, and learning institutes where they gain more insight into these phenomena and, therefore, benefit their chosen profession.

As for how the risk management field may be able to utilize the research findings, it is suggested that practitioners consider further investigation on how factors such as leadership turbulence can be integrated into computational analyses when working with

transformation initiatives within DoD settings. Through applying, e.g., decision tree analysis, the field may be able to garner even more information as part of the knowledge-building process.

#### 5.4.4 Research Opportunities and Research Questions

Given this research is considered exploratory, one of the critical outcomes of such study is to propose additional topics, questions, and/or opportunities. These may further the results of this investigation and, thereby, contribute to the wider body of knowledge.

Table 229 outlines recommendations for potential future research initiatives.

**Table 229.** Research Opportunities and Research Questions

Research Opportunities and Research Questions	
<b>A. Research Opportunities</b>	A1 The authors Katz and Kahn offer a durable framework that describes cultural and psychological factors bearing upon organizational effectiveness, including the ability to adapt to changing internal and environmental conditions (Katz & Kahn, 1966). Expanding the investigation about factors which may disrupt business transformation in a military strategic may offer new solutions and cost savings to DoD.
	A2 The reward and promotion policies and processes within the context of which personnel, both civilian and military, pursue career aspirations should also be explored to test the degree to which they are aligned with the requirements of business transformation initiatives. The author Steven Kerr provided interesting insights about reward systems in his publication "On the Folly of Rewarding A, While Hoping for B" (Kerr, 1975). Explore how Kerr's existing work could be tied to this research.
	A3 A field experiment could be structured in which a) a control group in the organization does <i>not</i> get front-line input and b) an experimental group (matched to the controls on relevant variables) gets front-line input to see whether the hypothesis that an organization – in which this lower level input is sought and integrated – will fare better in change efforts than organizations that do not get front-line input.
	A4 Develop a rating system for business transformation disruption scores. Such rating would classify the <i>state</i> (e.g., poor, fair, average, good, excellent) of a strategic military command which is engaged in business transformation.



Table 229. Continued.

<b>B. Research Questions</b>	B1	What other categories and/or factors may contribute to the disruption of business transformation in a military strategic command?
	B2	What other factors (within the existing research categories LT, RBT, and/or LAMC) may increase the R-squared value of the current regression model?
	B3	What other factors (within a new research category) may increase the R-squared value of the current regression model?
	B4	What research methods, strategies, and/or factors could be chosen to develop a model that facilitates “predicting” undesired outcomes and mitigate risk as part of business transformation initiatives?
	B5	Are there more opportunities to integrate the study’s initial results into our understanding of complex systems, change management, knowledge management, strategic planning, and continuous process improvement? (Rankin, Lundberg, Woltjer, Rollenhagen, & Hollnagel, 2013)
	B6	How might the risk management field expand its understanding in academia with respect to what is learned from this research endeavor? Is it possible that what was learned can be integrated into risk management planning processes as a means to reduce project misfires and/or miscalculations?

## 5.5 Conclusion

The intent of this study was to explore the relationship between several factors and the disruption of business transformation processes within a strategic-level military command. As part of this study, a mixed method – applying both quantitative and qualitative research elements – was designed and implemented in order to gain useful insight into three specific categories (i.e., *Leadership Turbulence*; *Resistance to Business Transformation*; and *Lack of Agility in Military Culture*).

During this two-year long study, a research model was developed and tested. This facilitated closing an existing gap within the current literature pertaining to change management and business transformation. As part of the research effort, seven hypotheses were tested. The units of analysis were senior military and civilians staff members of strategic military commands. The study started with a set of focus groups

that led to the refinement of the research scope and further data collection. During this last data collection effort, a self-administered survey was provided to the proposed target population. A total of 1,436 surveys were collected during the 3-week data collection period.

The results of this investigation suggest that a) frequent turnover of a commander or commanding general, b) perceived inconsistencies of leadership guidance, and c) perceived disincentives for achieving organizational process efficiencies are associated to disrupting business transformation goals and initiatives. Conversely, this initial investigation failed to support hypotheses such as d) collaboration with colleagues, e) reluctance to adopting different business processes, f) perceived negative assessments of process improvement initiatives, and g) dissent tolerance are associated to the disruption of business transformation efforts.

Finally, during the analysis of the qualitative feedback from the research participants, twenty categories – highlighting recommendations and organizational challenges – were identified.<sup>34</sup> These include but are not limited to, bureaucratic complexities and paralysis, inadequate communications and knowledge-sharing, a need for more fact-based decision-making, regulatory and budgetary constraints/influences, misaligned reward systems, unpredictable instability, and needs for expanded workforce education. Therefore, utilizing both the quantitative and qualitative findings from this research endeavor may provide a framework for future research within academia, the military, as well as the industry.

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<sup>34</sup> Refer to Appendix M for the complete list of comment categories and their associated definitions.

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## APPENDICES

## APPENDIX A: ACRONYMS, GLOSSARY OF TERMS, AND SYMBOLS

Table 230. Acronyms

Acronym	Term
ABS	Absolute (value)
ACC	Air Combat Command (Langley AFB)
ACOM	Army Command
ACP	Army Campaign Plan
ACT	Allied Command Transformation
ADM	Admiral
AFB	Air Force Base
AKO	Army Knowledge Online
AMSC	Army Management Staff College
ANOVA	Analysis of Variance
ARCIC	Army Capabilities Integration Center
AR	Army Regulation
ARI	Army Research Institute (Fort Belvoir, VA)
AT&L	Acquisition, Technology and Logistics
ATO	Authority to Operate
ATSC	Army Training and Support Center
AVG	Average (value)
BAE	British Aerospace Engineering
BEA	Business Enterprise Architecture
BMC	Brigade Modernization Command
BoK	Body of Knowledge
BSIT	Business Systems Information Technology
BT	Business Transformation
BTI	Business Transformation Initiatives
BTP	Business Transformation Processes
CENTCOM	Central Command
CFA	Confirmatory Factor Analysis
CG	Commanding General
CGSC	Command and General Staff College
CITI	Collaborative Institutional Training Initiative
CKO	Chief Knowledge Office(r)
CoE	Center of Excellence
COL	Colonel
CoN	Certificate of Networthiness
COTS	Commercial Off-the-Shelf
CPA	Continuous Process Adjustment
CPI	Continuous Process Improvement

Table 230. Continued.

CSV	Comma-Separated Value
DCG	Deputy Commanding General
DCMO	Deputy Chief Management Office(r)
DCoS	Deputy Chief of Staff
DEM	Demographics
DLIFLC	Defense Language Institute Foreign Language Center
DKO	Defense Knowledge Online
DOD	Department of Defense
DS	Discontinued Score
DV	Dependent Variable
DWA	Daily Work Activities
EdS	Education Specialist
EFA	Exploratory Factor Analysis
EM	Engineering Management
ERP	Enterprise Resource Planning
FIP	Financial Improvement Plan
FOGO	Flag Officer/General Officer
FORSCOM	Forces Command
FS	Factor Score
FY	Fiscal Year
GAO	General Accounting Office
GCSS-A	Global Combat Support System-Army
GEN	General
GFEBs	General Fund Enterprise Business System
GOTS	Government Off-the-Shelf
GS	Government Schedule
HIPAA	Health Insurance Portability and Accountability Act
HQ	Headquarters
HQDA	Headquarters, Department of the Army (Washington, DC)
HR	Human Resources
HTML	Hypertext Markup Language
HTS	Human Terrain System
ID	Identification
IDRE	Institute for Digital Research and Education
IEEE	Institute of Electrical and Electronics Engineers
IMO	Information Management Officer
IP	Internet Protocol
IRB	Institutional Review Board
IT	Information Technology
IS	Information System
IV	Independent Variable
JCoE	Joint Center of Excellence
JD	Juris Doctor
JPO	Joint Program Office (Suffolk, VA)

Table 230. Continued.

JT&E	Joint Test & Evaluation
JTSC	Joint Test Support Cell
K-S	Kolmogorov-Smirnov
KTG	Kern Technology Group
LAMC	Lack of Agility in Military Culture
LD&E	Leader Development and Education
LMP	Logistics Modernization Program
LNO	Liaison Officer
LSS	Lean Six Sigma
LT	Leadership Turbulence
LTG	Lieutenant General
LWN	LandWarNet
ME	Military Experience
MIS	Management Information System
MIT	Massachusetts Institute of Technology
MRC	Multiple Regression/Correlation
MRSD	Modified, Reprioritized, Suspended, Discontinued
MRSDS	MRSD Score (Total)
MS	Modified Score
MSO	Major Subordinate Organization
MVA	Multivariate Analysis
N/A	Not Applicable
NATO	North Atlantic Treaty Organization (Brussels, Belgium)
NDA	Non-Disclosure Agreement
NDS	Normalized Discontinued Score
NLT	No Later Than
NMRSDS	Normalized MRSD Score
NMS	Normalized Modified Score
NRS	Normalized Reprioritized Score
NSS	Normalized Suspended Score
OBT	Office of Business Transformation
OCPA	Office of the Chief of Public Affairs (HQDA)
ODU	Old Dominion University (Norfolk, VA)
OE	Operational Environment
OIG	Office of the Inspector General
ONR	Office of Naval Research
OR	Operations Research
PCA	Principal Component Analysis
PCFA	Principal Component Factor Analysis
PCO	Proactive Change Orientation
Ph.D.	Doctor of Philosophy
PII	Personally Identifiable Information
PM	Project Manager
POC	Person of Contact



Table 230. Continued.

Q-Q	Quantile-Quantile (Plot)
RBT	Resistance to Business Transformation
RIF	Reduction in Force
ROI	Return of Investment
ROTC	Reserve Officers' Training Corps
RS	Reprioritized Score
RTC	Resistance to Change
S-W	Shapiro-Wilk
SBR	Statement of Budgetary Resources
SBS	Social and Behavioral Sciences
SJA	Staff Judge Advocate
SME	Subject Matter Expert
SMP	Strategic Management Plan
SMS	Strategic Management System
SPSS	Statistical Package for the Social Sciences
SQL	Structured Query Language
SES	Senior Executive Service
SS	Suspended Score
SSI	Soldier Support Institute
SSL	Secure Sockets Layer
TCM	TRADOC Capability Management
TMCTP	TRADOC Mission Command Training Program
TOMA	Training Operations Management Activity
TP	Target Population
TRAC	TRADOC Analysis Center
TRADOC	Training and Doctrine Command (Fort Eustis, VA)
TRISA	TRADOC Intelligence Support Activity
TTP	Tactics, Techniques, and Procedures
TVE	Total Variance Explained
U.S.	United States
U.S.C.	United States Code
URL	Uniform Resource Locator
USA	United States Army
USAASA	US Army Aeronautical Services Agency
USACHCS	US Army Chaplain Center and School
USAF	United States Air Force
USASD	US Army Student Detachment
USAWC	US Army War College
USPKSOI	US Army Peacekeeping and Stability Operations Institute
VBA	Visual Basic for Applications
WWW (or W3)	World Wide Web

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**Table 231.** Glossary of Terms

Term	Definition	Reference
Business Transformation Processes (also see <i>Disruption of Business Transformation Processes</i> )	“Identifiable processes that have been demonstrated to increase an organization’s efficiency and effectiveness in achieving its strategic goals and objectives.”	(Bock, 2013)
Complex System	“Complex systems research is becoming ever more important in both the natural and social sciences. It is commonly implied that there is such a thing as a complex system across the disciplines. However, there is no concise definition of a complex system, let alone a definition that all disciplines agree on.”	(Ladyman, Lambert, & Wiesner, 2013)
Constructivism	“The philosophical belief that people construct their own understanding of reality.”	(Oxford, 1997)
Discontinued (also see <i>Disruption of Business Transformation Processes</i> )	“The permanent stopping (shut-down) of a business transformation initiative.”	(Bock, 2013)
Disruption of Business Transformation Processes	“An event and/or condition under which business transformation processes are modified, reprioritized, suspended, or discontinued.”	(Bock, 2013)
Focus Group	“A focus group is a special type of group in terms of purpose, size, composition, and procedures. The purpose of conducting a focus group is to listen and gather information. It is a way to better understand how people feel or think about an issue, product, or service. Focus groups are used to gather opinions.”	(Krueger & Casey, 2009)

Table 231. Continued.

Lack of Agility in Military Culture	“Military culture is defined as a set of common values, beliefs, traditions, and basic philosophies facilitating both collective understanding as well as expectations within an organization that inform appropriate behavior amongst and between staff. Lack of agility in military culture is described as an environment that is marked by inflexibility and rigidity such that a) bringing forth of new ideas or innovation is not incentivized and b) overt expression of disagreement is not encouraged.”	(Bock, 2012; Carpenter, 2006)
Leadership Turbulence	“Leadership turbulence is a consequence of a) frequent change of a Commander or Commanding General and b) guidance inconsistencies leading to adjustments, uncertainties, and/or rearrangements of strategic goals and objectives.”	(Bock, 2013)
Longitudinal Data (Study)	“Longitudinal data arise frequently in many scientific disciplines, where repeated measurements of the response and covariates are collected over a sequence of time points.”	(Li & Yin, 2009)
Mixed Method	“Pragmatic worldview; collection of both quantitative and qualitative data sequentially.”	(Creswell, 2009)
Modified (also see <i>Disruption of Business Transformation Processes</i> )	“Any change in direction/composition/requirement of a business transformation initiative.”	(Bock, 2013)
Non-Experimental Research	“Non-experimental research involves variables that are not manipulated by the researcher and instead are studied as they exist.”	(Belli, 2008)
Phenomenological Research	“A strategy of inquiry in which the researcher identifies the essence of human experiences about a phenomenon as described by participants.”	(Creswell, 2009)

Table 231. Continued.

Pragmatism	“There are many forms of this philosophy, but for many, pragmatism as a worldview arises out of actions, situations, and consequences rather than antecedent conditions.”	(Creswell, 2009)
Qualitative Research	“Qualitative research involves looking at characteristics, or <i>qualities</i> , that cannot easily be reduced to numerical values. A qualitative researcher typically aims to examine the many nuances and complexities of a particular phenomenon.”	(Leedy & Ormrod, 2010)
Quantitative Research	“Quantitative research involves looking at amounts, or <i>quantities</i> , of one or more variables of interest. A quantitative researcher typically tries to measure variables in some way, perhaps by using commonly accepted measures of the physical world (e.g., rulers, thermometers, oscilloscopes) or carefully designed measures of psychological characteristics or behaviors (e.g., tests, questionnaires, rating scales).”	(Leedy & Ormrod, 2010)
Reliability	“The extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability. In other words, if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable.”	(Joppe, 2000a)
Reprioritized (also see <i>Disruption of Business Transformation Processes</i> )	“Any change in level of importance (e.g., higher or lower priority) for a business transformation initiative.”	(Bock, 2013)
Research Bias	“Research bias, also called experimenter bias, is a process where the scientists performing the research influence the results, in order to portray a certain outcome.”	(Shuttleworth, 2009)

Table 231. Continued.

Resistance to Business Transformation	“Staff member’s reluctance to support business transformation goals is one of the causes of diminished transformation outcomes. At the level of the individual staff member (i.e., active duty or government civilian), RBT is defined as negative attitudes toward transformation where staff members: a) question its necessity and/or its benefit; b) are unwilling to adopt new/modified procedures, processes, practices and other organizational changes.”	(Bock, 2012)
Sampling Bias	“Also known as <i>selection bias</i> , an error in choosing participants for a scientific study such that the results are distorted.”	(Fournier, 2009)
Sequential Exploratory Strategy	“Involves a first phase of qualitative data collection and analysis, followed by a second phase of quantitative data collection and analysis that <i>builds</i> on the results of the first qualitative phase.”	(Creswell, 2009)
Suspended (also see <i>Disruption of Business Transformation Processes</i> )	“Any temporary suspension (interruption) of a business transformation initiative.”	(Bock, 2013)
Validity	“Validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are.”	(Joppe, 2000b)
Worldview (Research Paradigm)	“A basic set of beliefs that guide action.”	(Guba, 1990)

**Table 232.** Greek Symbols

Letter	Name	Meaning
$\alpha$	Alpha	Type I error
$\beta$	Beta	Type II error
$\mu$	Mu	Arithmetic mean (i.e., average of a population)
$\rho$	Rho	Population correlation coefficient
$\Sigma$	Sigma	Summation
$\sigma$	Sigma	Population standard deviation
$\sigma^2$	Sigma squared	Population variance

**Table 233.** English Symbols

Symbol	Meaning
$MS$	Mean squared error (i.e., average variability in data)
$N$	Sample size – $N$ usually denotes total sample size
$R$	Multiple correlation coefficient
$Sig.$	Significance level (also known as $p$ -value)
$df$	Degrees of freedom
$n$	Sample size – $n$ usually denotes total sample size
$r$	Pearson's correlation coefficient
$s$	Population standard deviation
$s^2$	Population variance
$\bar{x}$	Arithmetic mean (i.e., average of a sample population)

## APPENDIX B: RESEARCH DESIGN STRATEGY

**Table 234.** Research Design Strategy (Methodology)

Phase	Stage	Activity	Status
<b>Phase I:</b> Making the case for research purpose/ identifying gap in BoK (qualitative inquiry)	I-1a	Curiosity and generate problem questions	Complete
	I-1b	Design and conduct initial inquiry by conducting several focus groups across ACC and TRADOC	Complete
	I-1c	Interpret initial qualitative findings and report to help: <ul style="list-style-type: none"> <li>• Generate relevant next steps and pertinent questions</li> <li>• Generate basis upon which to begin framing survey questions</li> <li>• Gain initial understanding, nuances, feelings, beliefs, experiences of target population</li> <li>• Operationalize research</li> <li>• Help generate hypotheses</li> </ul>	Complete
	I-2a	Literature review (understanding the existing body of knowledge and bridging the gap)	Complete
	-----		
<b>Phase II:</b> Expansion of research (quantitative inquiry)	II-1a	Generate survey questions	Complete
	II-1b	Design survey instrument	Complete
	II-1c	Test survey instrument (with pilot audience)	Complete
	II-1d	Launch survey (go live)	Complete
-----			
<b>Phase III:</b> Implement data collection plan and data analysis	III-1a	Gather data from surveys ensuring necessary safeguards along the process	Complete
	III-1b	Prepare statistical analysis tool(s) and set parameters	Complete
	III-1c	Begin analyzing data (e.g., exploratory and confirmatory factor analysis, regression testing, <i>goodness of fit</i> , etc.)	Complete
-----			

Table 234. Continued.

<b>Phase IV:</b> Report findings and defend research	IV-1a	Interpret research findings and write report	Complete
	IV-1b	Present findings to Ph.D. defense committee (Drs. Landaeta, Pinto, Handley, and Haltiwanger)	Complete
	IV-1c	Refine report and publish work	Complete

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## APPENDIX C: RESEARCH APPROVAL AND NON-DISCLOSURES

## Approval # 1: TRADOC Chief Knowledge Officer (CKO)

REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
HEADQUARTERS, UNITED STATES ARMY TRAINING AND DOCTRINE COMMAND  
950 JEFFERSON AVENUE  
FORT EUSTIS, VIRGINIA 23604-6700

U.S. Training and Doctrine Command  
ATTN: ATCS-KO  
Chief Knowledge Office  
950 Jefferson Avenue  
Fort Eustis, VA 23604

12 September 2011

Thomas Bock  
3006 Haydock Court  
Suffolk, VA 23435

Mr. Bock:

This is to inform you that your request to conduct doctoral research on organizational change management processes within TRADOC is approved. I look forward to your sharing of your research and results with my staff. Please continue to keep my staff informed of your progress.

Sincerely,

A handwritten signature in cursive script, appearing to read "Joe Oebbecke".

Joseph C. Oebbecke, HQE  
HQ TRADOC  
Chief Knowledge Officer

## Request for New Research Sponsor (TRADOC)



BATTEN COLLEGE OF ENGINEERING AND TECHNOLOGY  
 DEPARTMENT OF ENGINEERING MANAGEMENT AND SYSTEMS ENGINEERING  
 241 Kaufman Hall Norfolk, Virginia 23529-0246  
 Phone (757) 683-4558 Fax (757) 683-3640 e-mail: ems@odu.edu  
 A Carnegie Research Excellence Institution

6 December 2012

Dear General MacCarley:

Old Dominion University serves the needs of several internal and external constituents with its resources. These include: current and prospective students seeking undergraduate, graduate, and continuing education programs, business and industry, government agencies at all levels, the military; research organizations, and the community at large regionally, state-wide, nationally, and internationally. These constituencies are discussed in greater detail in the following paragraph.

Old Dominion University's graduate offerings are focused on society's need for advanced professional education and on specialized programs at the master's and doctoral levels for which the institution is prepared through unusual strengths of faculty or special geographic advantages. All graduate programs meet national standards of excellence.

The Ph.D. in engineering management focuses on developing the necessary skills to perform and evaluate rigorous research in areas related to the design and management of projects, programs and complex human-technological systems. The goal of the Ph.D. program is to prepare graduates for careers in teaching and research at academic institutions as well as in other public and private organizations characterized by innovation and technological leadership.

One of our doctoral students, Mr. Thomas Bock, is currently pursuing research which concentrates on business transformation within strategic military commands. More specifically, his dissertation work title reads as follows: "A Risk Management Approach: Investigation of Business Transformation Disruptors at the DoD Strategic Command Level."

Mr. Bock's research topic was defined after carefully assessing his research skills, interests and past experiences. For example, previously (March 2010-May 2012), Mr. Bock supported the Office of the Chief Knowledge Officer (under the leadership of Mr. Joe Oebbecke, HQE) leading numerous project initiatives related to data management and knowledge management. We believe Mr. Bock's research will be a positive contribution to both industry and military science.

It is our understanding that Tom's current research sponsor at TRADOC, Joe Oebbecke, is transitioning into retirement. Therefore, as supervisor of Mr. Bock's research I kindly request if it is possible to identify a new sponsor that will help Mr. Bock in his research efforts (data collection through interviews, focus groups). Doing so would enable Mr. Bock to continue his academic research objectives; and thus help ODU provide effective solutions to the military and its partners.

If you require additional information, please do not hesitate to contact me via email or phone.  
 Very respectfully,

Rafael Landaeta, PhD  
 Associate Professor  
 Department of Engineering Management & Systems Engineering  
 Old Dominion University

## Enclosure/attachment

- Research Approval/Sponsorship (signed by Mr. Joe Oebbecke)
- "Research - Topic Summary.pdf" (developed by Tom Bock)

## Approval # 2: TRADOC Deputy Chief of Staff (DCoS)

REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
DEPUTY CHIEF OF STAFF  
HEADQUARTERS, UNITED STATES ARMY TRAINING AND DOCTRINE COMMAND  
860 JEFFERSON AVENUE  
FORT EUSTIS, VIRGINIA 23004-6700

December 20, 2012

Mr. Thomas Bock  
3006 Haydock Court  
Suffolk, Virginia 23435

Dear Mr. Bock:

This is to inform you that your request to conduct doctoral research on Organizational Change Management processes with TRADOC is approved. I look forward to your sharing of your research and results with my staff. Please continue to keep my staff informed of your progress.

Sincerely,

Mark MacCarley  
Major General, U.S. Army

## Staffing Process of Research Review (TRADOC, OCPA, ARI)

**Table 235. Staffing Process (Research Review)**

Office/Function <sup>35</sup>	Rank/Grade	Feedback
Chief Knowledge Officer	O6	Approved
Deputy Chief of Staff	O8	Approved
Deputy Commanding General	O9	Approved
Deputy Staff Judge Advocate	O6	Approved
Staff Judge Advocate	O6	Approved
Inspector General	O6	Approved
TRADOC Director ARI	GS-15	Approved
Public Affairs Officer	O6	Recommended review by OCPA
Office of the Chief of Public Affairs	O6	Recommended review by ARI
Army Research Institute	GS-15	Validated survey instrument
Information Technology (G-6)	GS-13	Approved
Deputy Staff Judge Advocate	O5	Approved
HR Protections Administrator <sup>36</sup>	GS-13	Approved

<sup>35</sup> As part of the command staffing process, the offices/functions are listed in the order in which they reviewed/approved the research proposal and/or the survey instrument.

<sup>36</sup> The Human Protections Administrator for LD&E (CGSC, Fort Leavenworth, KS) reviewed and approved the survey once it had been released (see Appendix G – Department of the Army – IRB).

## AKO/DKO Bulk Email Procedure (Page 1)

### AKO/DKO Bulk Email Procedure

Original: 7 August 2008

Last Updated: 22 March 2013

#### I. Overview

This document details:

- Bulk email concerns.
- Alternatives to using bulk email.
- How to request and send a bulk email, when approved.

#### II. Background

Spam is unsolicited or undesired electronic messages. In addition to being a nuisance, spam consumes network bandwidth and wastes storage space on government systems. As such, policies are in place within the Army Enterprise to minimize spam sent across its networks. AKO/DKO also takes active measures to prevent our users from receiving spam from sources both internal and external to the Army.

#### III. Issue

More than 2.5 millions users turn to AKO/DKO as a trusted, reliable information and collaboration tool. Because the portal is a key component to completing individual missions across the DoD enterprise, the AKO/DKO PMO takes seriously its responsibility to ensure users are not subjected to unsolicited email.

Establishing and enforcing a strict anti-spam policy works to preserve the overall usefulness of email. Constant receipt of unsolicited email diminishes the effectiveness of AKO/DKO as a service-level command communication tool and results in users deleting messages without regard to their content. AKO/DKO also has an obligation to the DoD to conserve network bandwidth and storage that is needlessly consumed by the bulk delivery of emails.

Requests to send email messages to the entire user base, or large segments of the AKO/DKO user population, will be denied unless they:

- Contain information a majority of the recipients require in order to fulfill their mission.
- Originate from or on behalf of a service Chief of Staff (e.g., the Army G1).
- Are in support of rare, non-recurring events (e.g., overseas voter registration) deemed significant by the DoD or specific service (as appropriate).

With few exceptions, permission to send a bulk email are restricted to one email per 12-month period.

## AKO/DKO Bulk Email Procedure (Page 2)

### III. Alternatives

AKO provides several methods for communicating with users as an alternative to sending unsolicited email en masse. For each method below, click on the link to see detailed instructions.

- AKO announcement: These messages appear on the home page for up to two weeks. To qualify for placement, the announcement must be of interest to the entire Army community. Details about announcements, including how to submit them, are in the AKO Homepage Announcement Request Procedure document.
- Create a portal page: This content exists for as long as its creator desires. Any user can create a page to promote their message. Dedicated portal pages are ideal for advertising services, recurring events, links to external sites, and other items of interest.

### IV. Procedure for Requesting a Bulk Email Message

Bulk email messages fall into one of two groups:

1. When sending to small groups (typically less than 2,000 individuals), users should read the Rules-Based Group Procedure document. If unfamiliar with how to establish a group and email its members, refer to this document.
2. For large audiences (2,000 or more users), follow these steps:
  1. Obtain authorization (either as a letter/memo or digitally signed email) from the first general officer (or SES equivalent) in the chain of command. *Note: The request for a mass email will not be reviewed without the appropriate approval.* The authorization should indicate the desire to send an unsolicited email. The message must include a detailed description of the targeted population and a statement acknowledging that the majority of the recipients will find the information professionally beneficial or necessary to fulfill their mission.
  2. Establish a utility account (or, as appropriate, identify the individual who will send the message). This is the account that will be displayed in the "From" field on the email message; it is also where replies will be sent. Organizations are required to monitor the mailbox of this account and respond to email generated from the bulk message.
  3. If the email includes either a link or an attachment, DoD policy requires the message be digitally signed. The certificate must match the utility account sending the email message. For example, a message from [ako.newsletter@us.army.mil](mailto:ako.newsletter@us.army.mil) requires a mail certificate for [ako.newsletter](mailto:ako.newsletter@us.army.mil), not an unrelated (or individual) account.  
To begin the process of obtaining a digital cert, contact your local Network Enterprise Center (NEC) for the Local Register Authority. For those without access to these departments (e.g., FRGs), email the IA CAC/PKI Helpdesk for guidance. *Note: This process may take several weeks.*
  4. Submit your request using the AKO/DKO Bulk E-mail Request Process, which will require the following details:
    - PDF of signed letter (or digitally signed email message) from GO/SES
    - Utility account/individual address to be used as the sending address
    - Desired date of email delivery
    - Contact information of requestor (name, phone, email)
    - Requesting organization
    - Desired audience
    - Subject of the message
    - Text of message
    - Digital certificate (if required; refer to Step 3)

*Note: AKO requires four business days to process bulk e-mail requests.*
  5. Once approved, the requestor will receive instructions for delivering the digital cert to the AKO mail team. When this process is complete, the email can be scheduled for delivery.

For questions about any of the content in this policy, email [ako.content@us.army.mil](mailto:ako.content@us.army.mil).

## AKO Rules-Based Groups Policy (Page 1)



### AKO Rules-Based Groups Policy

*Revised: 7 March 2013*

#### Rules-Based Groups Overview

One of AKO's most powerful features is the ability to create groups of users. Once a group is created, there are three ways users can be added to it:

1. Add a user to the group by name
2. Add a group to another group
3. Create a rule so that users are added to the group automatically (based on certain characteristics)

Rules-based groups (option 3) are lists of people who meet certain characteristics, such as "all Captains" or "all Sergeants in the National Guard." When you create a rules-based group, users whose attributes match the rule(s) are automatically added as members. Rules-based groups (RBGs) are easy to maintain, because the rule automatically adds and deletes members as their status changes.

All AKO RBGs are to be used only for the management or advertisement of official business. Emails sent from the group must first meet the criteria detailed in the [AKO/DKO Bulk Email Procedure](#). Often, messages can be more-effectively delivered through AKO Announcements; learn more in the [Announcement Policy and Procedure](#).

#### Who Can Request a Rules-Based Group

All users requesting this capability must be an *authoritative source*, defined as supervisors for a particular organization, unit commanders for a particular unit, functional proponents for a particular functional area or family readiness group leaders. Users who need rules-based groups who do not meet one of these criteria should have their authoritative source make the request on their behalf.

#### Requesting a Rules-Based Group

The steps to requesting an RBG are straightforward. The authoritative source must:

1. Create the group(s) you want rules applied to. AKO cannot create the group(s) for users. Acceptable group types are: My, Team, or Community (without designated parents). Organizational groups, which make up the AKO Site Map, should always remain unrestricted.
2. Complete the [AKO RBG Request Form](#) with the following information:
  - The name of the group, its ID#/URL, and the username of the group's creator.
  - Attributes needed and values, as required. For more information, refer to "Available Attributes" (below) for "Constructing Rules."
  - Intended use of the group, including frequency (if applicable). Some examples: to email a quarterly newsletter to all JAG officers from the BG; to permanently restrict a specific folder; to monitor access to a project page.

*Note: RBGs being used to email users must first meet the criteria detailed in the [AKO/DKO Bulk Email Procedure](#).*

  - AKO username of the group administrator. The authoritative source requesting the RBG can designate a different group admin.
3. From a .mil address, email the [AKO RBG Request Form](#) to the appropriate AKO content editor: [ako.community@us.army.mil](mailto:ako.community@us.army.mil) using "Request for a rules-based group" as the subject line. Creating RBGs is a completely manual process; please allow 2-3 weeks for processing. Once created, the Content Editor will send notification via email.

## AKO Rules-Based Groups Policy (Page 2)



### Available Attributes

The following attributes may be used to define rules:

Account Type (examples: Active Army, Reserve Marine Corps, DA Civilian)  
 Basic Branch (examples: FA, MI, IN)  
 MACOM (examples: EUSA, NETCOM)  
 MOS (examples: 25, 40)  
 Military Rank (examples: GEN, CW5, PV2)  
 Civilian Rank (examples: GS15, NH04)  
 UIC (examples: W4NJAA, WCD2A1 – should be accompanied by Account Type)  
 AOC (examples: 25A, 35G)  
 Career Field (examples: 63, 42)  
 Account Verification (examples: Verified, Unverified)

Some possible values for MOS, Civilian Rank, UIC, AOC, and Career Field are available in the [AKO User Directory Scheme](#).

### Constructing Rules

Any combination of the attributes above can be used and multiple rules may be set for a single group.

For example: "Include all users whose Account Type is Active Army or Army Reserve, and Military Rank is COL or LTC, and Basic Branch is MI"

### Frequently Asked Questions

**Q: What is a rules-based group?**

**A:** A rules-based group is an AKO group with at least some of its membership populated as a result of those users meeting a certain set criteria.

**Q: What are rules-based groups used for?**

**A:** Rules-based groups are used to control access to sections of AKO and/or for emailing specific AKO users.

**Q: Can I create an RBG with all AKO users in it?**

**A:** No. RBGs are intended to target small, specific subsets of the AKO user-base. To reach all users, you can more effectively deliver messages using AKO Announcements; learn more in the [Announcement Policy and Procedure](#).

When employed properly, RBGs are useful for a number of reasons. For example, they can be used to email all users with a particular MOS or to restrict access to a page to all users with a certain UIC. FRG leaders can use a rules-based group with the UIC of the unit to build a group of the unit's family members.

**Q: Will I have to manually maintain the members of the group?**

**A:** No, as a user's profile is updated in the database, they will automatically be added or removed from your group. You cannot remove a user from your group who was added as a result of the rule, but you can add additional users as members should you choose to do so.

**Q: Who can request that a rule be added to their group?**

**A:** Only authoritative sources, as defined above, should make these requests.

**Q: I have a rules-based group, but want to add my CO. Is that possible?**

**A:** Yes, administrators of rules-based groups can add and remove additional individual user IDs at any time.

**Q: The rules-based group I created includes someone who retired last week. Can I remove him?**

**A:** No. Members added to a group by a rule cannot be removed individually. RBGs pull information from official DoD sources; once those databases are updated with the individual's new information, the rules will reflect the change. In some cases, it can take months for DoD records to reflect changes such as retirement, promotion or rank change.



**AKO Bulk Email Request Memo (Template)**

From:

[*unit/department of sender*]

[*date*]

To:

Dr. Kenneth Fritzsche

Product Director, Army Knowledge Online

1. The [*appropriate department/division*] is launching a campaign to increase awareness of [*topic*]. The goal of this effort is to [*intended outcome*]. As a step in this campaign, the [*appropriate department/division*] is send an informational email to [*audience*].

*NOTE: The preceding verbiage is provided as a suggestion. Please edit as appropriate to accurately describe the current mission, being sure to provide all information noted in brackets.*

2. Specifically, the request is:

-- For an email be sent from this email address:

-- Authorizing organization:

-- Desired audience:

-- Date of delivery:

-- Subject line of email:

-- Summary of email message:

-- URLs included in email:

-- There [*will/will not*] be an attachment to the email.

3. For any questions or concerns, please contact [*POC*].

Signed,

[signature]

[name]

[title]

## AKO Bulk Email Request Memo (signed by TRADOC DCoS)

From:  
HQ, TRADOC (Office of the Deputy Chief of Staff)

November 5, 2013

To:  
Dr. Kenneth Fritzsche  
Product Director, Army Knowledge Online

1. To better facilitate our ongoing efforts to "Adapt TRADOC," I am requesting support to send out a targeted TRADOC message linked to a survey. The intent is to gain useful and meaningful insight to facilitate change management, business transformation and required risk management prior to finalizing our implementation plan.

2. We will send an email request to approximately 6,000 team members in the grades of O-5, O-6, GS-13, GS-14 and GS-15. The survey is designed to gather staff members' observations and facilitate analysis of factors bearing upon important issues as we shift from an Army at War to an Army of Preparation. The Command stands to gain valuable information to assist us in our efforts to adapt TRADOC in support of the Chief of Staff of the Army's way ahead for the force.

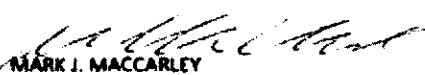
3. Specifically, the request is:

- For an email be sent from this email address: [cameron.a.leiker.mil@mail.mil](mailto:cameron.a.leiker.mil@mail.mil)
- Authorizing organization: HQ TRADOC
- Desired audience: 6,000 team members in the grades of O-5, O-6, GS-13, GS-14 and GS-15 [04, 05, 06, G13, 14, 15]
- Date of delivery: 6 November 2013
- Completion date: 22 November 2013
- Reminder email (setting): 14 November 2013
- Subject line of email: Critical Survey Completion
- Summary of email message: See Below
- URLs included in email: <https://TRADOC-ODU.questionpro.com>.
- There [will/will not] be an attachment to the email. No attachment, only a link to the survey.

Notes:

- We can provide email addresses for personnel
- We request a reminder be set for 14 November 2013, given the criticality and Veteran's Day holiday.
- We request all return emails, out of office replies, etc. be forwarded to the POC: COL Cameron A. Leiker, TRADOC Chief Knowledge Officer, 757-SD1-6262 / 6261; [cameron.a.leiker.mil@mail.mil](mailto:cameron.a.leiker.mil@mail.mil)

4. POC is COL Cameron A. Leiker

  
MARK J. MACCARLEY  
MAJOR GENERAL, US ARMY  
Deputy Chief of Staff, TRADOC

**Non-Disclosure Agreement (NDA) #1 – Researcher****THOMAS BOCK**

3006 Haydock Court • Suffolk, VA 23435 • (301) 908-3879 • www.thomasbock.net

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**Non-Disclosure Agreement**

1. I, Thomas Bock, in consideration of receiving the U.S. Army Training and Doctrine Command's (TRADOC) cooperation in support of my academic research, through the granting of access to data or information concerning TRADOC, acknowledge and agree to the following provisions.
2. I acknowledge and agree that any data obtained will be limited to my personal academic use and may not be further disseminated or used for profit or other commercial purposes.
3. I acknowledge and agree that any information I receive from TRADOC may only be shared with representatives of Old Dominion University, with members of the TRADOC Staff, or with others, as necessary, to complete dissertation requirements. I understand that this limitation does not apply to non-profit or non-commercial publication in academic journals or academic publications, generally.
4. I understand that the obligations described above do not expire and that I remain bound by the terms of this document beyond the duration of my academic work.

SIGNATURE: \_\_\_\_\_

*Thomas Bock*DATE: 10/23/2013

## Non-Disclosure Agreement (NDA) #2 – Old Dominion University



**BATTEN COLLEGE OF ENGINEERING AND TECHNOLOGY**  
**DEPARTMENT OF ENGINEERING MANAGEMENT AND SYSTEMS ENGINEERING**  
 241 Kaufman Hall, Norfolk, Virginia 23529-0246  
 Phone (757) 683-4598; Fax (757) 683-5630; ENGL001@ODU.EDU  
 A Carnegie Doctoral/Research Extensive Institution

### Non-Disclosure Agreement

NAME: RAFAEL E LANDAETA

ACADEMIC DEPARTMENT/JOB TITLE: DEPARTMENT OF ENGINEERING  
 MANAGEMENT & SYSTEMS ENGINEERING/ASSOCIATE PROFESSOR

ACADEMIC INSTITUTION: OLD DOMINION UNIVERSITY

1. I acknowledge that in my professional capacity as Dissertation Advisor to/for Thomas Bock, I may be granted access to data or information concerning U.S. Army Training and Doctrine Command (TRADOC). I further acknowledge that I may have access to certain copyrighted documents or other data pertaining to TRADOC, and that any access rights granted me are strictly limited to Mr. Bock's personal academic use and may not be further disseminated or used for profit or other commercial purposes.
2. I acknowledge that the information I receive may only be shared with Mr. Bock, representatives of Old Dominion University, members of the TRADOC Staff, or with others as needed for completion of Mr. Bock's dissertation requirements. I shall take all reasonable precautions to prevent the disclosure of information to any unauthorized party.
3. I understand that the obligations described above do not expire and that I remain bound by the terms of this document beyond the duration of Mr. Bock's academic work.

Rafael Landaeta, Ph.D.  
 Associate Professor  
 Dpt. Engineering Management &  
 Systems Engineering

*Rafael Landaeta* DATE: 10/20/2013

Oktay Baysal, Ph.D.  
 Dean, Professor, Eminent Scholar  
 Batten College of Engineering and Technology

*Oktay Baysal* DATE: 10-25-2013

## APPENDIX D: DATA FROM FOCUS/DISCUSSION GROUPS

**Table 236.** Focus Group at TRADOC (03/19/2012)

	O6	O5	O4	GS-15	GS-14	GS-13
G-1/4						■
G-2						
G-3/5/7	■		■	■	■	
G-6						■
G-8						■
Special Staff		■	■	■	■	
MSO		■				
CoE						

**Table 237.** Discussion Group at JPO (03/30/2012)

	GS-14	PM-level
JPO	■	
JT&E LNO		■
JTSC		■

**Table 238.** Focus Group at TRADOC (04/05/2012)

	O6	O5	O4	GS-15	GS-14	GS-13
G-1/4	■					■
G-2						
G-3/5/7		■			■	■
G-6						
G-8						
Special Staff	■					■
MSO						
CoE					■	

**Table 239.** Key Informant Interviews at ACC (09/27/2012)

	O6	O5	O4	GS-15	GS-14	GS-13
CoE		■		■	■	■

**Table 240.** Focus/Discussion Group Questions (TRADOC and JPO)

Focus Group Questions/Discussion <sup>37</sup>	
Warm-Up (Dream) Question <sup>38</sup>	Describe an ideal setting within your work environment that would result in your ability to set & accomplish successful Continuous Process Improvement (CPI) objectives. In the same vein, what about for transformation objectives?
Question #1	Within the context of a strategic command-level environment, how would you define CPI; and transformation?
Question #2	Based on your experience, what do you see as some of the big challenges to reaching CPI and/or transformation goals?
Question #3	What are some factors that may cause or influence disruption in the transformation process?
Further Discussion <sup>39</sup>	As a part of a strategic command, what sorts of things may result in frustration in terms of transformation goals?

**Table 241.** Key Informant Interview Questions (ACC)

Focus Group Questions/Discussion <sup>40</sup>	
Question #1	How do you describe or define Business Transformation (BT), specifically within a military context?
Question #2	Do you sense that the manner in which BT is understood differs from one branch of the military to the next?
Question #3	How would you describe your experience as you work toward transformation goals/objectives?
Question #4	Can you tell me about some of the tools, tactics and approaches you use in your day-to-day work to help reach transformation goals?
Question #5	Can you share with me what are some factors, situations or occurrences that may cause deviation of transformation goals or distracting or disruptive toward achieving these goals?

<sup>37</sup> During the early research phase (March/April 2012), questions/discussions pertaining "Continuous Process Improvement (CPI)" were included during the focus groups. By September 2012, however, the research had been further scoped down to concentrate on "business transformation" aspects only.

<sup>38</sup> The purpose of the "dream" question was to have participants describe an ideal environment without constraints of any kind. Once information for the perfect environment had been defined, the facilitator transitioned to "reality" (questions 1 through 3). Therefore, depending on the participants' feedback, any significant differences/viewpoints between the ideal and reality conditions further substantiate the rationale for conducting the research.

<sup>39</sup> Due to a 90-minute time constraint, the [Further Discussion] was *not* addressed in the first focus group at TRADOC (03/19/2012).

<sup>40</sup> See footnote #37. The questions for the key informant interviews (conducted at Langley's Air Combat Command) were focused solely on business transformation.

**Table 242.** Emerging Themes (Key Takeaways) – TRADOC (03/19/2012)

Emerging Themes (Key Takeaways)		
Warm-Up (Dream) Question	Change of leadership (continuous cycle of reinventing)	
	Common understanding	
	Common understanding; feedback mechanism	
	Historical perspective/narrative	
	Holistic viewpoint; 2 <sup>nd</sup> and 3 <sup>rd</sup> order effects	
	Linkages across processes (instead of stove-piping); 2 <sup>nd</sup> and 3 <sup>rd</sup> order effects	
	Process owner engagement	
	Process owner-ship (end-to-end)	
	Push-back on efficiencies in a not-for-profit organization (no reward for created efficiencies; instead, loss of personnel or increased work load)	
	Requirement for leadership support (to implement change)	
	Requirement for strategic analysis	
	Strategic communications	
	Time requirements for implementing change/improvement	
	Understanding of who process owners are	
	Unintended consequences	
Workforce education		
Question #1	Army Learning Model (2015)	
	Change in leadership; circular CPI (or CPA)	
	Common understanding/knowledge-sharing	
	Continuous Process Adjustment (CPA)	
	Decisions and their domino effect (2 <sup>nd</sup> and 3 <sup>rd</sup> order effects)	
	Dependency on service providers (suppliers)	
	Leadership style/personality	
	Leadership turbulence	
	Political plans	
	Reactive vs. proactive	
	Resource turbulence	
	Unfunded mandates	
	Variation in command philosophy(ies)	
	Question #2	Challenges in communications
		Change creates “winners and losers”
Common understanding (across hierarchy)		
Enduring ownership		
Information sharing (takes too long from top to bottom)		
Lack of accountability		
Lack of documentation; inefficient knowledge-sharing (version control issues)		
Policy change may result in political implications/decisions		
Variation in command philosophy		
Question #3	Agile project team establishment/discontinuation	
	Change in leadership results in change of priorities	
	Change of core personalities	
	Echelon interpretation	

Table 242. Continued.

Economics; force reduction  
Inefficient communications  
Investments (in a not-for-profit organization)  
Lack of knowledge management  
Lack of metrics  
Lack of project coordination/management  
Lack of staff integration  
Lack of understanding of goals (not actionable)  
Ownership/stove-piping  
Requirement for (dedicated) Chief of Staff  
Requirements forecasting

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Table 243. Emerging Themes (Key Takeaways) – JPO (03/30/2012)

Emerging Themes (Key Takeaways)	
Warm-Up (Discussion)	Economics; program maintenance
	Policy change may result in political implications/decisions
	Removal of politics hampering change and/or CPI
	Requirement for leadership support (to implement change)
	Requires culture/environment that foster change
	Time requirements for implementing change/improvement
Question #1	Feedback mechanism
	Forward planning
	Lack of documentation; inefficient knowledge-sharing
	Leadership/management endorsement
	Requirements documentation
	Requirements forecasting
	Unintended consequences
Question #2	Budget-driven requirements/constraints
	Common understanding (across hierarchy)
	Costs vs. speed vs. quality
	Customer understanding (internal & external)
	Expertise/skill sets vs. compressed timelines
	Funding/personnel/customer requirements
	Lack of explicit knowledge
	Lack of thorough testing schedule(s)
	Linkages across processes; 2 <sup>nd</sup> and 3 <sup>rd</sup> order effects
	Process documentation
	Product delivery pressure due to compressed timelines
	Product development speed (change turbulences)
	Reduced timelines resulting in project pressures
	Requirement for analytical rigor
	Requirement for problem definition/statement
	Requirements for early definition of constraints/limitations
	Requirements understanding
	Selection of quality control model
	Selection process for solution(s)
	Training proof of confidence
Training/experimentation mandates	
Unwillingness to relinquish resources	
Variations in common terminology	
Variations in knowledge sharing (pull vs. push)	
Question #3	Concern of loss of control
	Control of day-to-day operations
	Different colors of money
	Lack of metrics
	Need to leave a legacy (“breaking a fixed problem”)
	Personnel continuity

Table 243. Continued.

	Political environment; political plans
	Product marketing
	Product transitioning
	Reduced capability due to budget-constraints
	Resistance to change
	-----
Further Discussion	Ad hoc project kick-offs and starts
	Change in administration (therefore; the inability to control external factors)
	Enforcement/threat to show immediate return of investment
	Lack of understanding of goals
	Leadership turbulence (i.e., change in leadership results in change of priorities)
	Mandate to use up annual budget by end of the FY (inflexibility to support multi-annual budget)
	Product development speed (change turbulences)
	Resource turbulence (resulting in inability to execute long-term project planning)
	Slow response times

**Table 244.** Emerging Themes (Key Takeaways) – TRADOC (04/05/2012)

Emerging Themes (Key Takeaways)	
Warm-Up (Dream) Question	Common understanding across hierarchy
	Common understanding of resources
	Common understanding of shareholders
	Concern of loss of control
	Feedback mechanism
	Fostering a culture of communications/information sharing
	Linkages across processes; understanding of dynamic environment
	Misconception that leaders have all the answers
	Need for forward planning
	Potential need for reward system (for created efficiencies)
	Prevent unintended consequences (i.e., force reduction)
	Process owner engagement (motivation)
	Push for incremental changes
	Push-back on efficiencies in a not-for-profit organization
	Requirement for analytical rigor
	Understanding of internal and external factors
	Understanding of who process owners are
Variations in knowledge sharing (pull vs. push)	
Willingness to change	
Question #1	Concern of loss of control
	Holistic viewpoint (need to know end-state)
	Inefficient communications/planning/execution
	Lack of efficient resource utilization
	Lack of metrics
	Laws prevent agility/flexibility
	Policy change may result in political implications/decisions
	Political environment; political plans
	Push-back on efficiencies in a not-for-profit organization
	Regulatory constraints
	Requirement for strategic analysis
Response to mandates	
Self-imposed constraints/policies/regulations	
Question #2	Culture where dissent is not valued (consider a metric)
	Lack of accountability
	Lack of metrics
	Lack of objective self-diagnose (outsiders can pinpoint issue easier than insiders)
	Leadership style/personality
	Leadership turbulence (i.e., change in leadership slow/no response)
	Resistance to change (waiting for leader to leave)
Unwillingness to change	
Unwillingness to relinquish resources	
Q. #2	Change of leadership (loss of knowledge)
	Leadership style/personality (conflicting personnel models)

Table 244. Continued.

	Politics (congressional, joint, service, and command level)
	Resistance to change
	Size and scope (of the organization)
	Unwillingness to relinquish resources
	Workforce balance (need for continuity vs. discontinuity)
	Workforce education
	-----
Further Discussion	Ad hoc project kick-offs and starts
	External threat factors (cyber war)
	Force reduction
	Governance and politics
	Hampering creativity
	Lack of agility (hampering creativity)
	Lack of courage
	Lack of documentation (codification of policy/directive)
	Lack of institutional transformation
	Lack of understanding why to transform
	Leadership turbulence (i.e., change in leadership results in change of priorities)
	Reluctance on decision-making (gridlock)
	Slow response times (or not seeing any change)
	Unwillingness to change (too much change)
Unwillingness to relinquish resources (harboring work)	

**Table 245.** Emerging Themes (Key Takeaways) – ACC (09/27/2012)

Emerging Themes (Key Takeaways)	
Question #1	Business models may not apply to military
	Lack of top-leadership buy-in and guidance
	Smaller process improvement initiatives
	Sustained readiness (function of training, materiel, supply, and logistics)
Question #2	Different set of problem-solving methodologies
	Fundamentals are the same (different “labels” may apply)
	Implementation of Lean Six Sigma
Question #3	Lack of coherent sets of strategic priorities, goals, end-states, objectives, and measures
	Priorities are too broad (thus, everything contributes)
	Operate in vacuum (lack of knowledge and information)
	Duplication of effort
	Must see return of investment
	Refer to “reinvestment” instead of “savings”
	Status quo
	Commander’s personality
	Commander’s rotate every 24 months (or less); constancy of purpose but not consistency of implementation
	Leadership rotation may result in positive/negative outcomes
Question #4	8-step problem-solving process
	Educating workforce; resources; show profit (ROI)
	Ensuring measurable targets and performance goals are in place
	Follow-up action plan
Question #5	Having the right “tools” available
	“Cheese Factor” (i.e., “who moved my cheese?”)
Question #5	Elections can be “game changers”
	Fear of losing job/resources
	Lack of goals that are understandable to every level
	Readiness and sustainment; balancing recapitalization and modernization
	Return of investment
Strategic alignment and deployment is key of successful innovation	

**Table 246.** Frequency Distribution of Emerging Themes (TRADOC and JPO)

Emerging Theme	# of Related Comments
Understanding of the DoD policy/organizational goals	26
Regulatory and budgetary constraints/influences	26
Reluctance to change	17
Communications/knowledge-sharing	16
Need for analysis/planning	14
Process/staff integration	11
Leadership turbulence	10
Unpredictable instability	8
Process owner-ship	7
Leadership support	7
Leadership style and culture	7
Effective operations	6
Workforce education	4
Leadership continuity	4
Metrics	4
Others	3
Lack of progress	2
Environmental threats/challenges	2
<b>Total</b>	<b>174</b>

**Table 247.** Selection of Dominant Emerging Themes

Emerging Theme (Original Term)		Selected Theme (Modified Term) <sup>41</sup>
Leadership turbulence	→	Leadership Turbulence
Reluctance to change	→	Resistance to Business Transformation
Leadership style and culture	→	Lack of Agility in Military Culture

<sup>41</sup> To properly scope the research effort to a more manageable domain, it was necessary to select a subset of emerging themes while maintaining a focus area that is worthy for Ph.D.-level research. The outcome of the selection process laid the foundation for this academic undertaking. As listed below, the following selection criteria were utilized for identifying a valid subset of the most critical emerging themes:

- *Frequency Count* – first, per Table 246, a high frequency count of category-related topics influenced the theme selection.
- *Internal Control* – also, for this research study, only those emerging themes that could be controlled/influenced by the Commander/Commanding General (i.e., internal to the organization) were selected.
- *Existing Literature* – next, as part of the literature review, any selected emerging themes that overlap with other current military and industrial research activities (i.e., those addressing a knowledge gap within the existing literature) were further investigated.
- *Organizational Objectives* – finally, as part of the theme selection process, organizational objectives (i.e., status of current and future requirements related to DoD business transformation efforts) were taken into consideration.

## APPENDIX E: DATA IN SUPPORT OF FOCUS/DISCUSSION GROUPS

Table 248. Commanding Generals at TRADOC

Rank/Name	From	To	Months
GEN William E. DePuy	07-1973	06-1977	47
GEN Donn A. Starry	07-1977	07-1981	48
GEN Glenn K. Otis	08-1981	03-1983	19
GEN William R. Richardson	03-1983	06-1986	39
GEN Carl E. Vuono	06-1986	06-1987	11
GEN Maxwell R. Thurman	06-1987	08-1989	25
GEN John W. Foss	08-1989	08-1991	24
GEN Frederick M. Franks, Jr.	08-1991	10-1994	37
GEN William W. Hartzog	10-1994	09-1998	46
GEN John N. Abrams	09-1998	11-2002	49
GEN Kevin P. Byrnes	11-2002	08-2005	32
LTG Anthony R. Jones <sup>42</sup>	08-2005	10-2005	2
GEN William S. Wallace	10-2005	12-2008	37
GEN Martin E. Dempsey	12-2008	04-2011	28
LTG John E. Sterling, Jr. <sup>42</sup>	04-2011	04-2011	1
GEN Robert W. Cone <sup>43</sup>	04-2011	present (2012)	--

Table 249. Commanders at ACC

Rank/Name	From	To	Months
GEN John M. Loh	06-1992	07-1995	36
GEN Joseph Ralston	07-1995	02-1996	7
GEN Richard E. Hawley	02-1996	06-1999	39
GEN Ralph Eberhart	06-1999	02-2000	8
GEN John P. Jumper	02-2000	09-2001	19
Unknown (acting Commander) <sup>42</sup>	09-2001	11-2001	2
GEN Hal M. Hornburg	11-2001	09-2004	33
Unknown (acting Commander) <sup>42</sup>	09-2004	05-2005	8
GEN Ronald Keys	05-2005	10-2007	28
GEN John D. W. Corley	10-2007	09-2009	23
GEN William M. Fraser III	09-2009	09-2011	24
GEN Gilmary M. Hostage III <sup>43</sup>	09-2011	present (2012)	--

<sup>42</sup> Deputy Commanders/Commanding Generals (temporarily acting as CGs) were excluded from the analysis of *leadership turbulence*.

<sup>43</sup> Incumbent Commanders/Commanding Generals were also excluded from the analysis of *leadership turbulence* since the end date of their command tour was not known at the time of the research (2012).

**Table 250.** Commanders at ACT

Rank/Name	From	To	Months
ADM Edmund P. Giambastiani	06-2003	08-2005	25
ADM Sir Mark Stanhope <sup>42</sup>	08-2005	11-2005	3
GEN Lance L. Smith	11-2005	11-2007	24
GEN James N. Mattis	11-2007	09-2009	22
GEN Stéphane Abrial	09-2009	09-2012	36
GEN Jean-Paul Paloméros <sup>43</sup>	09-2012	present (2012)	--

**Table 251.** Statistics Pertaining “Leadership Turbulence”

Months <sup>44</sup>	TRADOC	ACC	ACT
Min	11	7	22
Max	49	39	36
Mean	<b>34</b>	<b>21</b>	27
Median	37	23	24

<sup>44</sup> Based on the historical data, it was determined that, on average, Commanders and Commanding Generals (i.e., at TRADOC, ACC, or ACT) change/rotate every 21 to 34 months. Although the data sources (Wikipedia) are not peer-reviewed, the rotation dates were validated by staff members within each organization. The URLs for the three strategic military commands under consideration are as follows:

- [http://en.wikipedia.org/wiki/Commanding\\_General,\\_United\\_States\\_Army\\_Training\\_and\\_Doctrine\\_Command](http://en.wikipedia.org/wiki/Commanding_General,_United_States_Army_Training_and_Doctrine_Command)
- [http://en.wikipedia.org/wiki/List\\_of\\_United\\_States\\_Air\\_Force\\_four-star\\_generals](http://en.wikipedia.org/wiki/List_of_United_States_Air_Force_four-star_generals)
- [http://en.wikipedia.org/wiki/Allied\\_Command\\_Transformation](http://en.wikipedia.org/wiki/Allied_Command_Transformation)



## APPENDIX F: LITERATURE REVIEW

**Table 252.** Academic Journals Reviewed (incl. frequency count of articles)

Journal	Freq. Count
Academy of Management Journal	1
Academy of Management Review	1
Administrative Science Quarterly	1
Air & Space Power Journal	4
American Journal of Political Science	1
Applied Psychology	1
Business Strategy Review	1
Consulting Psychology Journal	1
Decision Sciences	1
Defense Acquisition Research Journal	3
Defense AT&L	1
Economic Science Series	1
Engineering Management Journal	1
Financial Management	1
Global Business & Organizational Excellence	1
Harvard Business Review	4
Human Resource Planning	1
Information Knowledge Systems Management	1
Interdisciplinary Journal of Contemporary Research in Business	1
International Journal of Business Insights & Transformation	1
International Journal of Management	1
International Journal of Training & Development	1
Intervention Research	1
Journal of Behavioral & Applied Management	1
Journal of Business Communication	1
Journal of Change Management	4
Journal of Information Technology	1
Journal of Leadership Studies	1
Journal of Management Studies	1
Journal of Military Ethics	1
Journal of Organisational Transformation & Social Change	2
Journal of Public Procurement	1
Journal of the Quality Assurance Institute	1
Knowledge & Process Management	1
Leader to Leader	1
Leadership in Action	1
Leadership Quarterly	1
Military Psychology	5
MIS Quarterly	1
MIT Sloan Management Review	1

Table 252. Continued.

Organization Science	1
Organization Studies	1
People & Strategy	1
Physician Executive	1
Project Management Journal	1
Public Administration Review	1
Public Management Review	1
Public Manager	2
Survival	1
The Academy of Management Review	1
Theoretical & Applied Economics	1
U.S. Army Medical Department Journal	1
Academy of Management Journal	1
<hr/> Total	<hr/> 69

## APPENDIX G: INSTITUTIONAL REVIEW BOARD

**Table 253. Human Subject Training Certification**

CITI Collaborative Institutional Training Initiative		
Social & Behavioral Research - Basic/Refresher Curriculum Completion Report Printed on 09/29/2011		
Learner:	Thomas Bock (username: [REMOVED])	
Institution:	Old Dominion University	
Contact Information:	Address [REMOVED]	
	City [REMOVED]	
	Department: Batten College of Engineering and Technology	
	Phone [REMOVED]	
	E-mail [REMOVED]	
Social & Behavioral Research - Basic/Refresher: Choose this group to satisfy CITI training requirements for Investigators and staff involved primarily in Social/Behavioral Research with human subjects.		
Stage 1. Basic Course Passed on 09/29/11 (Ref # 6792168)		
Required Modules	Date Completed	Score
Belmont Report and CITI Course Introduction	09/29/11	3/3 (100%)
Students in Research	09/29/11	8/10 (80%)
History and Ethical Principles - SBR	09/29/11	4/4 (100%)
Defining Research with Human Subjects - SBR	09/29/11	5/5 (100%)
The Regulations and The Social and Behavioral Sciences - SBR	09/29/11	5/5 (100%)
Assessing Risk in Social and Behavioral Sciences - SBR	09/29/11	5/5 (100%)
Informed Consent - SBR	09/29/11	5/5 (100%)
Privacy and Confidentiality - SBR	09/29/11	4/5 (80%)
Research with Prisoners - SBR	09/29/11	4/4 (100%)
Research with Children - SBR	09/29/11	4/4 (100%)
Research in Public Elementary and Secondary Schools - SBR	09/29/11	4/4 (100%)
International Research - SBR	09/29/11	3/3 (100%)
Internet Research - SBR	09/29/11	4/4 (100%)
Research and HIPAA Privacy Protections	09/29/11	4/5 (80%)
Conflicts of Interest in Research Involving Human Subjects	09/29/11	2/5 (40%)
For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by your institution.		
Paul Braunschweiger Ph.D.		
Professor, University of Miami		
Director Office of Research Education		
CITI Course Coordinator		

**Table 254.** Human Subject Training Certification (Refresher Course)

CITI Collaborative Institutional Training Initiative		
Social & Behavioral Research - Basic/Refresher Curriculum Completion Report Printed on 06/27/2013		
Learner:	Thomas Bock (username: [REMOVED])	
Institution:	Old Dominion University	
Contact Information:	Address [REMOVED]	
	City [REMOVED]	
	Department: Batten College of Engineering and Technology	
	Phone [REMOVED]	
	Email [REMOVED]	
Social & Behavioral Research - Basic/Refresher: Choose this group to satisfy CITI training requirements for Investigators and staff involved primarily in Social/Behavioral Research with human subjects.		
Stage 2. SBR 101 refresher Passed on 06/27/13 (Ref # 8210422)		
Required Modules	Date Completed	Score
Defining Research with Human Subjects	06/27/13	1/2 (50%)
Privacy and Confidentiality	06/27/13	2/2 (100%)
Assessing Risk	06/27/13	2/2 (100%)
Research with Children	06/27/13	2/2 (100%)
International Research	06/27/13	2/2 (100%)
History and Ethical Principles	06/27/13	1/2 (50%)
Federal Regulations for Protecting Research Subjects	06/27/13	2/2 (100%)
Informed Consent	06/27/13	2/2 (100%)
Research with Prisoners	06/27/13	2/2 (100%)
Research in Educational Settings	06/27/13	1/2 (50%)
Instructions	06/27/13	no quiz
For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by your institution.		
Paul Braunschweiger Ph.D. Professor, University of Miami Director Office of Research Education CITI Course Coordinator		

## Old Dominion University – Institutional Review Board (IRB) Approval – Page 1

OLD DOMINION UNIVERSITY  
HUMAN SUBJECTS INSTITUTIONAL REVIEW BOARD  
RESEARCH PROPOSAL REVIEW NOTIFICATION FORM


TO: **Rafael Landaeta**  
*Responsible Project Investigator*

DATE: **July 18, 2013**  
*IRB Decision Date*

A Risk Management Approach: Investigation of Business Transformation  
Disruptors at the DoD Strategic Command Level  
*Name of Project*

Please be informed that your research protocol has received approval by the Institutional Review Board. Your research protocol is:

- Approved  
 Tabled/Disapproved  
 Approved, (Exempt) contingent on making the changes below\*

  
\_\_\_\_\_  
*IRB Chairperson's Signature*      July 18, 2013  
*date*

Contact the IRB for clarification of the terms of your research, or if you wish to make ANY change to your research protocol.

The approval is as an exempt study and therefore you do not need to submit either Progress Report(s) or a Close-out report. You must report adverse events experienced by subjects to the IRB chair in a timely manner (see university policy).

\* Approval of your research is CONTINGENT upon the satisfactory completion of the following changes and attestation to those changes by the chairperson of the Institutional Review Board. Research may not begin until after this attestation.

**\* In the Application**

- Under 4a should be changed to Y YES, since Old Dominion University is conducting the primary IRB review process.
- Under 6.2 in the application section, state how many potential subjects will participate in the study. Include a sentence stating potential study sample size in the recruitment letter/ consent document. Include a sentence that describes the general focus/content of the questions in the survey.
- Under # 7. insert 07/18/2013 for the CITI training certificate date.

## Old Dominion University – Institutional Review Board (IRB) Approval – Page 2

**Attestation**

As directed by the Institutional Review Board, the Responsible Project Investigator made the above changes. Research may begin.

  
\_\_\_\_\_  
IRB Chairperson's signature

July 30, 2013

date

## Department of the Army – Institutional Review Board (IRB) Approval

REPLY TO  
ATTENTION OFDEPARTMENT OF THE ARMY  
U.S. ARMY COMBINED ARMS CENTER  
LEADER DEVELOPMENT AND EDUCATION  
100 STIMMON AVENUE  
FORT LEAVENWORTH, KANSAS 66027-2201

ATZL-SWA-QA

19 November 2013

MEMORANDUM FOR: Thomas Bock, Old Dominion University

SUBJECT: DoD Review of Survey Research: A Risk-Management Approach: Investigation of Business Transformation Disruptors at the doD Strategic command Level

1. As the LD&E Human Protections Administrator, DoD Assurance #A10033, I have reviewed your research protocol and concur with the exempt determination stated in the Old Dominion University IRB findings, exempt criteria category 2.
2. A review of the survey found that no personally identifiable information was requested and all questions were of minimal risk to participants.
3. In the event this survey be administered again as a subsequent phase of the research a survey control number must be provided on the opening page of the survey. Because the survey is administered to two or more major commands the Army Research Institute (ARI) is the issuing agency for the control number.
4. Should you have questions concerning the above, please contact Maria Clark in the CGSC Quality Assurance Office, room 4521 Lewis & Clark, (913) 684-7332.

Handwritten signature of Maria L. Clark in black ink.

Maria L Clark  
Human Protections Administrator  
IRB Administrator  
Survey Control Officer

## APPENDIX H: SURVEY INSTRUMENT (TRADOC)

### Obtaining Approval for a Survey of U.S. Army Personnel

**Attitude and Opinion Survey:** A survey is a systematic data collection, using face-to-face or telephonic interviews, or self-administered questionnaires (including Web surveys), from a sample of 10 or more persons as individuals or representatives of agencies (44 USC § 3502). The questionnaires or interview protocols contain identical questions about attitudes, opinions, behaviors, and related demographic information. The results of the survey will be used to assess and guide current and planned Army policies, programs, and services. The findings can be generalized to all members of the target population.

#### Applicability:

1. All attitude and opinion surveys of Active Army personnel conducted in two or more major commands (Army Commands, Army Service Component Commands, or Direct Reporting Units, see Figure 1) must be approved by ARI prior to administration. (For this guidance, "Major Subordinate Commands" are not considered as major commands.) Requests for survey approval from ARI shall be forwarded to ARI (DAPE-ARI-PS) and must provide the information outlined in Figure 2 (see AR 600-46, Attitude and Opinion Survey Program).
2. Attitude and opinion surveys conducted solely within a single command (e.g., ACOM, division, brigade, battalion, company/detachment) must be approved by the unit commander.
3. Attitude and opinion surveys of military members conducted in two or more DoD Components (Services) must be approved by the Defense Manpower Data Center, IAW DODI 1100.13 (Surveys of DoD Personnel).
4. Surveys also must be submitted to the appropriate Human Use Committee.

**Standards:** A survey will be approved only if

- (1) The need for information warrants the expenditure of resources associated with survey development, administration, and analysis.
- (2) The survey is designed to produce reliable and valid information without bias while imposing minimum burden on respondents and supporting organizations.
- (3) Survey design, content, and administration protect the anonymity and respect the personal rights and privacy of individuals selected as respondents. Surveys will avoid offensive or degrading topics. Responses will not be personally identified with the respondents without consent, nor made a part of their personnel files. (The governing Institutional Review Board will assist in making this determination.)
- (4) Justification is furnished to support the need for all questions in the survey.
- (5) The type of information required is suitable for survey methodology.
- (6) The occurrence of events has caused previously collected information to become suspect in terms of

accuracy or completeness, or sufficient time has passed to warrant the collection of trend data.

- (7) Information does not exist in other forms or cannot be obtained through other sources.
- (8) When requested by ARI, proponents must obtain a Report Control Symbol (RCS) from their agency. Usually, the RCS for ARI's surveys will be assigned.

#### Examples:

1. Assuming the planned survey of Army personnel will be conducted in two or more major commands, the following surveys are examples that would require ARI review and approval:
  - Survey of Army Families
  - IG Supervisors Survey
  - Army Leadership Assessment Survey
  - Army War College Alumni Survey
  - Medical Specialist Corps Survey
  - Human Relations Survey
  - G-I Incentives Survey
2. The following survey and types of surveys are examples that would not require ARI review and approval:
  - Survey of the 173<sup>rd</sup> Stryker Brigade Combat Team
  - Clinical Investigations
  - Command Climate Surveys (within a command)
  - Customer Satisfaction Surveys

It is recommended that Clinical Investigations include only those attitude and opinion questions that are directly related to the health and treatment matters.

#### Survey Control Number

ARI authorization of all approved attitude and opinion surveys will be indicated by a survey control number (SCN). The series will change each fiscal year. The SCN will be on the first page of the instrument or web site in the following format:

SURVEY APPROVAL AUTHORITY: U.S. ARMY  
RESEARCH INSTITUTE FOR THE BEHAVIORAL AND  
SOCIAL SCIENCES  
SURVEY CONTROL NUMBER: DAPE-ARI-AO-XX-XX  
RCS: XXXXXX

#### Submit Request to:

Army Personnel Survey Office  
U.S. Army Research Institute  
for the Behavioral and Social Sciences  
2511 Jefferson Davis Highway (U.S.P.S. mail)  
2530 Crystal Drive, 4<sup>th</sup> Floor  
Arlington, VA 22202-3926  
(703) 602-7858/7877, DSN 332-7858/7877  
ari\_ariington\_apso@hqda.army.mil



<p><b>Army Commands</b>            Forces Command (FORSCOM)            Training and Doctrine Command (TRADOC)            Army Materiel Command (AMC)</p> <p><b>Army Service Component Commands</b>            USARCENT (Third Army)            USARNORTH (Fifth Army)            USARSOUTH (Sixth Army)            USAREUR (Seventh Army)            USARPAC (United States Army Pacific)            Eighth United States Army (EUSA)            United States Army Special Operations Command (USASOC)            Surface Deployment and Distribution Command (SDDC)            Space and Missile Defense Command (SMDC)</p>	<p><b>Direct Reporting Units</b>            Network Command (NETCOM)            Medical Command (MEDCOM)            Intelligence and Security Command (INSCOM)            Criminal Investigation Division Command (CIDC)            United States Army Corps of Engineers (USACE)            Military District of Washington (MDW)            Army Test and Evaluation Command (ATEC)            United States Military Academy (USMA)            United States Army Reserve Command (USARC)            Acquisition Support Center            Installation Management Command (IMCOM)</p>
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**Figure 1. Major Army command structure**

1. Title of survey.
2. Name of sponsoring organization or office.
3. Name, title, mailing address, telephone number, email address of senior project officer(s).
4. Proposed schedule for survey instrument completion, survey administration, data analysis, final report.
5. Identification of the Internet site for a web survey (for compliance with AR 25-2, Chapter 5). Attach Authority to Operate (ATO) documentation.
6. Name of Institutional Review Board (name of agency, IRB chair).
7. Justification for survey request. (Reason why data are needed, specific objectives and how data will be used.)
8. Background research. (Description of the planning, coordination, and staffing of the survey. Include any applicable military or civilian references.)
9. Target population. (Description and size of total population and any subgroups to be used in analysis.)
10. Sample. (Description and size of sample and any subgroups to be used in analysis, type of sample, selection procedures and rationale, degree of over-sampling for non-response.)
11. Data analysis. (Manner of data processing, plan of statistical analysis, statistical procedures to be used, and justification for each, and description of the expected interaction of the major variables. If scales or indexes are to be formed, provide a detailed statement on how items will be combined.)
12. Administration procedures. (Method of data collection and justification, estimated frequency and duration, command effort required, time required for respondent to complete the survey, expected schedule of events.)
13. Draft of the survey instrument, letters of instruction to respondents, and Privacy Act Statement.
14. Planned distribution of survey results.

**Figure 2. Information requirements for requesting survey approval**

July 2010

## Welcome Page

Sir/Ma'am,

You have been invited to participate in a research study on business transformation in strategic commands, in this case TRADOC.

Your opinions are important: survey results will be shared with TRADOC to gain insight into change management, business transformation and risk management. It will take approximately 20 minutes to complete this questionnaire. Your participation is completely voluntary and you can withdraw from the survey at any time without comment or penalty.

This questionnaire is anonymous – we will not ask for your name. All data from this research will be reported only in the aggregate.

Please complete the survey NLT 27 November 2013.

If you have questions about the survey, you may contact COL Cameron Leiker, TRADOC Chief Knowledge Officer and Knowledge Management-Process Improvement Program Manager at [cameron.a.leiker.mil@mail.mil](mailto:cameron.a.leiker.mil@mail.mil) or Mr. Thomas Bock at [tbock001@odu.edu](mailto:tbock001@odu.edu) for further information.

Thank you in advance for your time and support!

MARK J. MACCARLEY  
MAJOR GENERAL, US ARMY  
Deputy Chief of Staff, TRADOC

## PRIVACY ACT STATEMENT

Authority. 10 U.S.C. § 2358

Purpose. Information will be collected for an Engineering Management dissertation titled "An Investigation of Business Transformation Disruptors at the Military Strategic Command Level." The purpose of this dissertation is to validate and verify a multi-attribute model which will evaluate the data collected from the test experiment in order to determine if the model has the efficacy for identifying factors that may influence/impact *business transformation* objectives and *change management* plans.

Routine Uses. The data collected will be used for model analyses and dissertation work conducted for a Doctor of Philosophy in Engineering Management at Old Dominion University. Additional use of the information may be granted to military organizations following the provisions of the Freedom of Information Act or contracts and agreements. I voluntarily agree to its disclosure to the organizations/agencies, and I have been informed that failure to agree to this disclosure may make the research less useful.

Voluntary Disclosure. Provision of information is voluntary. Failure to provide the requested information may result in failure to be accepted as a research volunteer in this study.

### INFORMED CONSENT FORM FOR RESEARCH PARTICIPATION

I understand that all of my survey responses will be kept confidential and will be reported only in the aggregate.

I further understand that disclosure of demographic information (e.g., rank/grade, function, and years of experience) is voluntary and I may withdraw this consent at any time without penalty.

To provide consent for participating in this study, please check the "I Agree" checkbox below. Then start the questionnaire by clicking **Continue**.

I Agree

Continue

## Business Transformation Initiatives

1. Take a look at the phrases below. They describe objectives characteristic in business transformation initiatives in strategic commands, including TRADOC.

Check all business transformation initiatives to which your daily work contributes in either a direct or indirect capacity. You may also use the write-in option (“Other”) for a business transformation initiative that you support but is not listed below.<sup>45</sup>

### Notes:

- If you and/or your unit do not support any business transformation initiative at all, then please check the “N/A” option.
- Throughout the survey, question-related terminology will be provided to you. If needed, you can access definitions, information, and/or additional background via clicking on the small, orange-colored, question mark icon (see above).<sup>46</sup>

<input type="checkbox"/>	Establishing <i>Army Campaign Plan</i>
<input type="checkbox"/>	Transforming the <i>Institutional Army</i>
<input type="checkbox"/>	Improving <i>Army Business Processes</i>
<input type="checkbox"/>	Institutionalizing the <i>Use of Quality Metrics</i>
<input type="checkbox"/>	Reforming <i>Acquisition Processes</i>
<input type="checkbox"/>	Establishing <i>Army's Enterprise Business Governance</i>
<input type="checkbox"/>	Achieving <i>Financial Auditability</i>
<input type="checkbox"/>	Supporting <i>Knowledge-Sharing Initiatives</i>
<input type="checkbox"/>	Promoting <i>Resource-Informed Decision Making</i>
<input type="checkbox"/>	Conducting <i>Leader &amp; Workforce Development</i>
<input type="checkbox"/>	N/A
<input type="checkbox"/>	Other (please specify)

<sup>45</sup> The  symbol indicates a check box (i.e., multiple values can be selected).

<sup>46</sup> The hyperlinks to the question-related terminology are only available in the electronic survey. Appendix H (Survey Instrument – Glossary of Terms) provides definitions and glossary of terms.

2. Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were modified since you started working on them.

[Auto-insert of the 1 <sup>st</sup> selected initiative (Question #1)]	▼ Extent scale <sup>47</sup>
[Auto-insert of the 2 <sup>nd</sup> selected initiative (Question #1)]	▼ Extent scale
[...]	▼ Extent scale
[Auto-insert of the n <sup>th</sup> selected initiative (Question #1)]	▼ Extent scale

3. Use the “Yes/No” drop-down menu to indicate whether any of the selected initiatives were reprioritized (i.e., a change in level of importance) since you started working on them.

[Auto-insert of the 1 <sup>st</sup> selected initiative (Question #1)]	▼ Yes/No
[Auto-insert of the 2 <sup>nd</sup> selected initiative (Question #1)]	▼ Yes/No
[...]	▼ Yes/No
[Auto-insert of the n <sup>th</sup> selected initiative (Question #1)]	▼ Yes/No

4. Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them.

[Auto-insert of the 1 <sup>st</sup> selected initiative (Question #1)]	▼ Yes/No
[Auto-insert of the 2 <sup>nd</sup> selected initiative (Question #1)]	▼ Yes/No
[...]	▼ Yes/No
[Auto-insert of the n <sup>th</sup> selected initiative (Question #1)]	▼ Yes/No

5. Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them.

[Auto-insert of the 1 <sup>st</sup> selected initiative (Question #1)]	▼ Yes/No
[Auto-insert of the 2 <sup>nd</sup> selected initiative (Question #1)]	▼ Yes/No
[...]	▼ Yes/No
[Auto-insert of the n <sup>th</sup> selected initiative (Question #1)]	▼ Yes/No

<sup>47</sup> The ▼ symbol indicates a drop-down menu. Responses to each item are measured on a 7-point scale with scale point anchors labeled as follows (Gillian, et al., 2010):

- (1) Not at all
- (2) To a very small extent
- (3) To a small extent
- (4) To a moderate extent
- (5) To a fairly great extent
- (6) To a great extent
- (7) To a very great extent

**LT – Frequent turnover/ change of a Commander or Commanding General (H1<sub>a</sub>)**

6. Select the number of Commanding Generals (CGs) under whom you have served/worked at TRADOC.

- ▼ 1
- ▼ 2
- ▼ 3
- ▼ 4
- ▼ 5 or more

Note: Throughout the survey, any reference to the CG is based on TRADOC Headquarters' Commanding General (4-star).

Please respond to the following questions rating your agreement with the statement ranging from *strongly disagree* to *strongly agree*.

(Select "N/A" only if you do not know the answer to the question.)<sup>48, 49</sup>

	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree	N/A
7. A change of your CG results in a change in commander's intent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. A change of your CG requires re-evaluation of your unit's goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. A change of your CG requires re-evaluation of your unit's priorities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<sup>48</sup> The ○ symbol indicates a radio button (i.e., only one value can be selected).

<sup>49</sup> Source for Likert scale: (Mowday & Steers, 1979)















**Confirmatory Question**<sup>50</sup>

Please respond to the following question rating your agreement with the statement ranging from *strongly disagree* to *strongly agree*.

(Select "N/A" only if you do not know the answer to the question.)

	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree	N/A
29. TRADOC is involved in implementing business transformation initiatives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

30. If applicable, what could TRADOC do differently to improve the implementation of business transformation initiatives?

**Demographics**

31. While on active duty, what is/was your military branch? Select "N/A" if you have not served on active duty.<sup>51</sup>

- ▼ Air Force
- ▼ Army
- ▼ Marines
- ▼ Navy
- ▼ N/A
- ▼ Other (please specify)

32. Select your current military rank or civilian grade.<sup>52</sup>

- ▼ O4
- ▼ O5
- ▼ O6
- ▼ GS-13
- ▼ GS-14
- ▼ GS-15
- ▼ Other (please specify)

<sup>50</sup> The purpose of the confirmatory question is to verify consistency of answers in support of the dependent variable. That is, if none of the business transformation initiatives were selected in question #1, then question #29 must either a) reflect a response in the *disagree stem* or b) indicate "N/A."

<sup>51</sup> This question also allows for a write-in option (e.g., Coast Guard, National Guard, Reserves, etc.).

<sup>52</sup> In accordance with Sub-Section 3.5.4, delimitation #4, the research target population focuses on staff members including a) military officers at the O4 to O6 level and b) civilians ranging from GS-13 to GS-15. Prior to the survey release, it was decided to also include staff members in the O3(P) category.

33. While on active duty, how many years have you served in the military? Select "N/A" if you have not served on active duty.

- ▼ 1 to 5
- ▼ 6 to 10
- ▼ 11 to 15
- ▼ 16 to 20
- ▼ More than 20
- ▼ N/A

34. Select your current organization.

- ▼ TRADOC Headquarters
- ▼ Asymmetric Warfare Group
- ▼ Army Capabilities Integration Center
- ▼ Cadet Command
- ▼ Combined Arms Center
- ▼ Combined Arms Support Command
- ▼ Initial Military Training
- ▼ Recruiting Command
- ▼ Aviation CoE
- ▼ Fires CoE
- ▼ Initial Military Training CoE
- ▼ Intelligence CoE
- ▼ Maneuver CoE
- ▼ Maneuver Support CoE
- ▼ Mission Command CoE
- ▼ Signal CoE
- ▼ Sustainment CoE
- ▼ Other (please specify)

35. What G-staff function(s) have you supported at TRADOC? Check all that apply.<sup>53</sup>

<input type="checkbox"/>	G-1 Personnel and Administration
<input type="checkbox"/>	G-2 Intelligence and Security
<input type="checkbox"/>	G-3 Operations
<input type="checkbox"/>	G-4 Logistics
<input type="checkbox"/>	G-5 Plans
<input type="checkbox"/>	G-6 Signal
<input type="checkbox"/>	G-7 Training
<input type="checkbox"/>	G-8 Finance and Contracts
<input type="checkbox"/>	G-9 Civil Affairs
<input type="checkbox"/>	Other (please specify)

<sup>53</sup> This question allowed for a write-in option.

36. Based on your selection in the previous question, select the number of years that you have served/worked in each function.

[Auto-insert of the 1 <sup>st</sup> selected function (Question #34)]	▼ Year scale <sup>54</sup>
[Auto-insert of the 2 <sup>nd</sup> selected function (Question #34)]	▼ Year scale
[...]	▼ Year scale
[Auto-insert of the n <sup>th</sup> selected function (Question #34)]	▼ Year scale

37. What is the highest level of education you have completed?

- ▼ High School
- ▼ Some college credit (no degree)
- ▼ Associate Degree
- ▼ Bachelor's Degree
- ▼ Some graduate work
- ▼ Master's Degree
- ▼ Some post-graduate work
- ▼ Doctoral Degree
- ▼ Other (please specify)

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<sup>54</sup> See survey question #33 for the year scale.

## APPENDIX H: SURVEY INSTRUMENT (GLOSSARY OF TERMS)

Table 255. Glossary of Terms (TRADOC Survey)

Term	Definition	Question #	Reference
Army Business Transformation Initiatives	(See definitions for specific Army business transformation initiatives below.)	1, 2, 3, 4, 5	(Department of the Army, 2008, 2012, 2013a)
<i>Establishing Army Campaign Plan</i>	<p>“[In 2011], the Army published the Army Campaign Plan (ACP) for Fiscal Year 2012. The Army devoted a full annex of the ACP to business transformation and included a detailed appendix that established the Business Systems Information Technology (BSIT) Implementation Plan. Army actions taken in accordance with this plan framed the Army’s cost-informed investment practices for enterprise governance, improved the efficiency and effectiveness of business operations, established responsibilities and tasks required for the Army to meet 2014 and 2017 auditability requirements and improved policy and business process alignment between the Army and DoD.”</p>		
<i>Transforming the Institutional Army</i>	<p>“The Institutional Army generates the trained and ready land forces that fulfill a broad array of defense missions.”</p>		



Table 255. Continued.

<i>Improving Army Business Processes</i>	<p>“[In 2012], the Army established effective governance mechanisms over the business mission area, defined and reengineered critical business process, conducted significant continuous process improvement activities at every echelon within the Institutional Army, improved vertical integration of activities and Army wide unity of effort with its Integrated Management System.”</p>
<i>Institutionalizing the Use of Quality Metrics</i>	<p>“The Army is committed to establishing meaningful metrics and measuring our progress. As directed by the Secretary of the Army and codified in the Army Campaign Plan (ACP), the Strategic Management System (SMS) is used to track the Army’s performance in meeting ACP campaign and major objectives. The SMS is an Army Enterprise, web-based performance management tool that aligns goals, objectives and metrics, captures strategy execution and provides a common operating picture of performance progress.”</p>
<i>Reforming Acquisition Processes</i>	<p>“The Secretary of the Army, in some instances, will direct broad-ranging action where enterprise-level changes are required. These short-term initiatives span the breadth of Institutional Army activities such as acquisition processes, human capital management, service contracts and restructuring organizations. All are geared toward making current organizations more agile and providing readiness more effectively and efficiently.”</p>

Table 255. Continued.

<i>Establishing Army's Enterprise Business Governance</i>	"The ACP also formally established the Army's Enterprise Business Governance structures which chartered the 2-Star BSIT Working Group, the 3-Star BSIT Review Group and the Executive Steering Group hosted by the Under Secretary of the Army/Chief Management Officer and Vice Chief of Staff of the Army. These three forums provided additional levels of collaboration on business and cross-functional issues. Through the BSIT governance forums, the Army addressed critical issues such as Enterprise Resource Planning system management, investment portfolio management toward the target operating environment, auditability requirements and coordination of input to the Office of the Secretary of Defense's Defense Business Council."
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Table 255. Continued.

<p>Achieving <i>Financial Auditability</i></p>	<p>“The Army Financial Improvement Plan (FIP) establishes a strategy to achieve an auditable Statement of Budgetary Resources (SBR) by Fiscal Year 2014. The FIP provides the roadmap to implement auditable business processes and effective internal controls across the Army's business environment. The FIP also addresses auditability of the systems supporting the Army's business processes, such as General Fund Enterprise Business System (GFEBS), Global Combat Support System-Army (GCSS-Army), Logistics Modernization Program (LMP) and other feeder systems.”</p>
<p>Supporting <i>Knowledge-Sharing Initiatives</i></p>	<p>“Knowledge management is the art of creating, organizing, applying, and transferring knowledge to facilitate situational understanding and decision-making. Knowledge management supports improving organizational learning, innovation, and performance. Knowledge management processes ensure that knowledge products and services are relevant, accurate, timely, and useable to commanders and decision-makers.”</p>

Table 255. Continued.

Promoting <i>Resource-Informed Decision Making</i>	“Given DoD’s overall fiscal challenges, the Army’s senior leadership has embraced a cost culture. Leaders work to ensure that the Army derives the best possible value from the expenditure of limited funds. The Army, with substantial DoD support, has implemented a broad array of complementary efforts to promote resource-informed decision making.”	
Conducting <i>Leader &amp; Workforce Development</i>	“This business initiative assists the Army in training, educating and providing experiences that progressively develop the Army Civilian Corps. [The Army] developed and implemented a comprehensive Army Civilian Training Policy to include training and leader development for all Army Civilians. The policy is included in the recently revised AR 350-1, Army Training and Leader Development.”	
Business Transformation Initiatives	“Identifiable processes that have been demonstrated to increase an organization’s efficiency and effectiveness in achieving its strategic goals and objectives.”	1, 2, 3, 4, 5 (Bock, 2013)
Contribution	“Any type of staff member involvement/support in a business transformation initiative.”	
Modified	“Any change in direction/ composition/requirement of a business transformation initiative.”	
Reprioritized	“Any change in level of importance (e.g., higher or lower priority) for a business transformation initiative.”	

Table 255. Continued.

Suspended	“Any temporary suspension (interruption) of a business transformation initiative.”		
Discontinued	“The permanent stopping (shut-down) of a business transformation initiative.”		
Change (Unnecessary)	“A change that is not desired.”	22	(Bock, 2013)
Change (Unwelcome)	“A change that is not required.”	21	(Bock, 2013)
Commander’s Intent	“The commander’s intent describes the desired end state. It is a concise expression of the purpose of the operation and must be understood two echelons below the issuing commander. It must clearly state the purpose of the mission. It is the single unifying focus for all subordinate elements.”	7, 20	(Department of the Army, 1993)
Daily Work	“Daily work activities, when implementing business transformation initiatives (e.g., ‘Transforming the <i>Institutional Army</i> ’), support the realization of business transformation processes.”	17, 18, 19	(Bock, 2013)
Feedback/ Disagreement	“It is the expression of staff members’ beliefs that a proposed initiative, proposal, plan, or policy is incompatible with the command’s objectives, goals, or mission accomplishment.”	27, 28	(Bock, 2013)
Feedback (Open)	“Personnel are encouraged to share their reactions to and opinions regarding initiatives, proposals, and plans, generated by anyone in the chain of command.”	26	(Bock, 2013)
Fluctuating Guidance	“Fluctuating guidance means senior leaders respond to changing conditions by changing directives and policy.”	13	(Bock, 2013)

Table 255. Continued.

Knowledge is Power	<i>"If I know something others don't but need to know, I have an advantage."</i>	14	(Bock, 2013)
Loss of Funding	"The loss of a budget required to maintain current operations."	24	(Bock, 2013)
Loss of Manpower	"The loss of authorization and billets."	23	(Bock, 2013)
Mandated Change	"Changes, directed by senior leaders, in the way work flow processes are organized and implemented."	19	(Bock, 2013)
Mission Performance	"Mission performance is the degree to which strategic, operational, and tactical goals are achieved."	18	(Bock, 2013)
Policy	"A definite course of action adopted for the sake of expediency, facility, etc.: <i>We have a new company policy.</i> "	12	(Collins English Dictionary [Policy], HarperCollins Publishers 2003)
Process Efficiencies	"Organizational goal to achieve a return of investment through streamlining process-associated input-output-variables."	23, 24, 25	(Bock, 2013)
Re-evaluation	"To evaluate again or differently."	8, 9	(Collins English Dictionary [Re-evaluation], HarperCollins Publishers 2003)
Regulation	"A law, rule, or other order prescribed by authority, especially to regulate conduct."	11	(Collins English Dictionary [Regulation], HarperCollins Publishers 2003)

Table 255. Continued.

Status Quo	“The existing state or condition.”	17	(Collins English Dictionary [Status Quo], HarperCollins Publishers 2003)
Strategic Command	“A higher strategic Headquarters that is commanded by a 4-star General.”	1	(Bock, 2013)
Uncertain and Unpredictable Operational Environment	“The futures of the operational environments in which the Army must conduct its missions are both uncertain and unpredictable.”	10	(Bock, 2013)
Unit Goals	“A unit goal is the desired result of unit activities and/or initiatives, itself a part of a larger organizational objective.”	8	(Bock, 2013)
Unit Priorities	“The outcomes or results units try to deliver, ordered or arranged in accordance with their importance.”	9	(Bock, 2013)
Unwillingness to Adopt Future Process Improvement	“If previous improvement efforts resulted in undesirable consequences, staff members are reluctant to adopt <i>yet another</i> process improvement effort.”	25	(Bock, 2013)

**APPENDIX I: SURVEY INSTRUMENT (LIKERT SCALES)**

**Table 256.** 7-Point Likert Scale (*Extent* stem)

Stem/Anchor	Associated Score for Data Analysis in SPSS
Not at all	1
To a very small extent	2
To a small extent	3
To a moderate extent	4
To a fairly great extent	5
To a great extent	6
To a very great extent	7

**Table 257.** Binary Scale (*Yes/No*)

Stem/Anchor	Associated Score for Data Analysis in SPSS
No	1
Yes	2

**Table 258.** 7-Point Likert Scale (*Agreement* stem)

Stem/Anchor	Associated Score for Data Analysis in SPSS
Strongly disagree	1
Moderately disagree	2
Slightly disagree	3
Neither agree nor disagree	4
Slightly agree	5
Moderately agree	6
Strongly agree	7
N/A (i.e., <i>I don't know the answer</i> )	[8]



Some survey questions (see Table 259) have a reverse impact on the dependent variable (i.e., disruption of business transformation processes). Therefore, to offset this effect, *reverse scoring* has been applied to a subset of the questionnaire. This allowed to measure *cost-versus-benefit* type of questions on the same scale (see Table 260).

**Table 259.** Survey Questions Requiring Reverse Scoring (TRADOC)

Question #	Question
15.	Effective efforts are made by senior leadership to increase collaboration among TRADOC staff.
16.	We embrace collaboration with colleagues.
18.	TRADOC senior leadership's proposed changes to the ways we perform our daily work will improve mission performance outcomes.
19.	We readily adopt mandated changes to the ways we do daily work.
22.	Changes in the organization are <i>unnecessary</i> .
26.	Efforts are made by TRADOC's senior leadership to encourage <i>open feedback</i> throughout the chain of command.
27.	Feedback/disagreement to proposed changes is <i>conveyed</i> to TRADOC's senior leadership.
28.	Feedback/disagreement to proposed changes is <i>considered</i> by TRADOC's senior leadership.
29.	TRADOC is involved in implementing business transformation initiatives.

**Table 260.** 7-Point Likert Scale (*Agreement* stem) with Reverse Scoring

Question	Reverse Scoring for Data Analysis in SPSS		
Strongly disagree	1	→	7
Moderately disagree	2	→	6
Slightly disagree	3	→	5
Neither agree nor disagree	4	→	4
Slightly agree	5	→	3
Moderately agree	6	→	2
Strongly agree	7	→	1
N/A (i.e., <i>I don't know the answer</i> ) <sup>55</sup>	[8]	→	[999]

<sup>55</sup> For questions Q6 through Q29, any responses equal to "N/A" will be recoded as [999] and marked as *missing value* (SPSS feature). Thus, they will be automatically excluded for most descriptive statistics.

## APPENDIX J: SURVEY DATA (RAW)

### Survey Question #1:

The phrases below describe objectives characteristic in business transformation initiatives in strategic commands, including TRADOC. Check all business transformation initiatives to which your daily work contributes in either a direct or indirect capacity.

Establishing Army Campaign Plan (1)	354	8.10%
Transforming the Institutional Army (2)	670	15.33%
Improving Army Business Processes (3)	338	7.73%
Institutionalizing the Use of Quality Metrics (4)	325	7.44%
Reforming Acquisition Processes (5)	220	5.03%
Establishing Army's Enterprise Business Governance (6)	131	3.00%
Achieving Financial Auditability (7)	178	4.07%
Supporting Knowledge-Sharing Initiatives (8)	555	12.70%
Promoting Resource-Informed Decision Making (9)	522	11.95%
Conducting Leader & Workforce Development (10)	669	15.31%
Other (please specify) (11)	76	1.74%
N/A	332	7.60%
<b>Total</b>	<b>4370</b>	
Mean <sup>56</sup>	6.30	
Standard Deviation	3.47	
Variance	12.03	

<sup>56</sup> In this appendix, the raw data's descriptive statistics (i.e., mean, standard deviation, and variance) were automatically generated by *QuestionPro.com*. While the data provide some valuable (initial) statistical insights about the survey responses, the computed values were *not* used for actual data analysis purposes in this research. For instance, as part of question #33, any response equal to "N/A" (data element #6) skews the outcome since such response is viewed as "having served 6 years on active duty." The actual data analysis (in SPSS) will account for both a) recoding of any outlier data elements and b) reverse scoring of cost-versus-benefit type of questions.

<b>Survey Question #1 (Other options)</b>	
<b>Business Transformation Initiatives<sup>57</sup></b>	<b>Freq. Count</b>
[No <i>actual</i> BTI was identified]	35
Achieving Training Transformation	7
Building Partner Capacity	1
Developing Best Practices (Lessons Learned)	2
Developing Capabilities	2
Developing Strategic Management Initiatives	2
Developing Training Initiatives	7
Ensuring Cyber Security	1
Facilitating Functional Integration of Army 2020	2
Institutionalizing Army Learning Model 2015	7
Institutionalizing Risk Management	1
Integrating Capability Development	3
Promoting Organizational Transformation	6
<b>Total</b>	<b>76</b>

<sup>57</sup> Some of the submitted (other) business transformation initiatives were rephrased in order to reflect proper referencing of a program/project/activity. In some instances, activities outside business transformation efforts were listed. They were counted as "No *actual* BTI was identified."

**Survey Question #2.1:**

Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were modified since you started working on them: *Establishing Army Campaign Plan*

Not at all (1)	23	6.53%
To a very small extent (2)	71	20.17%
To a small extent (3)	74	21.02%
To a moderate extent (4)	101	28.69%
To a fairly great extent (5)	40	11.36%
To a great extent (6)	29	8.24%
To a very great extent (7)	14	3.98%
Total	352	

Mean	3.59
Standard Deviation	1.50
Variance	2.24

**Survey Question #2.2:**

Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were modified since you started working on them: *Transforming the Institutional Army*

Not at all (1)	21	3.14%
To a very small extent (2)	112	16.77%
To a small extent (3)	158	23.65%
To a moderate extent (4)	212	31.74%
To a fairly great extent (5)	92	13.77%
To a great extent (6)	50	7.49%
To a very great extent (7)	23	3.44%
Total	668	

Mean	3.72
Standard Deviation	1.37
Variance	1.86

**Survey Question #2.3:**

Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were modified since you started working on them: *Improving Army Business Processes*

Not at all (1)	20	5.95%
To a very small extent (2)	71	21.13%
To a small extent (3)	89	26.49%
To a moderate extent (4)	87	25.89%
To a fairly great extent (5)	45	13.39%
To a great extent (6)	15	4.46%
To a very great extent (7)	9	2.68%
Total	336	

Mean	3.44
Standard Deviation	1.37
Variance	1.89

**Survey Question #2.4:**

Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were modified since you started working on them: *Institutionalizing the Use of Quality Metrics*

Not at all (1)	19	5.88%
To a very small extent (2)	45	13.93%
To a small extent (3)	78	24.15%
To a moderate extent (4)	96	29.72%
To a fairly great extent (5)	43	13.31%
To a great extent (6)	29	8.98%
To a very great extent (7)	13	4.02%
Total	323	

Mean	3.74
Standard Deviation	1.46
Variance	2.12

**Survey Question #2.5:**

Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were modified since you started working on them: *Reforming Acquisition Processes*

Not at all (1)	28	12.84%
To a very small extent (2)	37	16.97%
To a small extent (3)	59	27.06%
To a moderate extent (4)	42	19.27%
To a fairly great extent (5)	30	13.76%
To a great extent (6)	14	6.42%
To a very great extent (7)	8	3.67%
Total	218	

Mean	3.38
Standard Deviation	1.57
Variance	2.46

**Survey Question #2.6:**

Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were modified since you started working on them: *Establishing Army's Enterprise Business Governance*

Not at all (1)	15	11.63%
To a very small extent (2)	25	19.38%
To a small extent (3)	31	24.03%
To a moderate extent (4)	37	28.68%
To a fairly great extent (5)	13	10.08%
To a great extent (6)	6	4.65%
To a very great extent (7)	2	1.55%
Total	129	

Mean	3.26
Standard Deviation	1.40
Variance	1.96

**Survey Question #2.7:**

Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were modified since you started working on them: *Achieving Financial Auditability*

Not at all (1)	7	3.93%
To a very small extent (2)	28	15.73%
To a small extent (3)	30	16.85%
To a moderate extent (4)	52	29.21%
To a fairly great extent (5)	27	15.17%
To a great extent (6)	23	12.92%
To a very great extent (7)	11	6.18%
Total	178	

Mean	3.99
Standard Deviation	1.55
Variance	2.39

**Survey Question #2.8:**

Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were modified since you started working on them: *Supporting Knowledge-Sharing Initiatives*

Not at all (1)	23	4.16%
To a very small extent (2)	68	12.30%
To a small extent (3)	114	20.61%
To a moderate extent (4)	183	33.09%
To a fairly great extent (5)	94	17.00%
To a great extent (6)	42	7.59%
To a very great extent (7)	29	5.24%
Total	553	

Mean	3.90
Standard Deviation	1.42
Variance	2.01

**Survey Question #2.9:**

Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were modified since you started working on them: *Promoting Resource-Informed Decision Making*

Not at all (1)	31	5.96%
To a very small extent (2)	52	10.00%
To a small extent (3)	97	18.65%
To a moderate extent (4)	171	32.88%
To a fairly great extent (5)	80	15.38%
To a great extent (6)	60	11.54%
To a very great extent (7)	29	5.58%
Total	520	

Mean	3.99
Standard Deviation	1.50
Variance	2.24

**Survey Question #2.10:**

Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were modified since you started working on them: *Conducting Leader & Workforce Development*

Not at all (1)	22	3.30%
To a very small extent (2)	88	13.19%
To a small extent (3)	120	17.99%
To a moderate extent (4)	201	30.13%
To a fairly great extent (5)	95	14.24%
To a great extent (6)	88	13.19%
To a very great extent (7)	53	7.95%
Total	667	

Mean	4.10
Standard Deviation	1.54
Variance	2.38



**Survey Question #2.11:**

Based on your daily work experience with the business transformation initiative(s) you selected in question #1; indicate the level of degree to which they were modified since you started working on them: *Other [combined summary]*

Not at all (1)	6	7.89%
To a very small extent (2)	2	2.63%
To a small extent (3)	6	7.89%
To a moderate extent (4)	23	30.26%
To a fairly great extent (5)	11	14.47%
To a great extent (6)	16	21.05%
To a very great extent (7)	12	15.79%
Total	76	
Mean	4.67	
Standard Deviation	1.70	
Variance	2.89	

**Survey Question #3.1:**

Use the "Yes/No" drop-down menu to indicate whether any of the selected initiatives were reprioritized (i.e., a change in level of importance) since you started working on them: *Establishing Army Campaign Plan*

No (1)	239	67.90%
Yes (2)	113	32.10%
Total	352	

Mean	1.32
Standard Deviation	0.47
Variance	0.22

**Survey Question #3.2:**

Use the "Yes/No" drop-down menu to indicate whether any of the selected initiatives were reprioritized (i.e., a change in level of importance) since you started working on them: *Transforming the Institutional Army*

No (1)	385	57.63%
Yes (2)	283	42.37%
Total	668	

Mean	1.42
Standard Deviation	0.49
Variance	0.24

**Survey Question #3.3:**

Use the "Yes/No" drop-down menu to indicate whether any of the selected initiatives were reprioritized (i.e., a change in level of importance) since you started working on them: *Improving Army Business Processes*

No (1)	215	63.99%
Yes (2)	121	36.01%
Total	336	

Mean	1.36
Standard Deviation	0.48
Variance	0.23

**Survey Question #3.4:**

Use the "Yes/No" drop-down menu to indicate whether any of the selected initiatives were reprioritized (i.e., a change in level of importance) since you started working on them: *Institutionalizing the Use of Quality Metrics*

No (1)	180	55.73%
Yes (2)	143	44.27%
Total	323	

Mean	1.44
Standard Deviation	0.50
Variance	0.25

**Survey Question #3.5:**

Use the "Yes/No" drop-down menu to indicate whether any of the selected initiatives were reprioritized (i.e., a change in level of importance) since you started working on them: *Reforming Acquisition Processes*

No (1)	138	63.30%
Yes (2)	80	36.70%
Total	218	

Mean	1.37
Standard Deviation	0.48
Variance	0.23

**Survey Question #3.6:**

Use the "Yes/No" drop-down menu to indicate whether any of the selected initiatives were reprioritized (i.e., a change in level of importance) since you started working on them: *Establishing Army's Enterprise Business Governance*

No (1)	73	56.59%
Yes (2)	56	43.41%
Total	129	

Mean	1.43
Standard Deviation	0.50
Variance	0.25

**Survey Question #3.7:**

Use the "Yes/No" drop-down menu to indicate whether any of the selected initiatives were reprioritized (i.e., a change in level of importance) since you started working on them: *Achieving Financial Auditability*

No (1)	86	48.31%
Yes (2)	92	51.69%
Total	178	

Mean	1.52
Standard Deviation	0.50
Variance	0.25

**Survey Question #3.8:**

Use the "Yes/No" drop-down menu to indicate whether any of the selected initiatives were reprioritized (i.e., a change in level of importance) since you started working on them: *Supporting Knowledge-Sharing Initiatives*

No (1)	316	57.14%
Yes (2)	237	42.86%
Total	553	

Mean	1.43
Standard Deviation	0.50
Variance	0.25

**Survey Question #3.9:**

Use the "Yes/No" drop-down menu to indicate whether any of the selected initiatives were reprioritized (i.e., a change in level of importance) since you started working on them: *Promoting Resource-Informed Decision Making*

No (1)	298	57.31%
Yes (2)	222	42.69%
Total	520	

Mean	1.43
Standard Deviation	0.50
Variance	0.25

**Survey Question #3.10:**

Use the "Yes/No" drop-down menu to indicate whether any of the selected initiatives were reprioritized (i.e., a change in level of importance) since you started working on them: *Conducting Leader & Workforce Development*

No (1)	368	55.17%
Yes (2)	299	44.83%
Total	667	

Mean	1.45
Standard Deviation	0.50
Variance	0.25

**Survey Question #3.11:**

Use the "Yes/No" drop-down menu to indicate whether any of the selected initiatives were reprioritized (i.e., a change in level of importance) since you started working on them: *Other [combined summary]*

No (1)	26	34.21%
Yes (2)	50	65.79%
Total	76	

Mean	1.66
Standard Deviation	0.48
Variance	0.23

**Survey Question #4.1:**

Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them: *Establishing Army Campaign Plan*

No (1)	237	67.33%
Yes (2)	115	32.67%
Total	352	

Mean	1.33
Standard Deviation	0.47
Variance	0.22

**Survey Question #4.2:**

Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them: *Transforming the Institutional Army*

No (1)	444	66.47%
Yes (2)	224	33.53%
Total	668	

Mean	1.34
Standard Deviation	0.47
Variance	0.22

**Survey Question #4.3:**

Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them: *Improving Army Business Processes*

No (1)	216	64.29%
Yes (2)	120	35.71%
Total	336	

Mean	1.36
Standard Deviation	0.48
Variance	0.23

**Survey Question #4.4:**

Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them: *Institutionalizing the Use of Quality Metrics*

No (1)	209	64.71%
Yes (2)	114	35.29%
Total	323	

Mean	1.35
Standard Deviation	0.48
Variance	0.23

**Survey Question #4.5:**

Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them: *Reforming Acquisition Processes*

No (1)	147	67.43%
Yes (2)	71	32.57%
Total	218	

Mean	1.33
Standard Deviation	0.47
Variance	0.22

**Survey Question #4.6:**

Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them: *Establishing Army's Enterprise Business Governance*

No (1)	74	57.36%
Yes (2)	55	42.64%
Total	129	

Mean	1.43
Standard Deviation	0.50
Variance	0.25

**Survey Question #4.7:**

Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them: *Achieving Financial Auditability*

No (1)	138	77.53%
Yes (2)	40	22.47%
Total	178	

Mean	1.22
Standard Deviation	0.42
Variance	0.18

**Survey Question #4.8:**

Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them: *Supporting Knowledge-Sharing Initiatives*

No (1)	344	62.21%
Yes (2)	209	37.79%
Total	553	

Mean	1.38
Standard Deviation	0.49
Variance	0.24

**Survey Question #4.9:**

Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them: *Promoting Resource-Informed Decision Making*

No (1)	376	72.31%
Yes (2)	144	27.69%
Total	520	

Mean	1.28
Standard Deviation	0.45
Variance	0.20



**Survey Question #4.10:**

Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them: *Conducting Leader & Workforce Development*

No (1)	450	67.47%
Yes (2)	217	32.53%
Total	667	

Mean	1.33
Standard Deviation	0.47
Variance	0.22

**Survey Question #4.11:**

Indicate whether any of the selected initiatives were interrupted (i.e., temporarily suspended) since you started working on them: *Other [combined summary]*

No (1)	51	67.11%
Yes (2)	25	32.89%
Total	76	

Mean	1.33
Standard Deviation	0.47
Variance	0.22

**Survey Question #5.1:**

Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them: *Establishing Army Campaign Plan*

No (1)	346	98.30%
Yes (2)	6	1.70%
Total	352	

Mean	1.02
Standard Deviation	0.13
Variance	0.02

**Survey Question #5.2:**

Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them: *Transforming the Institutional Army*

No (1)	658	98.50%
Yes (2)	10	1.50%
Total	668	

Mean	1.01
Standard Deviation	0.12
Variance	0.01

**Survey Question #5.3:**

Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them: *Improving Army Business Processes*

No (1)	318	94.64%
Yes (2)	18	5.36%
Total	336	

Mean	1.05
Standard Deviation	0.23
Variance	0.05

**Survey Question #5.4:**

Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them: *Institutionalizing the Use of Quality*

*Metrics*

No (1)	311	96.58%
Yes (2)	11	3.42%
Total	322	

Mean	1.03
Standard Deviation	0.18
Variance	0.03

**Survey Question #5.5:**

Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them: *Reforming Acquisition Processes*

No (1)	211	96.79%
Yes (2)	7	3.21%
Total	218	

Mean	1.03
Standard Deviation	0.18
Variance	0.03

**Survey Question #5.6:**

Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them: *Establishing Army's Enterprise Business Governance*

No (1)	119	92.97%
Yes (2)	9	7.03%
Total	128	

Mean	1.07
Standard Deviation	0.26
Variance	0.07

**Survey Question #5.7:**

Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them: *Achieving Financial Auditability*

No (1)	171	96.61%
Yes (2)	6	3.39%
Total	177	

Mean	1.03
Standard Deviation	0.18
Variance	0.03

**Survey Question #5.8:**

Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them: *Supporting Knowledge-Sharing Initiatives*

No (1)	540	97.83%
Yes (2)	12	2.17%
Total	552	

Mean	1.02
Standard Deviation	0.15
Variance	0.02

**Survey Question #5.9:**

Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them: *Promoting Resource-Informed Decision Making*

No (1)	506	97.31%
Yes (2)	14	2.69%
Total	520	

Mean	1.03
Standard Deviation	0.16
Variance	0.03

**Survey Question #5.10:**

Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them: *Conducting Leader & Workforce*

*Development*

No (1)	654	98.05%
Yes (2)	13	1.95%
Total	667	

Mean	1.02
Standard Deviation	0.14
Variance	0.02

**Survey Question #5.11:**

Indicate whether any of the selected initiatives were discontinued (i.e., permanently stopped) since you started working on them: *Other [combined summary]*

No (1)	70	92.11%
Yes (2)	6	7.89%
Total	76	

Mean	1.08
Standard Deviation	0.27
Variance	0.07

**Survey Question #6:**

Select the number of Commanding Generals (CGs) under whom you have served/worked at TRADOC.

1 (1)	354	24.65%
2 (2)	251	17.48%
3 (3)	213	14.83%
4 (4)	192	13.37%
5 or more (5)	426	29.67%
Total	1436	

Mean	3.06
Standard Deviation	1.57
Variance	2.48

**Survey Question #7:**

A change of your CG results in a change in *commander's intent*.<sup>58</sup>

Strongly disagree (1)	47	3.27%
Moderately disagree (2)	61	4.25%
Slightly disagree (3)	39	2.72%
Neither agree nor disagree (4)	140	9.75%
Slightly agree (5)	326	22.70%
Moderately agree (6)	420	29.25%
Strongly agree (7)	343	23.89%
N/A (8)	60	4.18%
Total	1436	

Mean	5.38
Standard Deviation	1.52
Variance	2.32

<sup>58</sup> Per footnote #56, the raw data's descriptive statistics were automatically generated by *QuestionPro.com*. Based on the scoring for question #7, the requirement for recoding answer values is further evident. For example, the selected value of "N/A" (i.e., *I don't know the answer*) should *not* be scored with a value of '8'. Instead, as part of the data analysis in SPSS, an answer equal to "N/A" is recoded to '999' (in order to indicate a *missing value*).

Similarly, per Table 260, recoding of the 7-point Likert scale (*agreement stem*) is required for survey questions: [15, 16, 18, 19, 22, 26, 27, 28, and 29].

**Survey Question #8:**A change of your CG requires re-evaluation of your *unit's goals*.

Strongly disagree (1)	72	5.01%
Moderately disagree (2)	92	6.41%
Slightly disagree (3)	80	5.57%
Neither agree nor disagree (4)	151	10.52%
Slightly agree (5)	323	22.49%
Moderately agree (6)	377	26.25%
Strongly agree (7)	284	19.78%
N/A (8)	57	3.97%
Total	1436	

Mean	5.05
Standard Deviation	1.70
Variance	2.87

**Survey Question #9:**A change of your CG requires re-evaluation of your *unit's priorities*.

Strongly disagree (1)	67	4.67%
Moderately disagree (2)	75	5.22%
Slightly disagree (3)	59	4.11%
Neither agree nor disagree (4)	114	7.94%
Slightly agree (5)	303	21.10%
Moderately agree (6)	390	27.16%
Strongly agree (7)	371	25.84%
N/A (8)	57	3.97%
Total	1436	

Mean	5.30
Standard Deviation	1.67
Variance	2.79

**Survey Question #10:**

We are in an uncertain and unpredictable operational environment.

Strongly disagree (1)	30	2.09%
Moderately disagree (2)	48	3.34%
Slightly disagree (3)	43	2.99%
Neither agree nor disagree (4)	51	3.55%
Slightly agree (5)	184	12.81%
Moderately agree (6)	323	22.49%
Strongly agree (7)	745	51.88%
N/A (8)	12	0.84%
Total	1436	

Mean	5.99
Standard Deviation	1.46
Variance	2.13

**Survey Question #11:**The CG enforces frequent changes in the *regulations* we need to follow.

Strongly disagree (1)	129	8.98%
Moderately disagree (2)	157	10.93%
Slightly disagree (3)	117	8.15%
Neither agree nor disagree (4)	483	33.64%
Slightly agree (5)	212	14.76%
Moderately agree (6)	168	11.70%
Strongly agree (7)	97	6.75%
N/A (8)	73	5.08%
Total	1436	

Mean	4.02
Standard Deviation	1.64
Variance	2.69



**Survey Question #12:**The CG implements frequent changes in the *policies* we need to follow.

Strongly disagree (1)	114	7.94%
Moderately disagree (2)	157	10.93%
Slightly disagree (3)	124	8.64%
Neither agree nor disagree (4)	408	28.41%
Slightly agree (5)	288	20.06%
Moderately agree (6)	187	13.02%
Strongly agree (7)	102	7.10%
N/A (8)	56	3.90%
Total	1436	

Mean	4.14
Standard Deviation	1.64
Variance	2.69

**Survey Question #13:**We receive *fluctuating guidance* from the CG.

Strongly disagree (1)	250	17.41%
Moderately disagree (2)	267	18.59%
Slightly disagree (3)	143	9.96%
Neither agree nor disagree (4)	394	27.44%
Slightly agree (5)	158	11.00%
Moderately agree (6)	97	6.75%
Strongly agree (7)	73	5.08%
N/A (8)	54	3.76%
Total	1436	

Mean	3.38
Standard Deviation	1.73
Variance	2.99

**Survey Question #14:**

We tend not to share knowledge and/or information.

Strongly disagree (1)	206	14.35%
Moderately disagree (2)	231	16.09%
Slightly disagree (3)	189	13.16%
Neither agree nor disagree (4)	123	8.57%
Slightly agree (5)	275	19.15%
Moderately agree (6)	226	15.74%
Strongly agree (7)	172	11.98%
N/A (8)	14	0.97%
Total	1436	

Mean	3.98
Standard Deviation	2.00
Variance	4.01

**Survey Question #15:**Effective efforts are made by senior leadership to increase collaboration among TRADOC staff.<sup>59</sup>

Strongly disagree (1)	117	8.15%
Moderately disagree (2)	165	11.49%
Slightly disagree (3)	150	10.45%
Neither agree nor disagree (4)	268	18.66%
Slightly agree (5)	253	17.62%
Moderately agree (6)	281	19.57%
Strongly agree (7)	122	8.50%
N/A (8)	80	5.57%
Total	1436	

Mean	4.26
Standard Deviation	1.77
Variance	3.13

<sup>59</sup> During data analysis in SPSS, reverse scoring will be applied to this question. Refer to Section 3.10 and Appendix I for additional details.

**Survey Question #16:**We embrace collaboration with colleagues.<sup>59</sup>

Strongly disagree (1)	90	6.27%
Moderately disagree (2)	117	8.15%
Slightly disagree (3)	143	9.96%
Neither agree nor disagree (4)	162	11.28%
Slightly agree (5)	318	22.14%
Moderately agree (6)	362	25.21%
Strongly agree (7)	225	15.67%
N/A (8)	19	1.32%
Total	1436	

Mean	4.76
Standard Deviation	1.76
Variance	3.11

**Survey Question #17:**

As far as daily work is concerned, we prefer the status quo in the ways we work.

Strongly disagree (1)	114	7.94%
Moderately disagree (2)	198	13.79%
Slightly disagree (3)	227	15.81%
Neither agree nor disagree (4)	234	16.30%
Slightly agree (5)	287	19.99%
Moderately agree (6)	217	15.11%
Strongly agree (7)	143	9.96%
N/A (8)	16	1.11%
Total	1436	

Mean	4.13
Standard Deviation	1.77
Variance	3.15

**Survey Question #18:**

TRADOC senior leadership's proposed changes to the ways we perform our daily work will improve mission performance outcomes.<sup>59</sup>

Strongly disagree (1)	73	5.08%
Moderately disagree (2)	127	8.84%
Slightly disagree (3)	137	9.54%
Neither agree nor disagree (4)	526	36.63%
Slightly agree (5)	229	15.95%
Moderately agree (6)	172	11.98%
Strongly agree (7)	48	3.34%
N/A (8)	124	8.64%
Total	1436	

Mean	4.08
Standard Deviation	1.42
Variance	2.02

**Survey Question #19:**

We readily adopt mandated changes to the ways we do daily work.<sup>59</sup>

Strongly disagree (1)	90	6.27%
Moderately disagree (2)	131	9.12%
Slightly disagree (3)	221	15.39%
Neither agree nor disagree (4)	259	18.04%
Slightly agree (5)	319	22.21%
Moderately agree (6)	263	18.31%
Strongly agree (7)	118	8.22%
N/A (8)	35	2.44%
Total	1436	

Mean	4.32
Standard Deviation	1.66
Variance	2.75

**Survey Question #20:**

Changes in the commander's intent cause changes in the way we work.

Strongly disagree (1)	38	2.65%
Moderately disagree (2)	86	5.99%
Slightly disagree (3)	117	8.15%
Neither agree nor disagree (4)	231	16.09%
Slightly agree (5)	473	32.94%
Moderately agree (6)	300	20.89%
Strongly agree (7)	157	10.93%
N/A (8)	34	2.37%
Total	1436	

Mean	4.81
Standard Deviation	1.45
Variance	2.11

**Survey Question #21:**Changes in the organization are *unwelcome*.

Strongly disagree (1)	149	10.38%
Moderately disagree (2)	258	17.97%
Slightly disagree (3)	244	16.99%
Neither agree nor disagree (4)	274	19.08%
Slightly agree (5)	251	17.48%
Moderately agree (6)	125	8.70%
Strongly agree (7)	122	8.50%
N/A (8)	13	0.91%
Total	1436	

Mean	3.76
Standard Deviation	1.76
Variance	3.08

**Survey Question #22:**Changes in the organization are *unnecessary*.<sup>59</sup>

Strongly disagree (1)	376	26.18%
Moderately disagree (2)	313	21.80%
Slightly disagree (3)	292	20.33%
Neither agree nor disagree (4)	225	15.67%
Slightly agree (5)	118	8.22%
Moderately agree (6)	62	4.32%
Strongly agree (7)	36	2.51%
N/A (8)	14	0.97%
Total	1436	

Mean	2.81
Standard Deviation	1.59
Variance	2.53

**Survey Question #23:**Process efficiencies which have been implemented resulted in *loss of manpower*.

Strongly disagree (1)	53	3.69%
Moderately disagree (2)	80	5.57%
Slightly disagree (3)	140	9.75%
Neither agree nor disagree (4)	367	25.56%
Slightly agree (5)	284	19.78%
Moderately agree (6)	199	13.86%
Strongly agree (7)	175	12.19%
N/A (8)	138	9.61%
Total	1436	

Mean	4.58
Standard Deviation	1.56
Variance	2.44

**Survey Question #24:**Process efficiencies which have been implemented resulted in *loss of funding*.

Strongly disagree (1)	37	2.58%
Moderately disagree (2)	70	4.87%
Slightly disagree (3)	110	7.66%
Neither agree nor disagree (4)	414	28.83%
Slightly agree (5)	287	19.99%
Moderately agree (6)	202	14.07%
Strongly agree (7)	159	11.07%
N/A (8)	157	10.93%
Total	1436	

Mean	4.63
Standard Deviation	1.46
Variance	2.14

**Survey Question #25:**

Process efficiencies which have been implemented result in an unwillingness to adopt future process improvement efforts.

Strongly disagree (1)	61	4.25%
Moderately disagree (2)	116	8.08%
Slightly disagree (3)	154	10.72%
Neither agree nor disagree (4)	471	32.80%
Slightly agree (5)	267	18.59%
Moderately agree (6)	136	9.47%
Strongly agree (7)	94	6.55%
N/A (8)	137	9.54%
Total	1436	

Mean	4.19
Standard Deviation	1.46
Variance	2.14

**Survey Question #26:**

Efforts are made by TRADOC's senior leadership to encourage *open feedback* throughout the chain of command.<sup>59</sup>

Strongly disagree (1)	134	9.33%
Moderately disagree (2)	129	8.98%
Slightly disagree (3)	141	9.82%
Neither agree nor disagree (4)	269	18.73%
Slightly agree (5)	289	20.13%
Moderately agree (6)	258	17.97%
Strongly agree (7)	141	9.82%
N/A (8)	75	5.22%
Total	1436	

Mean	4.31
Standard Deviation	1.78
Variance	3.18

**Survey Question #27:**

Feedback/disagreement to proposed changes is *conveyed* to TRADOC's senior leadership.<sup>59</sup>

Strongly disagree (1)	177	12.33%
Moderately disagree (2)	168	11.70%
Slightly disagree (3)	171	11.91%
Neither agree nor disagree (4)	413	28.76%
Slightly agree (5)	182	12.67%
Moderately agree (6)	135	9.40%
Strongly agree (7)	33	2.30%
N/A (8)	157	10.93%
Total	1436	

Mean	3.62
Standard Deviation	1.60
Variance	2.56



**Survey Question #28:**

Feedback/disagreement to proposed changes is *considered* by TRADOC's senior leadership.<sup>59</sup>

Strongly disagree (1)	128	8.91%
Moderately disagree (2)	104	7.24%
Slightly disagree (3)	118	8.22%
Neither agree nor disagree (4)	538	37.47%
Slightly agree (5)	177	12.33%
Moderately agree (6)	148	10.31%
Strongly agree (7)	39	2.72%
N/A (8)	184	12.81%
Total	1436	

Mean	3.90
Standard Deviation	1.49
Variance	2.23

**Survey Question #29:**

TRADOC is involved in implementing business transformation initiatives.<sup>59</sup>

Strongly disagree (1)	40	2.79%
Moderately disagree (2)	49	3.41%
Slightly disagree (3)	63	4.39%
Neither agree nor disagree (4)	380	26.46%
Slightly agree (5)	314	21.87%
Moderately agree (6)	307	21.38%
Strongly agree (7)	140	9.75%
N/A (8)	143	9.96%
Total	1436	

Mean	4.83
Standard Deviation	1.40
Variance	1.97

**Survey Question #30:**

If applicable, what could TRADOC do differently to improve the implementation of business transformation initiatives?<sup>60</sup>

[Comment not applicable to BTI]	63	13.02%
BTI process leadership	17	3.51%
Bureaucratic complexity and paralysis	32	6.61%
Communications/knowledge-sharing	90	18.60%
Cross-organization coordination and collaboration	25	5.17%
Effective/efficient operations	73	15.08%
Fact-based decision-making	7	1.45%
Fiscal responsibility	6	1.24%
Lack of staff willingness to address perceived problems	4	0.83%
Leadership out of touch	4	0.83%
Leadership support	5	1.03%
Leadership turbulence	2	0.41%
Metrics	4	0.83%
Need for analysis/planning	25	5.17%
Regulatory and budgetary constraints/influences	17	3.51%
Resistance to change	14	2.89%
Reward system for BTI requires changes	3	0.62%
Staff consulted in BTI implementation decisions	53	10.95%
Understanding of the organization/environment/goals	33	6.82%
Unpredictable instability	2	0.41%
Workforce education	5	1.03%
Total	484	

<sup>60</sup> All survey comments were evaluated by the researcher. They were then aggregated into the twenty-three categories shown above. The actual survey comments will be provided to TRADOC for internal review purposes. Refer to Appendix M for additional information (i.e., summary/operational definitions for the categories listed in the matrix above).

**Survey Question #31:**

While on active duty, what is/was your military branch? Select "N/A" if you have not served on active duty.

Air Force (1)	39	2.72%
Army (2)	1239	86.28%
Marines (3)	13	0.91%
Navy (4)	17	1.18%
N/A (5)	127	8.84%
Other (please specify) (6)	1	0.07%
Total	1436	

Mean	2.27
Standard Deviation	0.90
Variance	0.82

**Survey Question #32:**

Select your current military rank or civilian grade.

O4 (1)	203	14.14%
O5 (2)	264	18.38%
O6 (3)	95	6.62%
GS-13 (4)	565	39.35%
GS-14 (5)	209	14.55%
GS-15 (6)	74	5.15%
Other (please specify) (7)	26	1.81%
Total	1436	

Mean	3.44
Standard Deviation	1.51
Variance	2.28

**Survey Question #32 (Other option)**

Rank/Grade	Freq. Count
GS-12 <sup>61</sup>	2
Contractor <sup>61</sup>	1
O3(P)	18
SES <sup>61</sup>	1
Unidentified <sup>61</sup>	4
Total	26

<sup>61</sup> In support of Sub-Section 3.5.4, delimitation #4, the following staff member categories (equal to 8 surveys) were excluded from the research analysis: GS-12, Contractor, SES, and *Unidentified*.

**Survey Question #33:**

While on active duty, how many years have you served in the military? Select "N/A" if you have not served on active duty.

1 to 5 (1)	47	3.27%
6 to 10 (2)	74	5.15%
11 to 15 (3)	152	10.58%
16 to 20 (4)	234	16.30%
More than 20 (5)	796	55.43%
N/A (6)	133	9.26%
Total	1436	

Mean	4.43
Standard Deviation	1.16
Variance	1.35

**Survey Question #34:**

Select your current organization.

TRADOC Headquarters (1)	184	12.81%
Asymmetric Warfare Group (2)	13	0.91%
Army Capabilities Integration Center (3)	115	8.01%
Cadet Command (4)	79	5.50%
Combined Arms Center (5)	264	18.38%
Combined Arms Support Command (6)	73	5.08%
Initial Military Training (7)	25	1.74%
Recruiting Command (8)	51	3.55%
Aviation CoE (9)	76	5.29%
Fires CoE (10)	66	4.60%
Initial Military Training CoE (11)	12	0.84%
Intelligence CoE (12)	60	4.18%
Maneuver CoE (13)	78	5.43%
Maneuver Support CoE (14)	66	4.60%
Mission Command CoE (15)	56	3.90%
Signal CoE (16)	33	2.30%
Sustainment CoE (17)	55	3.83%
Other (please specify) (18)	130	9.05%
Total	1436	

Mean	8.36
Standard Deviation	5.55
Variance	30.84

<b>Survey Question #34 (Other options)</b>	
<b>Current Organization</b>	<b>Freq. Count</b>
Army Management Staff College (AMSC)	3
Army Training Support Center (ATSC)	5
Brigade Modernization Command (BMC)	5
Defense Language Institute Foreign Language Center (DLIFLC)	6
Deployed	2
Joint Center of Excellence (JCoE)	1
Joint Staff (J7)	1
Soldier Support Institute (SSI)	1
Staff Judge Advocate (SJA)	1
TRADOC Analysis Center (TRAC)	49
TRADOC Capability Management (TCM)	1
TRADOC Intelligence Support Activity (TRISA)	3
TRADOC Mission Command Training Program (TMCTP)	2
Training Operations Management Activity (TOMA)	2
Unidentified	5
US Army Aeronautical Services Agency (USAASA)	3
US Army Chaplain Center and School (USACHCS)	6
US Army Forces Command (FORSCOM)	3
US Army Human Terrain System (HTS)	1
US Army Peacekeeping & Stability Operations Institute (USPKSOI)	1
US Army Reserve Officers' Training Corps (ROTC)	2
US Army Student Detachment (USASD)	1
US Army War College (USAWC)	25
US Central Command (CENTCOM)	1
<b>Total</b>	<b>130</b>

**Survey Question #35:**

What G-staff function(s) have you supported at TRADOC? Check all that apply.

G-1 Personnel and Administration (1)	342	9.58%
G-2 Intelligence and Security (2)	298	8.35%
G-3 Operations (3)	844	23.65%
G-4 Logistics (4)	288	8.07%
G-5 Plans (5)	341	9.55%
G-6 Signal (6)	161	4.51%
G-7 Training (7)	638	17.88%
G-8 Finance and Contracts (8)	309	8.66%
G-9 Civil Affairs (9)	47	1.32%
Other (please specify) (10)	301	8.43%
Total	3569	

Mean	4.95
Standard Deviation	2.68
Variance	7.17

**Survey Question #36.1:**

Based on your selection in the previous question, select the number of years that you have served/worked in each function: *G-1 Personnel and Administration*

1 to 5 (1)	178	52.05%
6 to 10 (2)	40	11.70%
11 to 15 (3)	22	6.43%
16 to 20 (4)	5	1.46%
More than 20 (5)	21	6.14%
N/A (6)	76	22.22%
Total	342	

Mean	2.65
Standard Deviation	2.08
Variance	4.35

**Survey Question #36.2:**

Based on your selection in the previous question, select the number of years that you have served/worked in each function: *G-2 Intelligence and Security*

1 to 5 (1)	126	42.28%
6 to 10 (2)	46	15.44%
11 to 15 (3)	19	6.38%
16 to 20 (4)	14	4.70%
More than 20 (5)	33	11.07%
N/A (6)	60	20.13%
Total	298	

Mean	2.87
Standard Deviation	2.04
Variance	4.15

**Survey Question #36.3:**

Based on your selection in the previous question, select the number of years that you have served/worked in each function: *G-3 Operations*

1 to 5 (1)	417	49.41%
6 to 10 (2)	136	16.11%
11 to 15 (3)	63	7.46%
16 to 20 (4)	34	4.03%
More than 20 (5)	55	6.52%
N/A (6)	139	16.47%
Total	844	

Mean	2.52
Standard Deviation	1.92
Variance	3.69

**Survey Question #36.4:**

Based on your selection in the previous question, select the number of years that you have served/worked in each function: *G-4 Logistics*

1 to 5 (1)	126	43.75%
6 to 10 (2)	36	12.50%
11 to 15 (3)	16	5.56%
16 to 20 (4)	23	7.99%
More than 20 (5)	24	8.33%
N/A (6)	63	21.88%
Total	288	

Mean	2.90
Standard Deviation	2.06
Variance	4.26

**Survey Question #36.5:**

Based on your selection in the previous question, select the number of years that you have served/worked in each function: *G-5 Plans*

1 to 5 (1)	172	50.44%
6 to 10 (2)	50	14.66%
11 to 15 (3)	29	8.50%
16 to 20 (4)	9	2.64%
More than 20 (5)	20	5.87%
N/A (6)	61	17.89%
Total	341	

Mean	2.52
Standard Deviation	1.95
Variance	3.82



**Survey Question #36.6:**

Based on your selection in the previous question, select the number of years that you have served/worked in each function: *G-6 Signal*

1 to 5 (1)	64	39.75%
6 to 10 (2)	18	11.18%
11 to 15 (3)	16	9.94%
16 to 20 (4)	10	6.21%
More than 20 (5)	12	7.45%
N/A (6)	41	25.47%
Total	161	

Mean	3.07
Standard Deviation	2.09
Variance	4.38

**Survey Question #36.7:**

Based on your selection in the previous question, select the number of years that you have served/worked in each function: *G-7 Training*

1 to 5 (1)	266	41.69%
6 to 10 (2)	102	15.99%
11 to 15 (3)	77	12.07%
16 to 20 (4)	36	5.64%
More than 20 (5)	64	10.03%
N/A (6)	93	14.58%
Total	638	

Mean	2.70
Standard Deviation	1.87
Variance	3.51

**Survey Question #36.8:**

Based on your selection in the previous question, select the number of years that you have served/worked in each function: *G-8 Finance and Contracts*

1 to 5 (1)	134	43.37%
6 to 10 (2)	48	15.53%
11 to 15 (3)	29	9.39%
16 to 20 (4)	14	4.53%
More than 20 (5)	25	8.09%
N/A (6)	59	19.09%
Total	309	

Mean	2.76
Standard Deviation	1.98
Variance	3.93

**Survey Question #36.9:**

Based on your selection in the previous question, select the number of years that you have served/worked in each function: *G-9 Civil Affairs*

1 to 5 (1)	25	53.19%
6 to 10 (2)	3	6.38%
11 to 15 (3)	2	4.26%
16 to 20 (4)	0	0.00%
More than 20 (5)	2	4.26%
N/A (6)	15	31.91%
Total	47	

Mean	2.91
Standard Deviation	2.31
Variance	5.34

**Survey Question #36.10:**

Based on your selection in the previous question, select the number of years that you have served/worked in each function: *Other [combined summary]*

1 to 5 (1)	126	41.86%
6 to 10 (2)	45	14.95%
11 to 15 (3)	36	11.96%
16 to 20 (4)	7	2.33%
More than 20 (5)	17	5.65%
N/A (6)	70	23.26%
Total	301	

Mean	2.85
Standard Deviation	2.04
Variance	4.16

**Survey Question #37:**

What is the highest level of education you have completed?

High School (1)	4	0.28%
Some college credit (no degree) (2)	50	3.48%
Associate's Degree (3)	42	2.92%
Bachelor's Degree (4)	167	11.63%
Some graduate work (5)	178	12.40%
Master's Degree (6)	813	56.62%
Some post-graduate work (7)	112	7.80%
Doctoral Degree (8)	65	4.53%
Other (please specify) (9)	5	0.35%
Total	1436	

Mean	5.58
Standard Deviation	1.26
Variance	1.60

**Survey Question #37 (Other options)**

Highest Level of Education	Freq. Count
Autodidact	1
EdS	1
JD	2
Professional	1
Total	5

## APPENDIX K: SURVEY DATA (NORMALITY PLOTS)

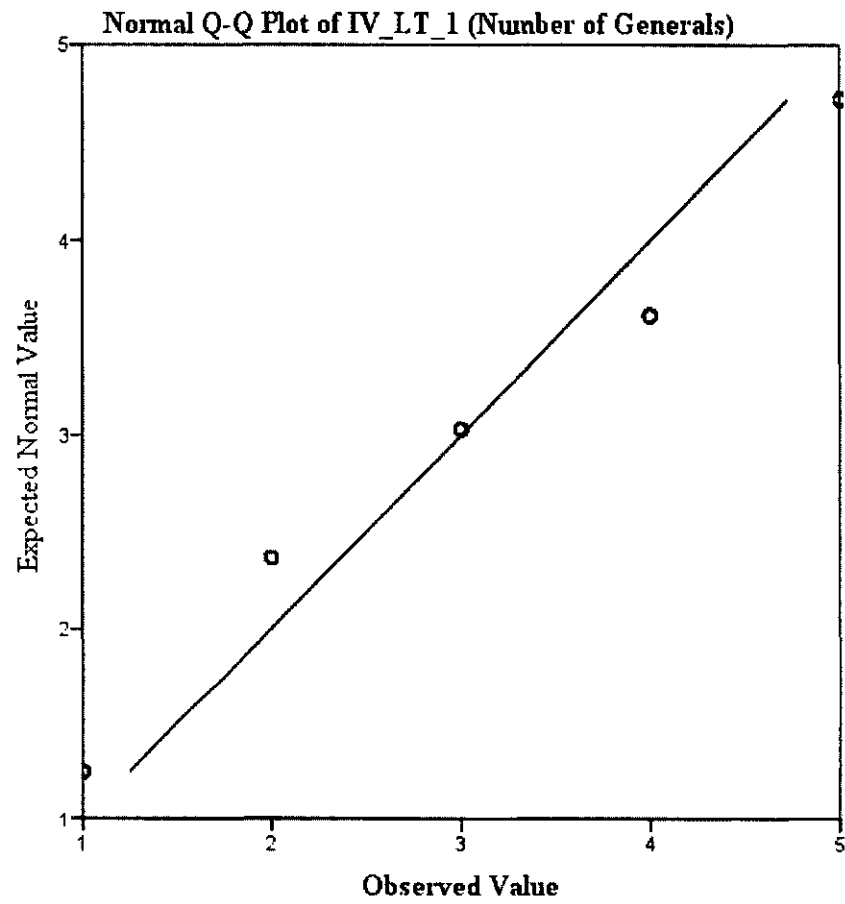


Figure 21. Normality Plot – IV\_LT\_1 (Number of Generals)

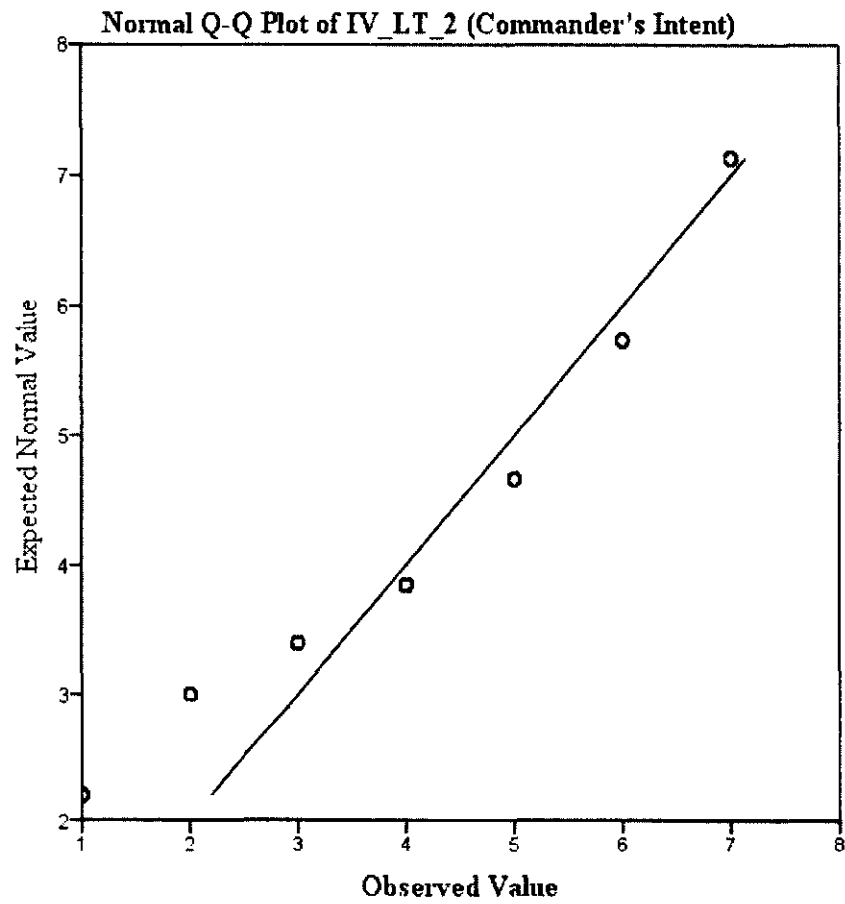


Figure 22. Normality Plot – IV\_LT\_2 (Commander's Intent)

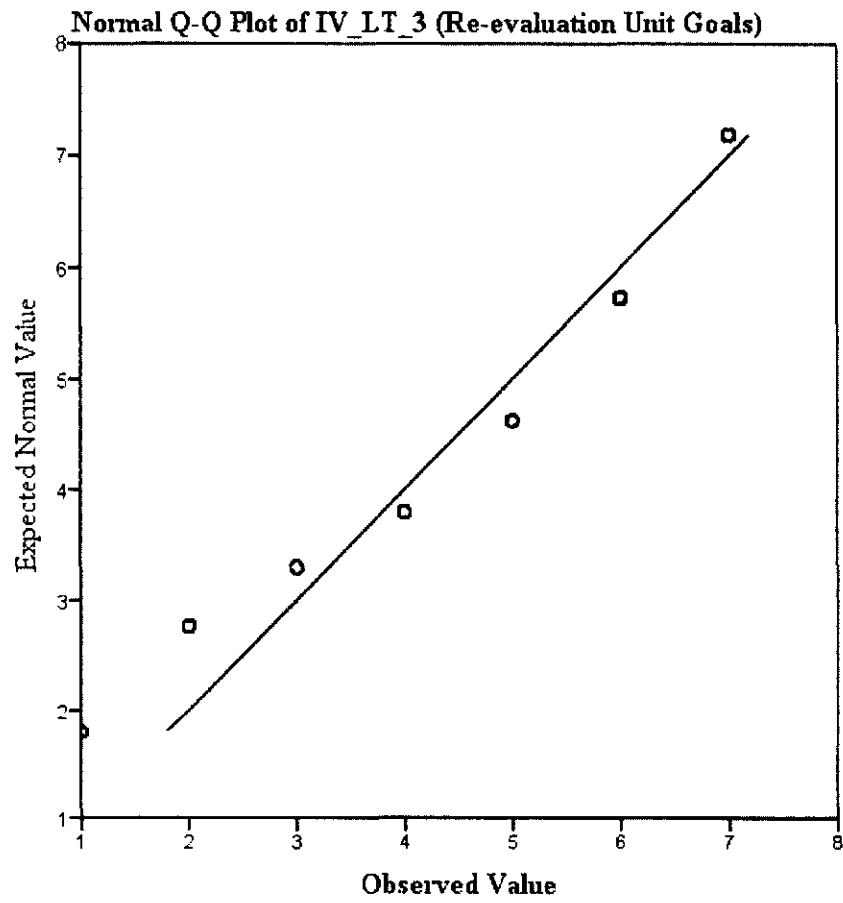


Figure 23. Normality Plot – IV\_LT\_3 (Re-evaluation Unit Goals)

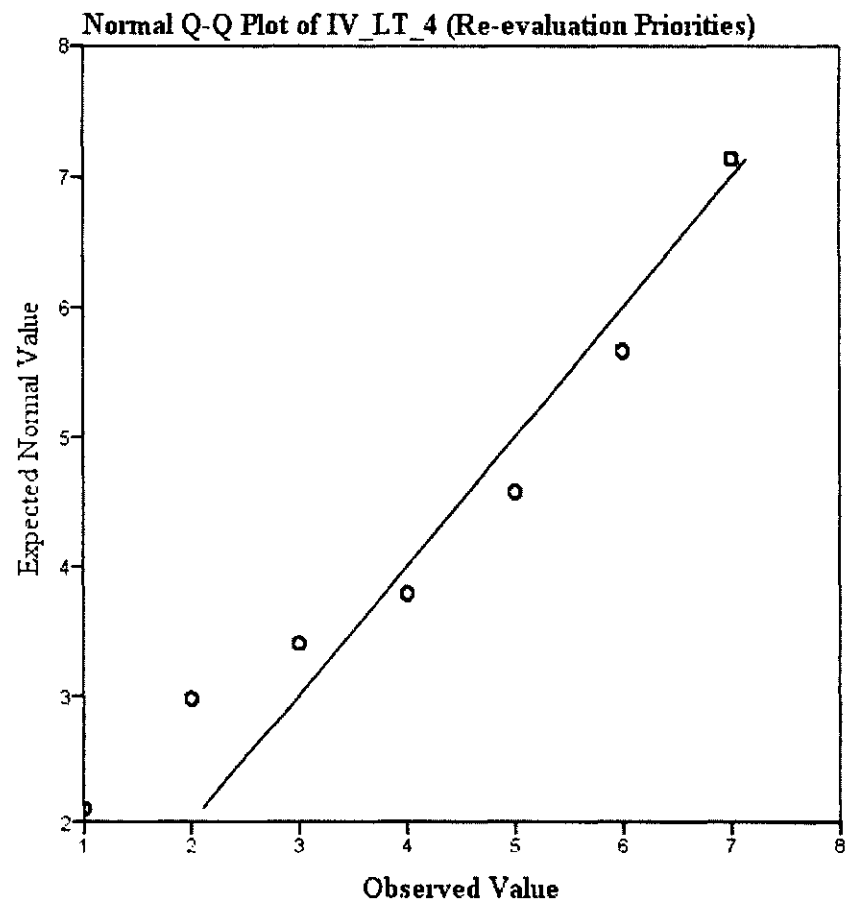


Figure 24. Normality Plot – IV\_LT\_4 (Re-evaluation Priorities)

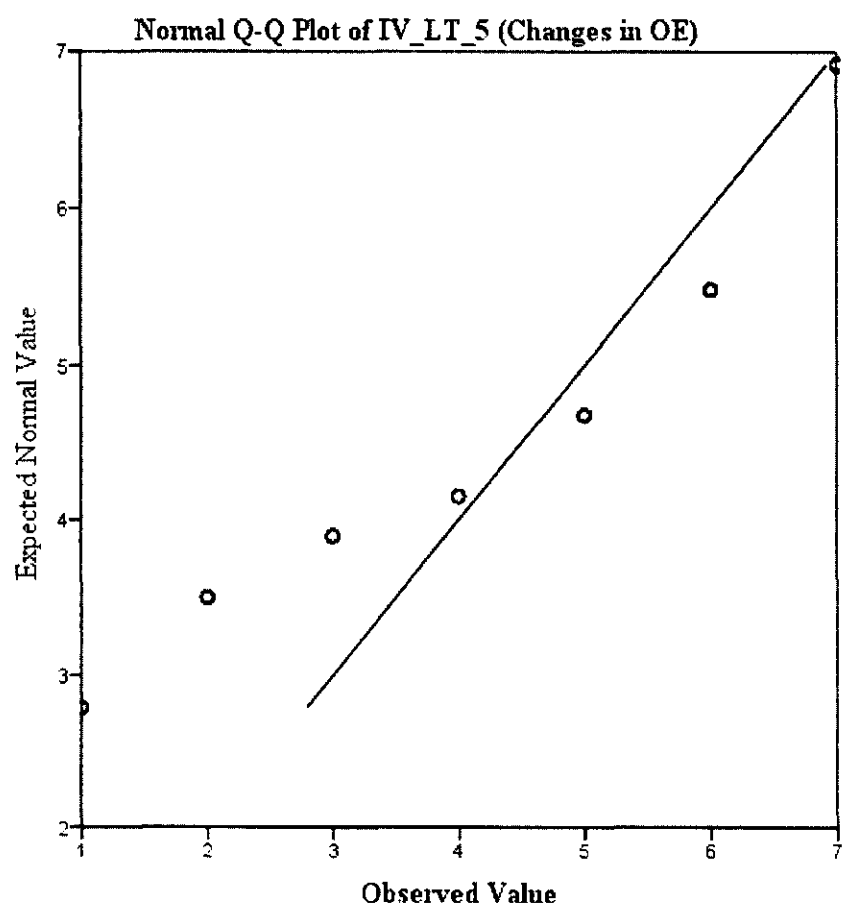


Figure 25. Normality Plot - IV\_LT\_5 (Changes in OE)



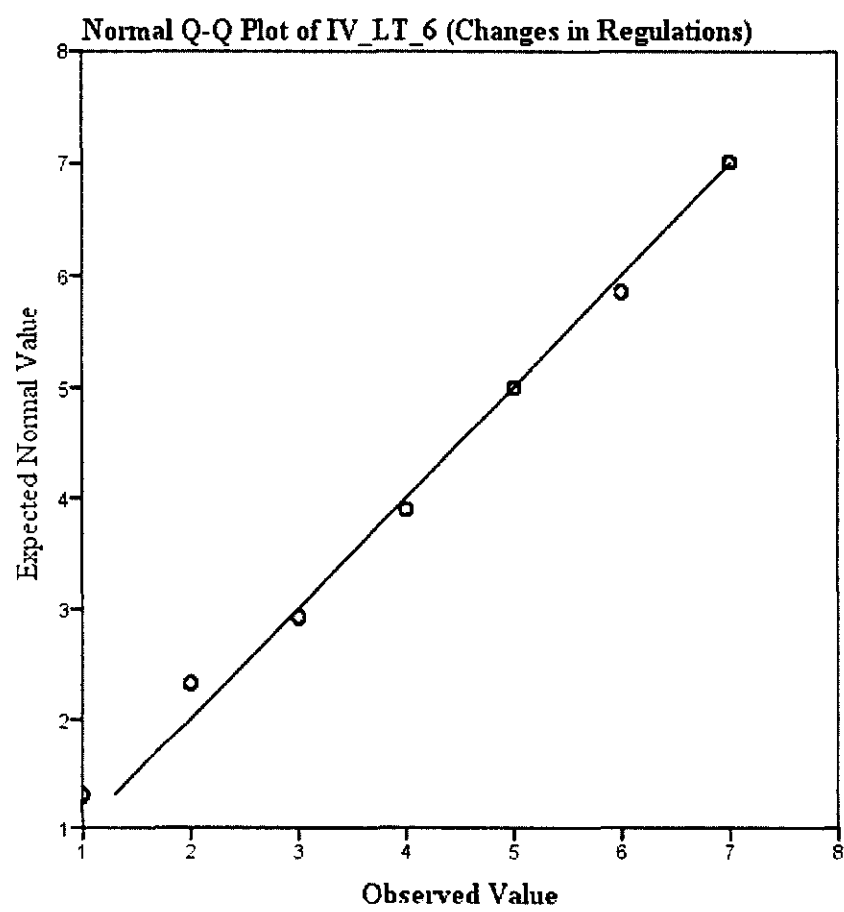


Figure 26. Normality Plot – IV\_LT\_6 (Changes in Regulations)

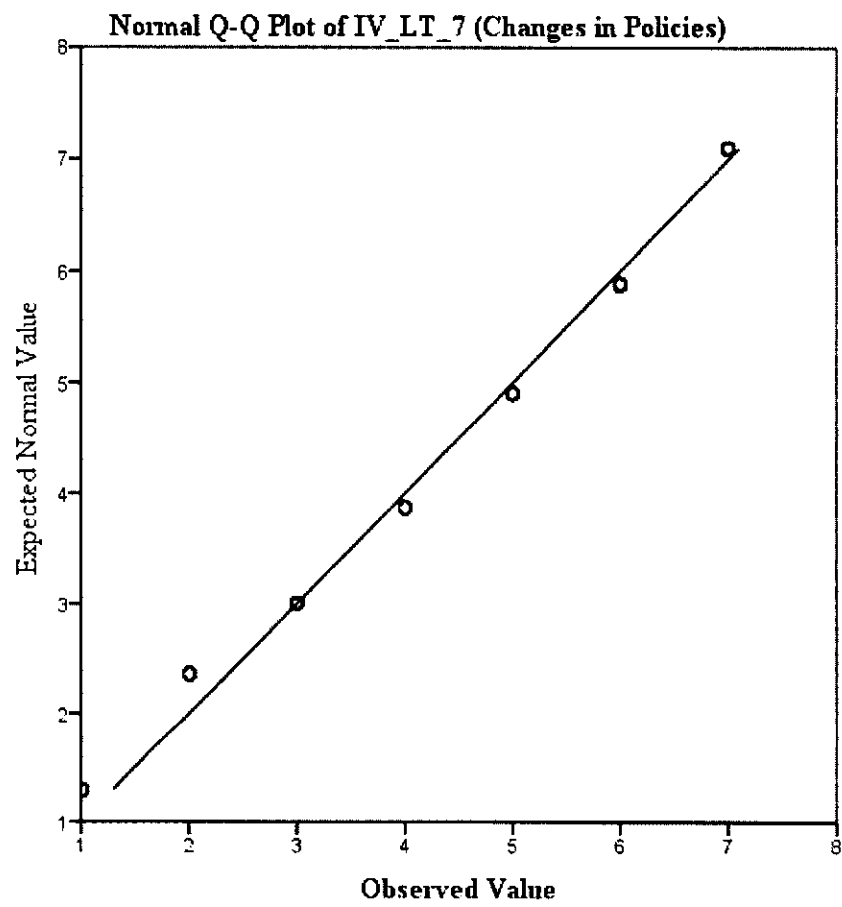


Figure 27. Normality Plot – IV\_LT\_7 (Changes in Policies)

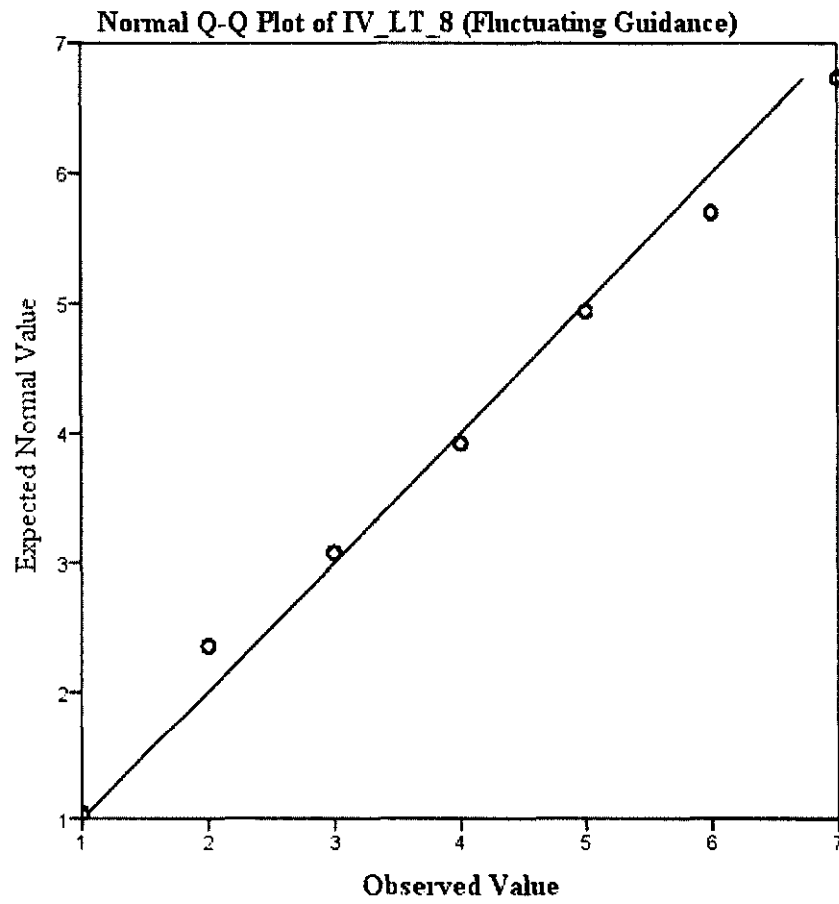


Figure 28. Normality Plot – IV\_LT\_8 (Fluctuating Guidance)

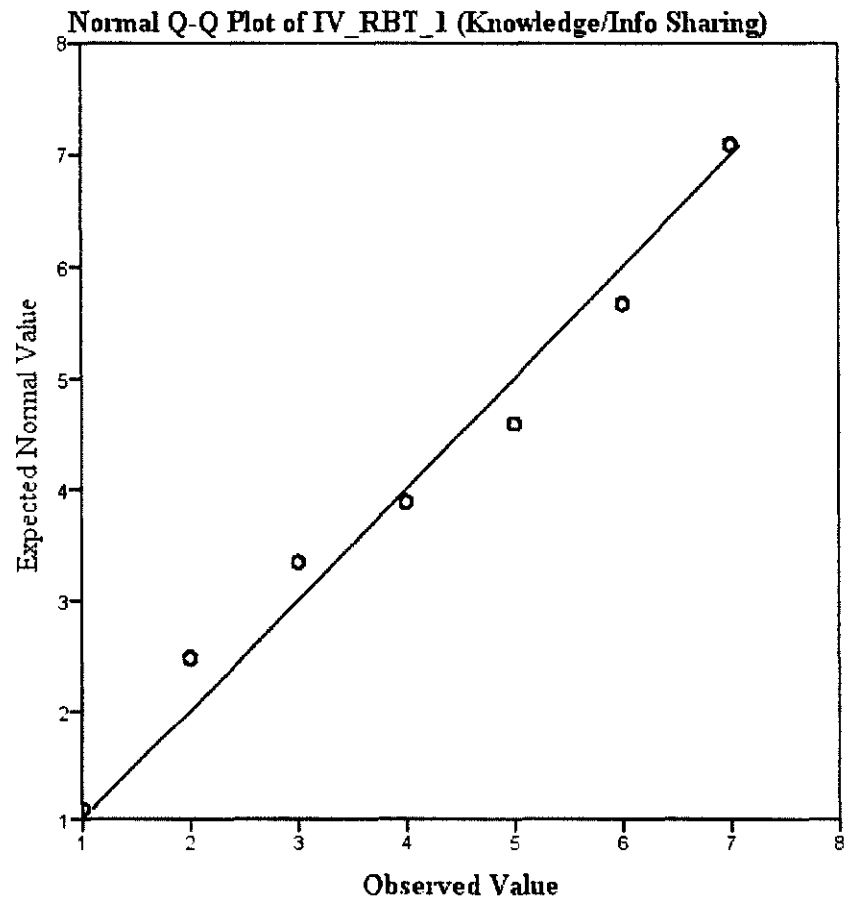


Figure 29. Normality Plot – IV\_RBT\_1 (Knowledge/Info Sharing)

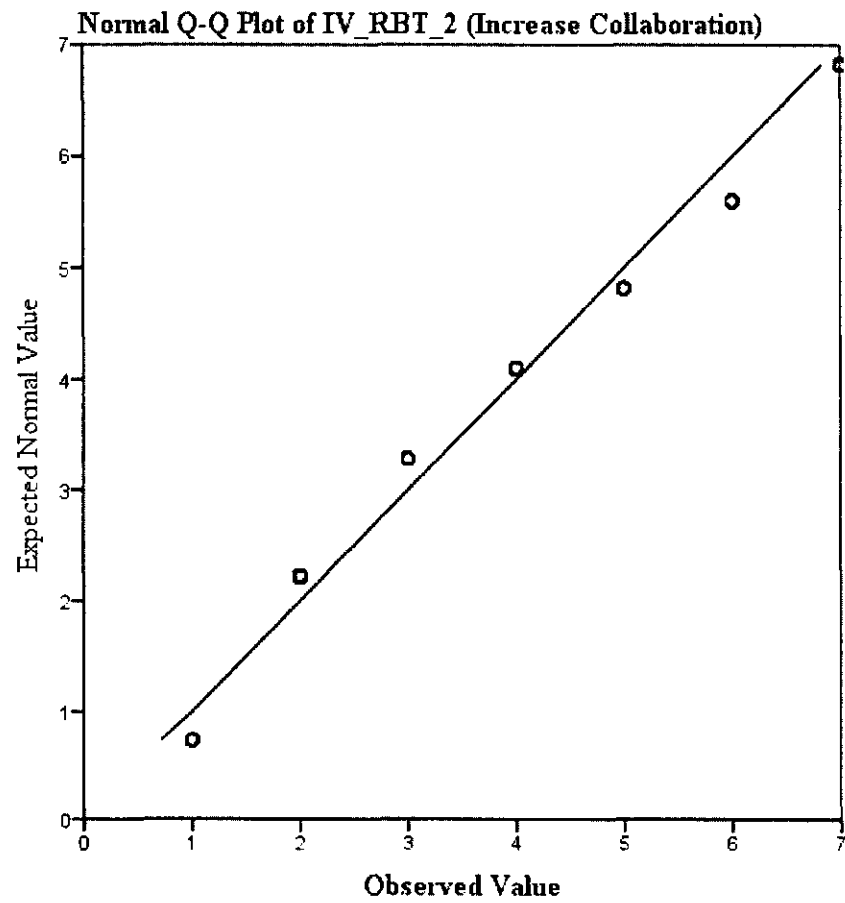
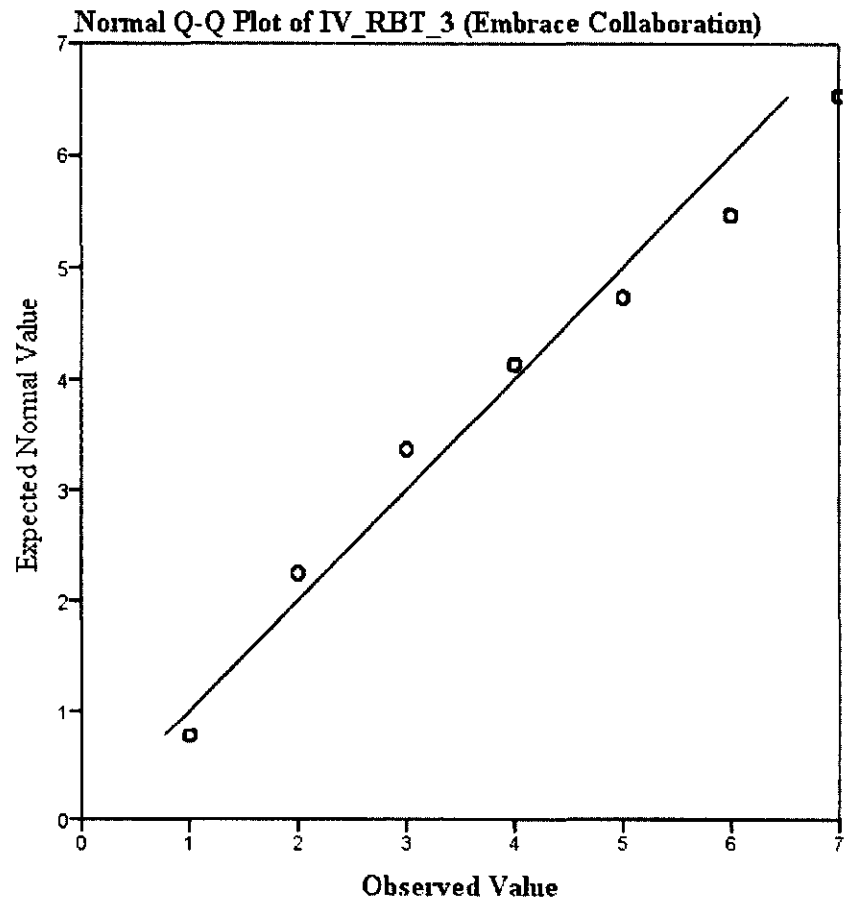


Figure 30. Normality Plot – IV\_RBT\_2 (Increase Collaboration)



**Figure 31.** Normality Plot – IV\_RBT\_3 (Embrace Collaboration)

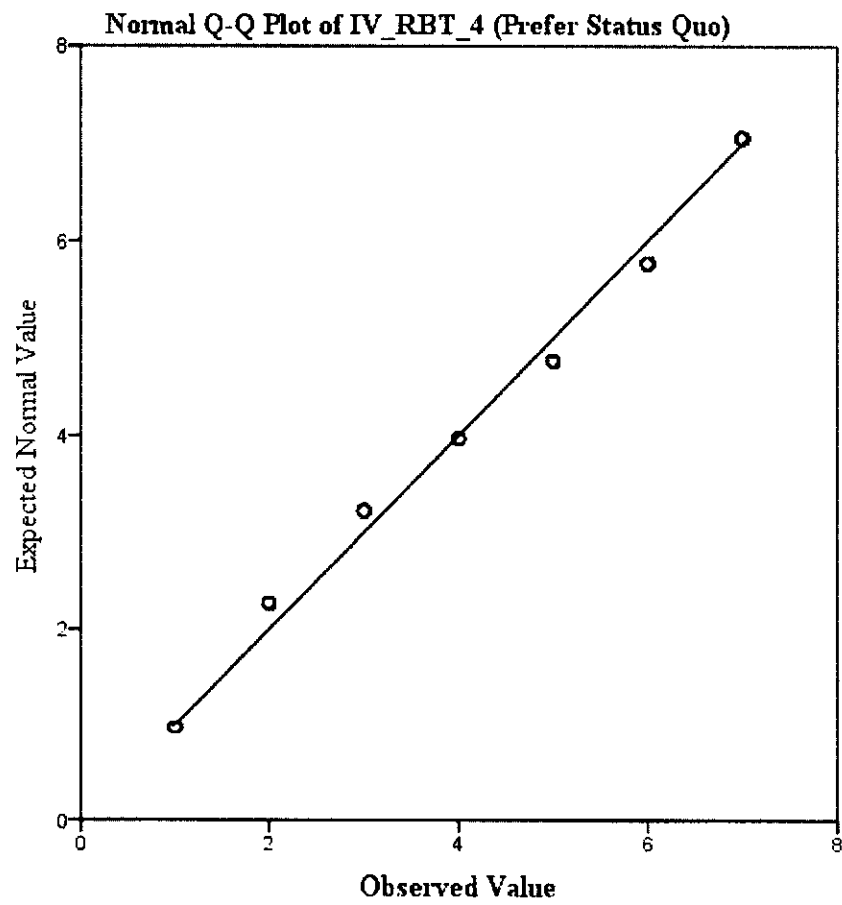


Figure 32. Normality Plot – IV\_RBT\_4 (Prefer Status Quo)

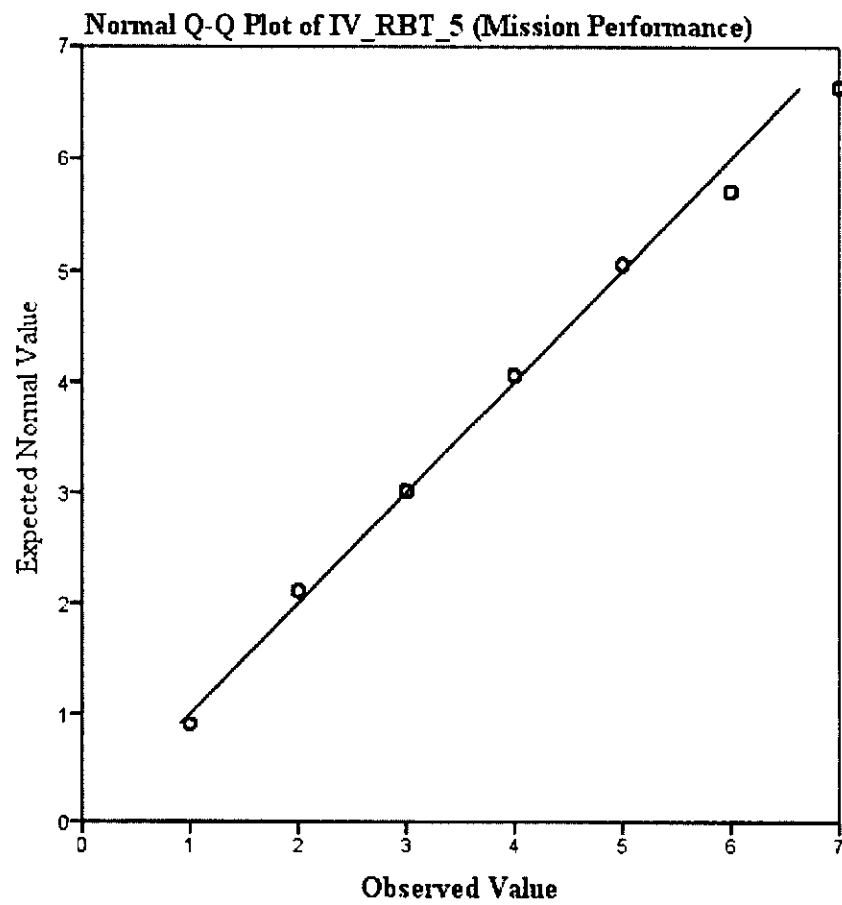


Figure 33. Normality Plot – IV\_RBT\_5 (Mission Performance)



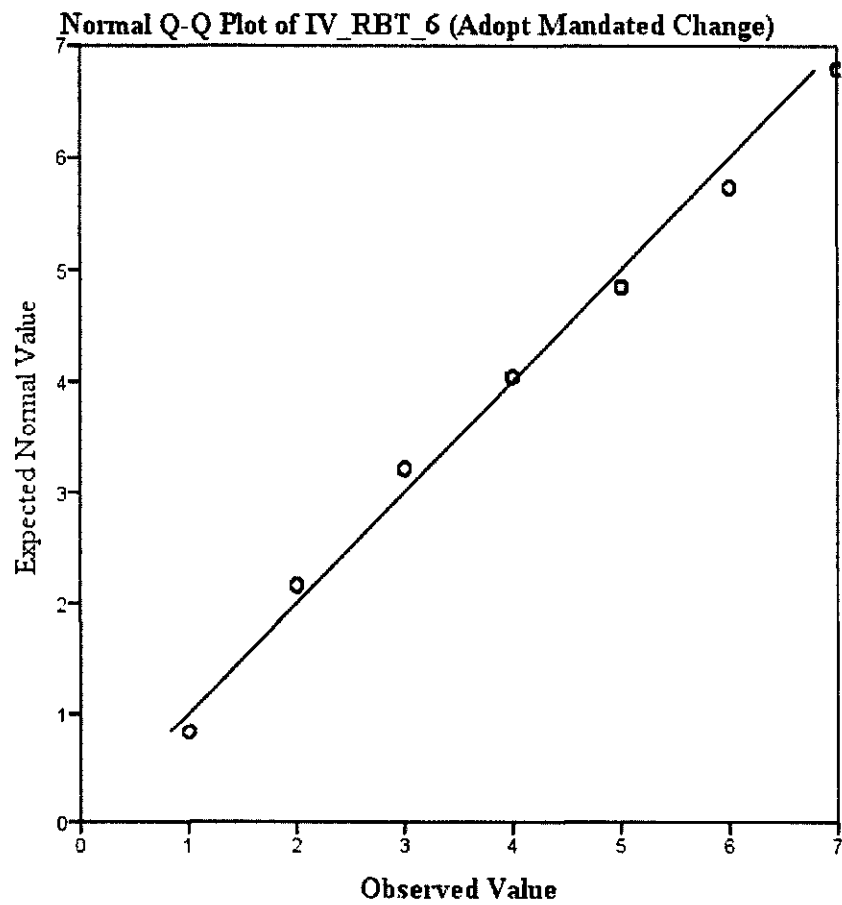


Figure 34. Normality Plot – IV\_RBT\_6 (Adopt Mandated Change)

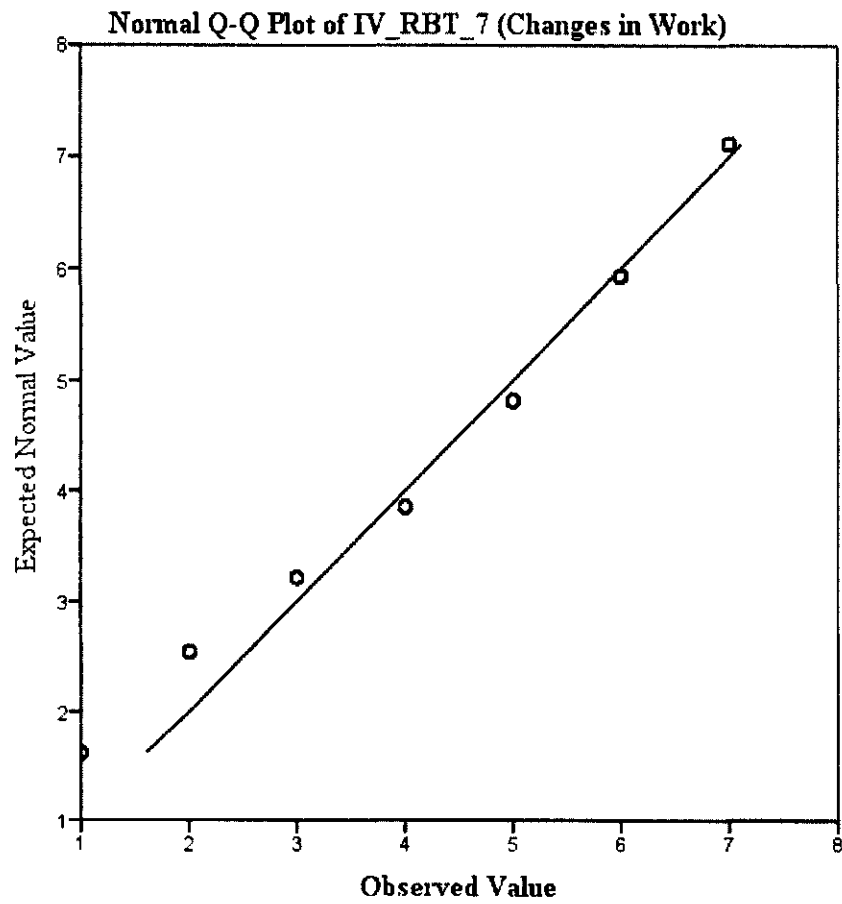


Figure 35. Normality Plot – IV\_RBT\_7 (Changes in Work)

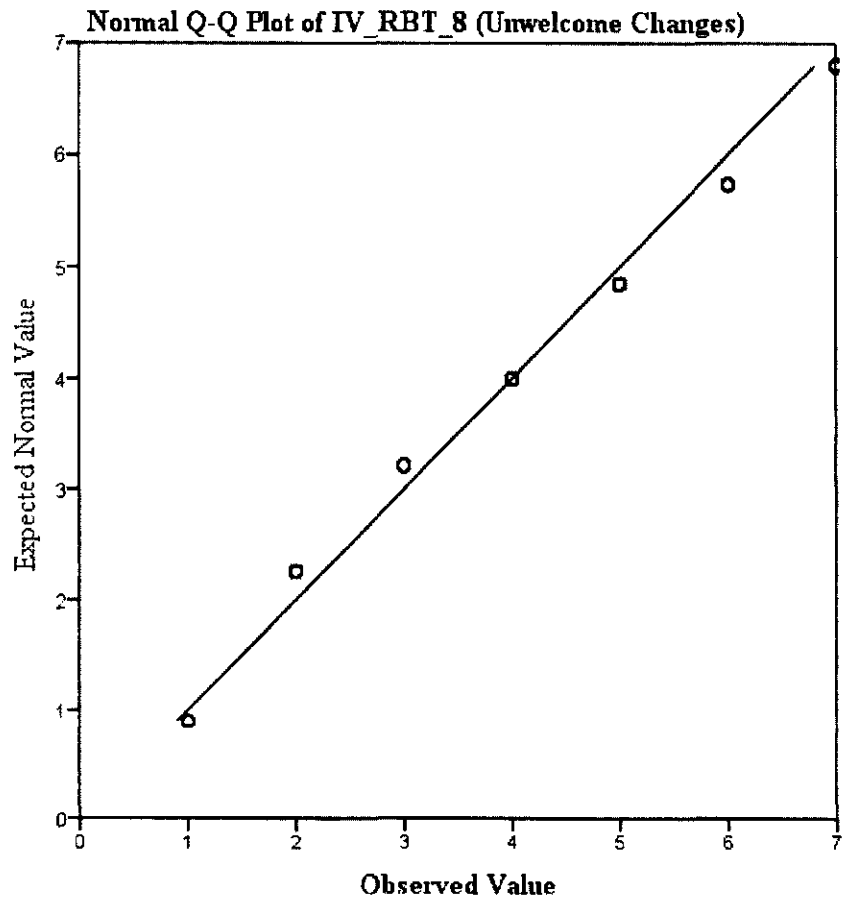


Figure 36. Normality Plot – IV\_RBT\_8 (Unwelcome Changes)

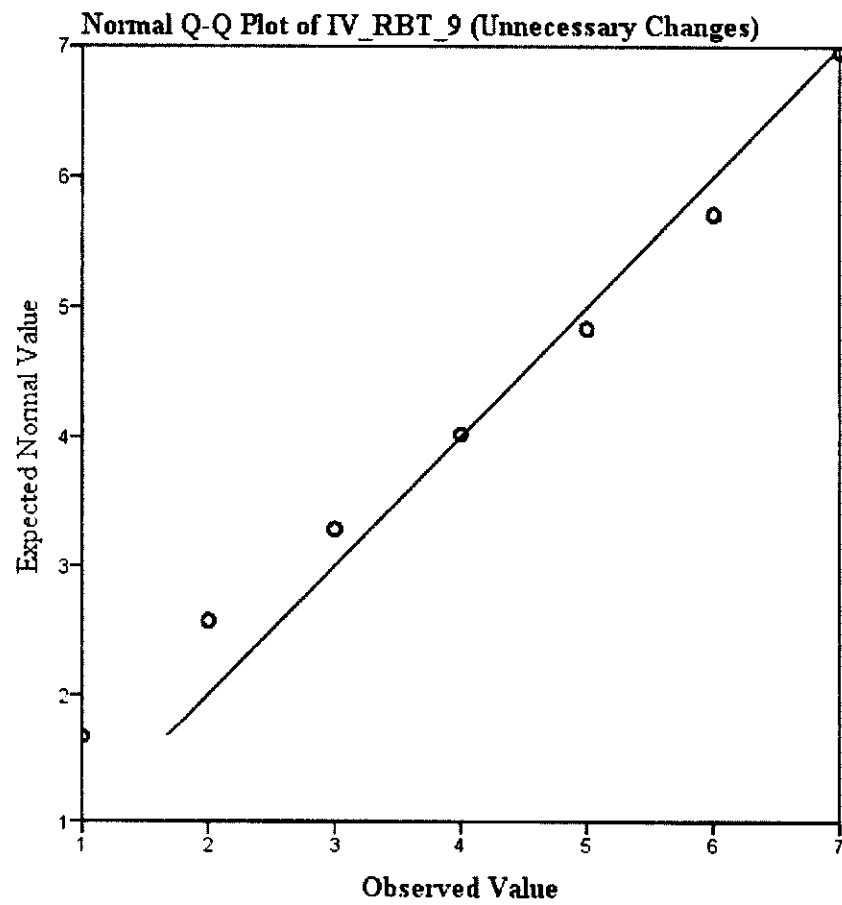


Figure 37. Normality Plot – IV\_RBT\_9 (Unnecessary Changes)

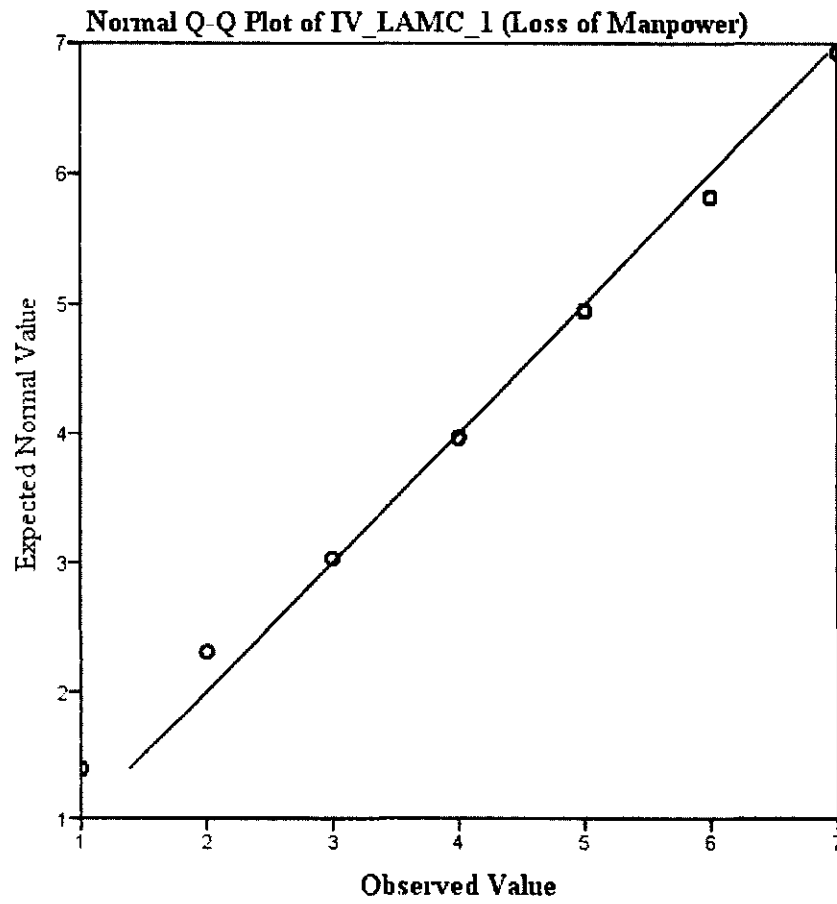


Figure 38. Normality Plot – IV\_LAMC\_1 (Loss of Manpower)

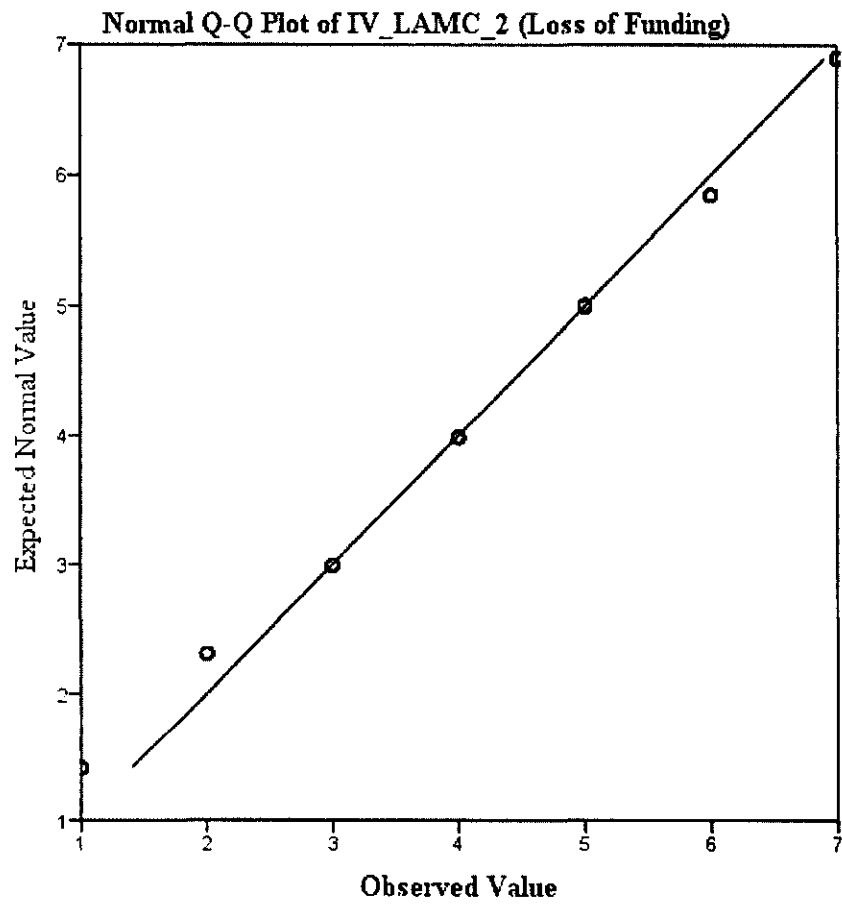


Figure 39. Normality Plot – IV\_LAMC\_2 (Loss of Funding)

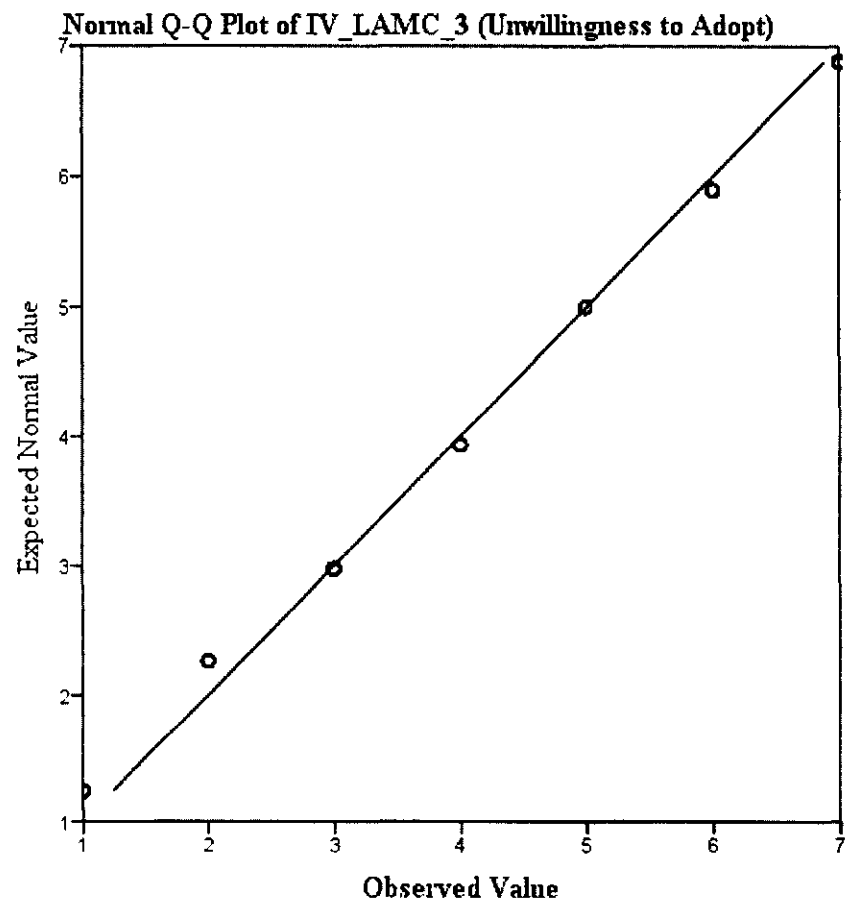


Figure 40. Normality Plot – IV\_LAMC\_3 (Unwillingness to Adopt)

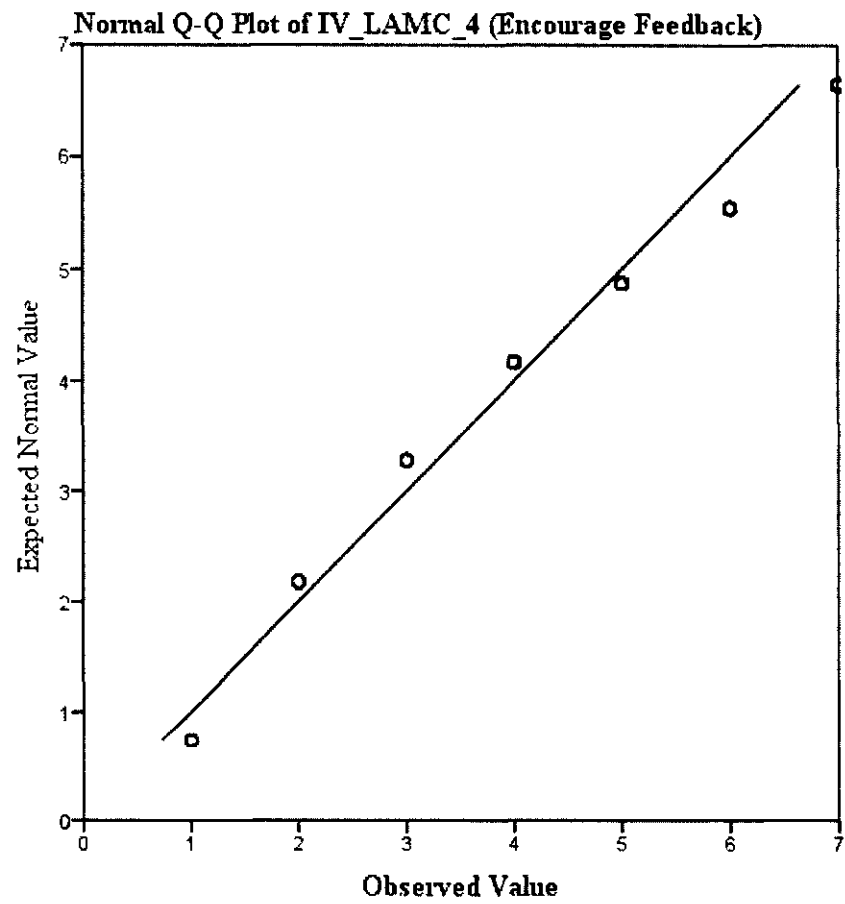


Figure 41. Normality Plot – IV\_LAMC\_4 (Encourage Feedback)



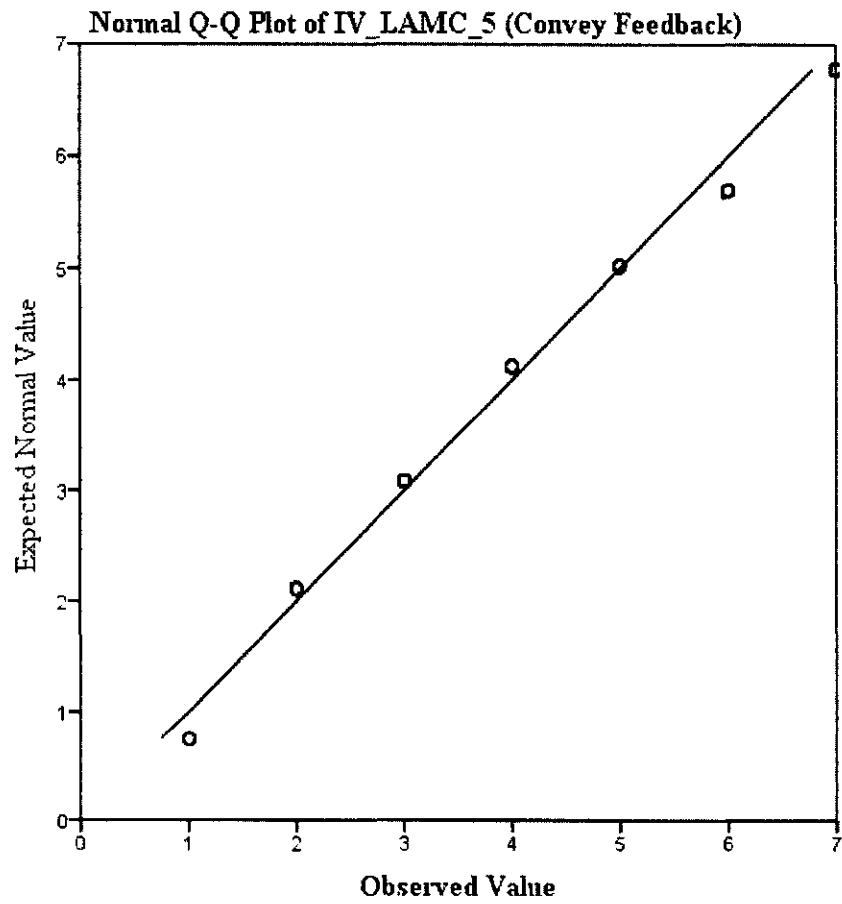


Figure 42. Normality Plot – IV\_LAMC\_5 (Convey Feedback)

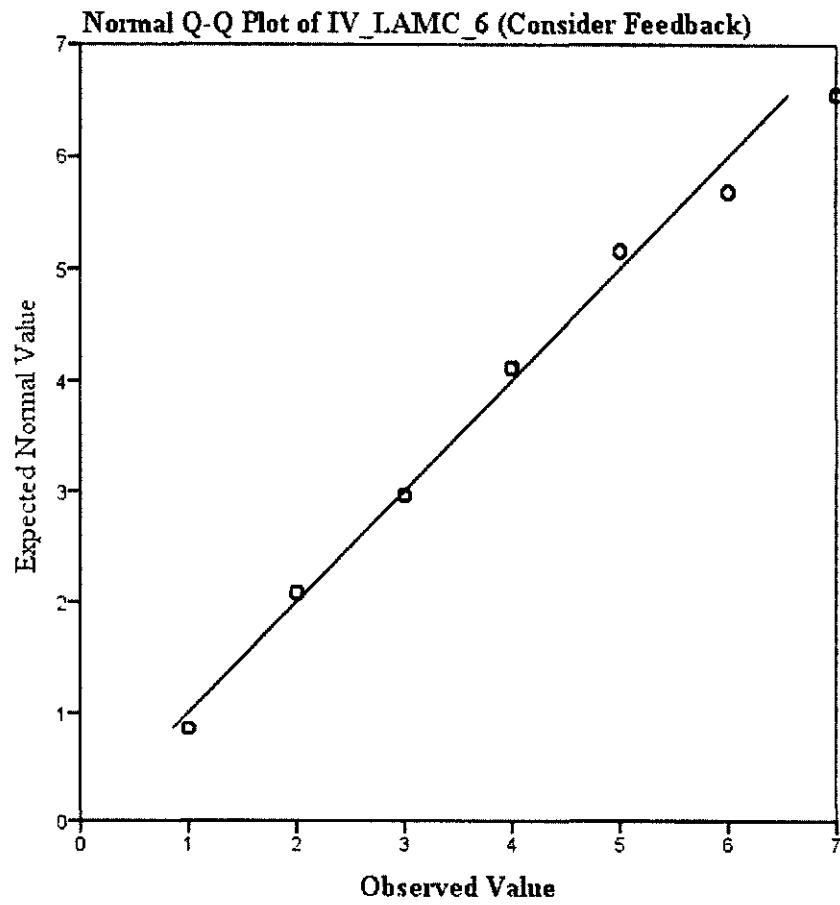


Figure 43. Normality Plot – IV\_LAMC\_6 (Consider Feedback)

## APPENDIX L: WHAT-IF ANALYSIS (CONSTRUCTS #1, #2)

### Overview of *What-If* Analysis

As part of the data analysis phase, several statistical tests (e.g., factor analysis, reliability testing, check for communalities, and skewness testing) were conducted and then summarized in Chapter 4, Section 4.6. Furthermore, results from the correlation analysis and hypotheses were outlined in Section 4.7 of this study.

Specifically, exploratory factor analysis (EFA) was applied to investigate the contributions of the independent variables (i.e., factors) to a construct. As outlined in the *rotated component matrix* (Chapter 4, Table 153), factors LT\_1 and LT\_5 did *not* meet the suggested threshold value of 0.4. Therefore, those two factors were removed (during the confirmatory factor analysis) from construct #1 and construct #2, respectively. As a result, subsequent tests for internal consistency, communality, and skewness were based on the remaining three factors for both construct #1 and #2.

The purpose of this what-if analysis is to investigate potential changes to the statistical results since factors LT\_1 and LT\_5 were *not* removed from their associated constructs. Hence, the intent of this appendix is to provide further evidence in support of the final hypotheses testing. Table 273 and Table 274 summarize and compare the statistical data from the primary data analysis (Chapter 4) and the what-if scenario (Appendix L).

## Exploratory Factor Analysis

Exploratory factor analysis (see Chapter 4, Section 4.6) indicated that LT\_1 and LT\_5 did *not* meet the suggested threshold value of .4. That is, their component matrix values were equal to -0.028 and 0.190 (see Table 261). For the purposes of the what-if analysis, these two factors were not removed from their constructs. This facilitates evaluating whether or not any statistical variations could have led to different conclusions (e.g., correlation analysis and hypotheses testing).

**Table 261.** Rotated Component Matrix (Testing with LT\_1 and LT\_5)

Construct	Metric ID	Rotated Component Matrix						
		1	2	3	4	5	6	7
Construct #1 (H1 <sub>a</sub> ) [Testing with LT_1]	IV_LT_1		-.028					.765
	IV_LT_2		.845					
	IV_LT_3		.911					
	IV LT 4		.915					
Construct #2 (H1 <sub>b</sub> ) [Testing with LT_5]	IV_LT_5				.190			.637
	IV_LT_6				.886			
	IV_LT_7				.896			
	IV LT 8	.423			.473			

### Confirmatory Factor Analysis

In contrast to the confirmatory factor analysis in Chapter 4, Table 262 and Table 263 below retain all of the four component matrix values in support of construct #1 and construct #2. That is, the independent variables LT\_1 and LT\_5 were *not* removed during the CFA.

**Table 262.** Component Matrix (Construct #1 – H1<sub>a</sub> – Testing LT\_1)

Construct	Metric ID	Component 1
Construct #1 (H1 <sub>a</sub> ) [Testing with LT_1]	IV_LT_1	.058
	IV_LT_2	.865
	IV_LT_3	.922
	IV LT 4	.935

**Table 263.** Component Matrix (Construct #2 – H1<sub>b</sub>– Testing LT\_5)

Construct	Metric ID	Component 1
Construct #2 (H1 <sub>b</sub> ) [Testing with LT_5]	IV_LT_5	.368
	IV_LT_6	.853
	IV_LT_7	.906
	IV LT 8	.584

## Reliability

Reliability testing suggests that construct #1's Cronbach's Alpha is equal to 0.721 given four items (i.e., factors). According to the item-total statistics (Table 265), it should be noted that Cronbach's Alpha could increase to 0.894 if LT\_1 were removed. However, for the purposes of this what-if analysis, the reliability statistics of 0.721 meets the recommended criteria (i.e., it is greater than the suggested threshold value of 0.7).

**Table 264.** Reliability Statistics – Cronbach's Alpha (Construct #1 – H1<sub>a</sub>)

Cronbach's Alpha	N of Items
.721	4

**Table 265.** Item-Total Statistics (Construct #1 – H1<sub>a</sub> – Testing LT\_1)

Construct	Metric ID	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Construct #1 (H1 <sub>a</sub> ) [Testing with LT_1]	IV_LT_1	15.88	19.609	.034	.894
	IV_LT_2	13.63	12.815	.671	.565
	IV_LT_3	13.96	11.407	.713	.523
	IV LT 4	13.68	11.394	.748	.502

Alternatively, reliability testing indicates that construct #2's Cronbach's Alpha is equal to 0.644 given four items (i.e., factors). According to the item-total statistics (Table 267), it should be emphasized that Cronbach's Alpha could increase to 0.709 if LT\_5 were removed. Although Cronbach's Alpha of 0.644 does *not* meet the suggested threshold value of 0.7, LT\_5 was kept for the purposes of this what-if analysis.

**Table 266.** Reliability Statistics – Cronbach's Alpha (Construct #2 – H1<sub>b</sub>)

Cronbach's Alpha	N of Items
.644	4

**Table 267.** Item-Total Statistics (Construct #2 – H1<sub>b</sub> – Testing LT\_5)

Construct	Metric ID	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
	IV_LT_5	11.64	15.747	.195	.709
Construct #2 (H1 <sub>b</sub> )	IV_LT_6	13.67	11.394	.549	.483
[Testing with LT_5]	IV_LT_7	13.50	10.406	.664	.389
	IV_LT_8	14.28	12.812	.332	.645

## Communalities

For testing communalities, a construct's mean extraction value (e.g., LT\_1 through LT\_4) should exceed 0.5. Although LT\_1 and LT\_5 were not removed, the average extraction values for both construct #1 and construct #2 still exceed the recommended threshold value of 0.5.

**Table 268.** Communalities (Testing LT\_1 and LT\_5)

Construct	Metric ID	Initial	Extraction	Mean
Construct #1 (H1 <sub>a</sub> ) [Testing with LT_1]	IV_LT_1	1.000	.003	.619
	IV_LT_2	1.000	.749	
	IV_LT_3	1.000	.851	
	IV_LT_4	1.000	.874	
Construct #2 (H1 <sub>b</sub> ) [Testing with LT_5]	IV_LT_5	1.000	.135	.506
	IV_LT_6	1.000	.728	
	IV_LT_7	1.000	.820	
	IV LT 8	1.000	.341	



## Skewness

Skewness testing facilitates the researcher's decision to apply parametric or nonparametric tests. If the data (e.g., factor scores) are normally distributed, the value for the *skewness statistic* ranges between 0 and 1, allowing to apply Pearson's product-moment correlation coefficient. Conversely, a skewness statistic outside the 0 to 1 range would suggest the use of Spearman's rho for correlation testing (which is the case for both construct # 1 and construct #2).

**Table 269.** Descriptive Statistics – Construct #1 (H1<sub>a</sub>\_Testing)

	N		Skewness	
	Statistic		Statistic	Std. Error
FactorScore_1_H1 <sub>a</sub> _Testing	1053		-1.120	.075
FactorScore_DepVariable_Disruption	1095		.747	.074
Valid N (listwise)	1053			

**Table 270.** Descriptive Statistics – Construct #2 (H1<sub>b</sub>\_Testing)

	N		Skewness	
	Statistic		Statistic	Std. Error
FactorScore_2_H1 <sub>b</sub> _Testing	1030		-.335	.076
FactorScore_DepVariable_Disruption	1095		.747	.074
Valid N (listwise)	1030			

## Hypotheses Testing

Table 271 and Table 272 summarize the statistical results from the correlation analysis for construct #1 and construct #2 (given that LT\_1 and LT\_5 were kept after conducting the confirmatory factor analysis). For construct #1, the correlation coefficient equals 0.111 which has a two-tailed significance value ( $p$ -value) of 0.000. Alternatively, for construct #2, the correlation coefficient equals 0.102 which has a two-tailed significance value ( $p$ -value) of 0.001. Although they are statistically significant, they have a low association and low impact. This means that the independent variable(s) have an impact on the dependent variable (DV); however, the impact is marginal because there are other factors that may impact the DV but were not considered in this investigation.

**Table 271.** Correlations (Construct #1 – H1<sub>a</sub>\_Testing)

			FactorScore_1 H1 <sub>a</sub>	FactorScore_ DV
Spearman's rho	FactorScore_1	Correlation Coefficient	1.000	.111**
	_H1 <sub>a</sub> _Testing	Sig. (2-tailed)		.000
		N	1053	1053
	FactorScore_ DepVariable_ Disruption	Correlation Coefficient Sig. (2-tailed) N	.111** .000 1053	1.000 1095
** . Correlation is significant at the 0.01 level (2-tailed).				

**Table 272.** Correlations (Construct #2 – H1<sub>b</sub>\_Testing)

			FactorScore_2 H1 <sub>b</sub>	FactorScore_ DV
Spearman's rho	FactorScore_2	Correlation Coefficient	1.000	.102**
	_H1 <sub>b</sub> _Testing	Sig. (2-tailed)		.001
		N	1030	1030
	FactorScore_ DepVariable_ Disruption	Correlation Coefficient Sig. (2-tailed) N	.102** .001 1030	1.000 1095
** . Correlation is significant at the 0.01 level (2-tailed).				

## Comparison Results

As outlined in the overview of Appendix L, the purpose of this what-if analysis was to evaluate whether or not the conclusion(s) in support of, e.g., hypotheses testing would have resulted in a different outcome given that factors LT\_1 and LT\_5 were not removed from their constructs (in contrast to the researcher's decision to remove these two factors during the data analysis conducted in Chapter 4).

Table 273 and Table 274 summarize and compare the results from the data analysis (Chapter 4) with the results from the what-if analysis in this appendix (L).

**Table 273.** Comparison Results – Construct #1 (without/with LT\_1)

Construct	CFA	Reliability	Communality	Skewness
Construct #1 (H1 <sub>a</sub> )	<ul style="list-style-type: none"> <li>Component matrix value for IV_LT_1 was less than 0.4</li> <li>Remove factor</li> </ul>	<ul style="list-style-type: none"> <li>Initial Cronbach's alpha was 0.721</li> <li>It increased to 0.894 after removing IV_LT_1</li> </ul>	<ul style="list-style-type: none"> <li>Mean communality value was 0.825</li> </ul>	<ul style="list-style-type: none"> <li>Statistic was -1.127</li> <li>Apply Spearman's</li> </ul>
Construct #1 (H1 <sub>a</sub> )	<ul style="list-style-type: none"> <li>Component matrix value for IV_LT_1 was less than 0.4</li> </ul>	<ul style="list-style-type: none"> <li>Final Cronbach's alpha remained at 0.721</li> </ul>	<ul style="list-style-type: none"> <li>Mean communality value was reduced to 0.619</li> </ul>	<ul style="list-style-type: none"> <li>Statistic was -1.120</li> <li>Apply Spearman's</li> </ul>
Testing with IV_LT_1 ( <i>What-if analysis</i> )	<ul style="list-style-type: none"> <li>Keep factor for validation purposes</li> </ul>	<ul style="list-style-type: none"> <li>Therefore, keeping IV_LT_1 resulted in a lower but still acceptable Cronbach's alpha</li> </ul>	<ul style="list-style-type: none"> <li>While it is still acceptable, keeping IV_LT_1 reduces the mean communality by 0.206</li> </ul>	

**Table 274.** Comparison Results – Construct #2 (without/with LT\_5)

Construct	CFA	Reliability	Communality	Skewness
Construct #2 (H1 <sub>b</sub> )	<ul style="list-style-type: none"> <li>• Component matrix value for IV_LT_5 was less than 0.4</li> <li>• Remove factor</li> </ul>	<ul style="list-style-type: none"> <li>• Initial Cronbach's alpha was 0.644</li> <li>• It increased to 0.711 after removing IV_LT_5</li> </ul>	<ul style="list-style-type: none"> <li>• Mean communality value was 0.651</li> </ul>	<ul style="list-style-type: none"> <li>• Statistic was -0.305</li> <li>• Apply Spearman's</li> </ul>
Construct #2 (H1 <sub>b</sub> )  Testing with IV_LT_5 ( <i>What-if analysis</i> )	<ul style="list-style-type: none"> <li>• Component matrix value for IV_LT_5 was less than 0.4</li> <li>• Keep factor for validation purposes</li> </ul>	<ul style="list-style-type: none"> <li>• Final Cronbach's alpha remained at 0.644</li> <li>• Therefore, keeping IV_LT_5 resulted in a lower and less reliable Cronbach's alpha (i.e., value is below the commonly accepted threshold of 0.7)</li> </ul>	<ul style="list-style-type: none"> <li>• Mean communality value was reduced to 0.619</li> <li>• While it is still acceptable, keeping IV_LT_5 reduces the mean communality by 0.113</li> </ul>	<ul style="list-style-type: none"> <li>• Statistic was -0.335</li> <li>• Apply Spearman's</li> </ul>

In summary, the results of this what-if scenario validated the findings and decisions that were made during the data analysis in Chapter 4. While keeping factors LT\_1 and LT\_5 resulted in a reduced reliability (i.e., Cronbach's Alpha), both mean communality values still met the suggested threshold values of 0.5. Also, keeping the two suggested factors (as part of construct #1 and construct #2) did *not* result in any significant changes with respect to skewness testing. Therefore, as proposed in Chapters 4 and 5, the data collected in this sample and analyzed in this research suggest to accept both hypothesis H1<sub>a</sub> and hypothesis H1<sub>b</sub>.

## APPENDIX M: NONPARAMETRIC CORRELATIONS

Table 275. Full Correlation Matrix (Part I)

Spearman's rho		IV_ LT 1	IV_ LT 2	IV_ LT 3	IV_ LT 4	IV_ LT 5
IV_LT_1 (Number of Generals)	Correlation	1.000	.087**	.016	.043	.102**
	Coefficient Sig. (2-tailed)		.005	.592	.159	.001
	N	1095	1056	1060	1060	1091
IV_LT_2 (Commander's Intent)	Correlation	.087**	1.000	.648**	.671**	.228**
	Coefficient Sig. (2-tailed)	.005		.000	.000	.000
	N	1056	1056	1054	1054	1054
IV_LT_3 (Re-evaluation Unit Goals)	Correlation	.016	.648**	1.000	.813**	.191**
	Coefficient Sig. (2-tailed)	.592	.000		.000	.000
	N	1060	1054	1060	1059	1058
IV_LT_4 (Re-evaluation Priorities)	Correlation	.043	.671**	.813**	1.000	.210**
	Coefficient Sig. (2-tailed)	.159	.000	.000		.000
	N	1060	1054	1059	1060	1058
IV_LT_5 (Changes in OE)	Correlation	.102**	.228**	.191**	.210**	1.000
	Coefficient Sig. (2-tailed)	.001	.000	.000	.000	
	N	1091	1054	1058	1058	1091
IV_LT_6 (Changes in Regulations)	Correlation	-.022	.121**	.170**	.164**	.087**
	Coefficient Sig. (2-tailed)	.470	.000	.000	.000	.005
	N	1045	1020	1025	1025	1044
IV_LT_7 (Changes in Policies)	Correlation	.078*	.214**	.239**	.229**	.158**
	Coefficient Sig. (2-tailed)	.011	.000	.000	.000	.000
	N	1060	1034	1038	1038	1059
IV_LT_8 (Fluctuating Guidance)	Correlation	.134**	.153**	.142**	.145**	.099**
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.001
	N	1063	1034	1038	1038	1062
IV_RBT_1 (Knowledge/Info Sharing)	Correlation	.142**	.133**	.141**	.166**	.147**
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	1090	1052	1056	1056	1086

Table 275. Continued.

IV_RBT_2 (Increase Collaboration)	Correlation	.108**	.105**	.047	.060	.049
	Coefficient Sig. (2-tailed)	.000	.001	.135	.054	.111
	N	1050	1017	1020	1019	1046
IV_RBT_3 (Embrace Collaboration)	Correlation	.089**	.064*	.056	.049	.019
	Coefficient Sig. (2-tailed)	.003	.039	.067	.113	.539
	N	1089	1052	1055	1055	1085
IV_RBT_4 (Prefer Status Quo)	Correlation	.036	.081**	.006	-.003	.086**
	Coefficient Sig. (2-tailed)	.236	.008	.855	.931	.005
	N	1091	1053	1058	1057	1087
IV_RBT_5 (Mission Performance)	Correlation	.147**	.030	-.056	-.048	.017
	Coefficient Sig. (2-tailed)	.000	.355	.078	.132	.597
	N	1010	983	984	984	1007
IV_RBT_6 (Adopt Mandated Change)	Correlation	-.015	.033	.054	.057	.048
	Coefficient Sig. (2-tailed)	.624	.290	.080	.066	.115
	N	1078	1045	1048	1048	1075
IV_RBT_7 (Changes in Work)	Correlation	-.050	.313**	.354**	.327**	.141**
	Coefficient Sig. (2-tailed)	.104	.000	.000	.000	.000
	N	1078	1045	1049	1049	1074
IV_RBT_8 (Unwelcome Changes)	Correlation	.078*	.058	.073*	.083**	.061*
	Coefficient Sig. (2-tailed)	.010	.059	.017	.007	.043
	N	1091	1053	1057	1057	1087
IV_RBT_9 (Unnecessary Changes)	Correlation	-.104**	.112**	.100**	.123**	.018
	Coefficient Sig. (2-tailed)	.001	.000	.001	.000	.561
	N	1092	1053	1057	1057	1088
IV_LAMC_1 (Loss of Manpower)	Correlation	.123**	.149**	.113**	.112**	.163**
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	1008	978	982	982	1006
IV_LAMC_2 (Loss of Funding)	Correlation	.148**	.123**	.108**	.117**	.147**
	Coefficient Sig. (2-tailed)	.000	.000	.001	.000	.000
	N	992	964	968	968	990

Table 275. Continued.

IV_LAMC_3 (Unwillingness to Adopt)	Correlation Coefficient	.059	.048	.049	.057	.097**
	Sig. (2-tailed)	.061	.137	.125	.076	.002
	N	1009	981	985	985	1006
IV_LAMC_4 (Encourage Feedback)	Correlation Coefficient	.157**	.019	.007	.009	.065*
	Sig. (2-tailed)	.000	.541	.819	.770	.035
	N	1045	1012	1017	1016	1041
IV_LAMC_5 (Convey Feedback)	Correlation Coefficient	.136**	.114**	.074*	.109**	.130**
	Sig. (2-tailed)	.000	.000	.021	.001	.000
	N	981	952	957	956	978
IV_LAMC_6 (Consider Feedback)	Correlation Coefficient	.144**	.091**	.067*	.074*	.084**
	Sig. (2-tailed)	.000	.005	.039	.023	.009
	N	960	933	937	936	957
FactorScore_1_ H1 <sub>a</sub>	Correlation Coefficient	.060	.857**	.904**	.912**	.229**
	Sig. (2-tailed)	.053	.000	0.000	0.000	.000
	N	1053	1053	1053	1053	1051
FactorScore_2_ H1 <sub>b</sub>	Correlation Coefficient	.054	.206**	.231**	.223**	.146**
	Sig. (2-tailed)	.081	.000	.000	.000	.000
	N	1030	1008	1011	1011	1029
FactorScore_3_ H2 <sub>a</sub>	Correlation Coefficient	.138**	.127**	.106**	.110**	.096**
	Sig. (2-tailed)	.000	.000	.001	.000	.002
	N	1047	1014	1017	1016	1043
FactorScore_4_ H2 <sub>b</sub>	Correlation Coefficient	.072*	.080*	.012	.013	.084**
	Sig. (2-tailed)	.023	.012	.707	.693	.008
	N	1008	981	983	982	1005
FactorScore_5_ H2 <sub>c</sub>	Correlation Coefficient	-.119**	.062*	.052	.050	-.016
	Sig. (2-tailed)	.000	.045	.095	.106	.600
	N	1072	1040	1044	1044	1068
FactorScore_6_ H3 <sub>a</sub>	Correlation Coefficient	.133**	.126**	.111**	.112**	.162**
	Sig. (2-tailed)	.000	.000	.001	.001	.000
	N	975	948	952	952	973

Table 275. Continued.

FactorScore_7_ H3 <sub>b</sub>	Correlation	.160**	.089**	.056	.071*	.110**
	Coefficient					
	Sig. (2-tailed)	.000	.007	.091	.031	.001
	N	946	920	924	923	943
FactorScore_ DepVariable_ Disruption	Correlation	.094**	.075*	.093**	.105**	.075*
	Coefficient					
	Sig. (2-tailed)	.002	.014	.002	.001	.013
	N	1095	1056	1060	1060	1091
** . Correlation is significant at the 0.01 level (2-tailed).						
* . Correlation is significant at the 0.05 level (2-tailed).						



**Table 276.** Full Correlation Matrix (Part II)

Spearman's rho		IV LT 6	IV LT 7	IV LT 8	IV RBT 1	IV RBT 2
IV_LT_1 (Number of Generals)	Correlation Coefficient	-.022	.078*	.134**	.142**	.108**
	Sig. (2-tailed)	.470	.011	.000	.000	.000
	N	1045	1060	1063	1090	1050
IV_LT_2 (Commander's Intent)	Correlation Coefficient	.121**	.214**	.153**	.133**	.105**
	Sig. (2-tailed)	.000	.000	.000	.000	.001
	N	1020	1034	1034	1052	1017
IV_LT_3 (Re-evaluation Unit Goals)	Correlation Coefficient	.170**	.239**	.142**	.141**	.047
	Sig. (2-tailed)	.000	.000	.000	.000	.135
	N	1025	1038	1038	1056	1020
IV_LT_4 (Re-evaluation Priorities)	Correlation Coefficient	.164**	.229**	.145**	.166**	.060
	Sig. (2-tailed)	.000	.000	.000	.000	.054
	N	1025	1038	1038	1056	1019
IV_LT_5 (Changes in OE)	Correlation Coefficient	.087**	.158**	.099**	.147**	.049
	Sig. (2-tailed)	.005	.000	.001	.000	.111
	N	1044	1059	1062	1086	1046
IV_LT_6 (Changes in Regulations)	Correlation Coefficient	1.000	.725**	.260**	.062*	-.055
	Sig. (2-tailed)		.000	.000	.046	.083
	N	1045	1043	1031	1042	1009
IV_LT_7 (Changes in Policies)	Correlation Coefficient	.725**	1.000	.365**	.114**	.003
	Sig. (2-tailed)	.000		.000	.000	.919
	N	1043	1060	1046	1057	1022
IV_LT_8 (Fluctuating Guidance)	Correlation Coefficient	.260**	.365**	1.000	.305**	.270**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	1031	1046	1063	1059	1025
IV_RBT_1 (Knowledge/Info Sharing)	Correlation Coefficient	.062*	.114**	.305**	1.000	.395**
	Sig. (2-tailed)	.046	.000	.000		.000
	N	1042	1057	1059	1090	1048
IV_RBT_2 (Increase Collaboration)	Correlation Coefficient	-.055	.003	.270**	.395**	1.000
	Sig. (2-tailed)	.083	.919	.000	.000	
	N	1009	1022	1025	1048	1050

Table 276. Continued.

IV_RBT_3 (Embrace Collaboration)	Correlation	-.010	.041	.234**	.460**	.583**
	Coefficient Sig. (2-tailed)	.753	.187	.000	.000	.000
	N	1040	1056	1059	1085	1049
IV_RBT_4 (Prefer Status Quo)	Correlation	-.012	.025	.139**	.291**	.177**
	Coefficient Sig. (2-tailed)	.694	.421	.000	.000	.000
	N	1043	1058	1061	1087	1048
IV_RBT_5 (Mission Performance)	Correlation	-.089**	-.006	.292**	.162**	.401**
	Coefficient Sig. (2-tailed)	.005	.850	.000	.000	.000
	N	980	991	999	1007	987
IV_RBT_6 (Adopt Mandated Change)	Correlation	-.065*	-.035	.167**	.337**	.309**
	Coefficient Sig. (2-tailed)	.038	.256	.000	.000	.000
	N	1033	1048	1053	1074	1037
IV_RBT_7 (Changes in Work)	Correlation	.154**	.220**	.135**	.068*	-.022
	Coefficient Sig. (2-tailed)	.000	.000	.000	.025	.481
	N	1035	1049	1054	1073	1035
IV_RBT_8 (Unwelcome Changes)	Correlation	.041	.028	.196**	.324**	.253**
	Coefficient Sig. (2-tailed)	.191	.371	.000	.000	.000
	N	1042	1057	1060	1086	1047
IV_RBT_9 (Unnecessary Changes)	Correlation	-.035	-.057	-.175**	.041	-.082**
	Coefficient Sig. (2-tailed)	.263	.062	.000	.179	.008
	N	1043	1058	1061	1087	1048
IV_LAMC_1 (Loss of Manpower)	Correlation	.056	.107**	.105**	.099**	.063
	Coefficient Sig. (2-tailed)	.080	.001	.001	.002	.050
	N	976	987	991	1005	977
IV_LAMC_2 (Loss of Funding)	Correlation	.056	.112**	.136**	.127**	.055
	Coefficient Sig. (2-tailed)	.082	.000	.000	.000	.087
	N	962	971	974	989	962
IV_LAMC_3 (Unwillingness to Adopt)	Correlation	.020	.045	.220**	.296**	.172**
	Coefficient Sig. (2-tailed)	.528	.162	.000	.000	.000
	N	978	988	992	1006	978

Table 276. Continued.

IV_LAMC_4 (Encourage Feedback)	Correlation	-.070*	.045	.339**	.364**	.512**
	Coefficient Sig. (2-tailed)	.027	.148	.000	.000	.000
	N	1007	1019	1025	1040	1014
IV_LAMC_5 (Convey Feedback)	Correlation	-.058	.026	.257**	.369**	.437**
	Coefficient Sig. (2-tailed)	.075	.423	.000	.000	.000
	N	955	964	969	977	965
IV_LAMC_6 (Consider Feedback)	Correlation	.028	.092**	.348**	.329**	.434**
	Coefficient Sig. (2-tailed)	.397	.004	.000	.000	.000
	N	934	943	949	955	943
FactorScore_1_ H1 <sub>a</sub>	Correlation	.175**	.260**	.175**	.164**	.087**
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.005
	N	1018	1032	1032	1049	1015
FactorScore_2_ H1 <sub>b</sub>	Correlation	.860**	.906**	.576**	.158**	.058
	Coefficient Sig. (2-tailed)	.000	0.000	.000	.000	.068
	N	1030	1030	1030	1027	997
FactorScore_3_ H2 <sub>a</sub>	Correlation	-.007	.058	.317**	.738**	.819**
	Coefficient Sig. (2-tailed)	.831	.066	.000	.000	.000
	N	1007	1020	1022	1047	1047
FactorScore_4_ H2 <sub>b</sub>	Correlation	-.082*	-.011	.250**	.397**	.387**
	Coefficient Sig. (2-tailed)	.010	.731	.000	.000	.000
	N	978	989	997	1005	986
FactorScore_5_ H2 <sub>c</sub>	Correlation	-.008	-.007	-.204**	-.187**	-.238**
	Coefficient Sig. (2-tailed)	.789	.817	.000	.000	.000
	N	1031	1045	1050	1067	1031
FactorScore_6_ H3 <sub>a</sub>	Correlation	.066*	.130**	.184**	.197**	.106**
	Coefficient Sig. (2-tailed)	.043	.000	.000	.000	.001
	N	949	956	959	972	947
FactorScore_7_ H3 <sub>b</sub>	Correlation	-.034	.060	.347**	.399**	.524**
	Coefficient Sig. (2-tailed)	.300	.066	.000	.000	.000
	N	922	930	936	942	934

Table 276. Continued.

FactorScore_	Correlation	.084**	.078*	.073*	.009	.014
DepVariable_	Coefficient					
Disruption	Sig. (2-tailed)	.007	.011	.017	.768	.648
	N	1045	1060	1063	1090	1050

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Table 277. Full Correlation Matrix (Part III)

Spearman's rho		IV RBT 3	IV RBT 4	IV RBT 5	IV RBT 6	IV RBT 7
IV_LT_1 (Number of Generals)	Correlation Coefficient	.089**	.036	.147**	-.015	-.050
	Sig. (2-tailed)	.003	.236	.000	.624	.104
	N	1089	1091	1010	1078	1078
IV_LT_2 (Commander's Intent)	Correlation Coefficient	.064*	.081**	.030	.033	.313**
	Sig. (2-tailed)	.039	.008	.355	.290	.000
	N	1052	1053	983	1045	1045
IV_LT_3 (Re-evaluation Unit Goals)	Correlation Coefficient	.056	.006	-.056	.054	.354**
	Sig. (2-tailed)	.067	.855	.078	.080	.000
	N	1055	1058	984	1048	1049
IV_LT_4 (Re-evaluation Priorities)	Correlation Coefficient	.049	-.003	-.048	.057	.327**
	Sig. (2-tailed)	.113	.931	.132	.066	.000
	N	1055	1057	984	1048	1049
IV_LT_5 (Changes in OE)	Correlation Coefficient	.019	.086**	.017	.048	.141**
	Sig. (2-tailed)	.539	.005	.597	.115	.000
	N	1085	1087	1007	1075	1074
IV_LT_6 (Changes in Regulations)	Correlation Coefficient	-.010	-.012	-.089**	-.065*	.154**
	Sig. (2-tailed)	.753	.694	.005	.038	.000
	N	1040	1043	980	1033	1035
IV_LT_7 (Changes in Policies)	Correlation Coefficient	.041	.025	-.006	-.035	.220**
	Sig. (2-tailed)	.187	.421	.850	.256	.000
	N	1056	1058	991	1048	1049
IV_LT_8 (Fluctuating Guidance)	Correlation Coefficient	.234**	.139**	.292**	.167**	.135**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	1059	1061	999	1053	1054
IV_RBT_1 (Knowledge/Info Sharing)	Correlation Coefficient	.460**	.291**	.162**	.337**	.068*
	Sig. (2-tailed)	.000	.000	.000	.000	.025
	N	1085	1087	1007	1074	1073
IV_RBT_2 (Increase Collaboration)	Correlation Coefficient	.583**	.177**	.401**	.309**	-.022
	Sig. (2-tailed)	.000	.000	.000	.000	.481
	N	1049	1048	987	1037	1035

Table 277. Continued.

IV_RBT_3 (Embrace Collaboration)	Correlation	1.000	.298**	.233**	.362**	-.019
	Coefficient Sig. (2-tailed)		.000	.000	.000	.524
	N	1089	1086	1007	1073	1073
IV_RBT_4 (Prefer Status Quo)	Correlation	.298**	1.000	.077*	.320**	-.017
	Coefficient Sig. (2-tailed)	.000		.015	.000	.573
	N	1086	1091	1009	1077	1075
IV_RBT_5 (Mission Performance)	Correlation	.233**	.077*	1.000	.163**	-.098**
	Coefficient Sig. (2-tailed)	.000	.015		.000	.002
	N	1007	1009	1010	1009	1001
IV_RBT_6 (Adopt Mandated Change)	Correlation	.362**	.320**	.163**	1.000	-.111**
	Coefficient Sig. (2-tailed)	.000	.000	.000		.000
	N	1073	1077	1009	1078	1065
IV_RBT_7 (Changes in Work)	Correlation	-.019	-.017	-.098**	-.111**	1.000
	Coefficient Sig. (2-tailed)	.524	.573	.002	.000	
	N	1073	1075	1001	1065	1078
IV_RBT_8 (Unwelcome Changes)	Correlation	.351**	.425**	.125**	.354**	-.043
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.161
	N	1086	1087	1008	1075	1074
IV_RBT_9 (Unnecessary Changes)	Correlation	-.034	-.084**	-.225**	-.001	.048
	Coefficient Sig. (2-tailed)	.263	.006	.000	.984	.119
	N	1086	1088	1009	1075	1075
IV_LAMC_1 (Loss of Manpower)	Correlation	.066*	-.026	.090**	-.005	.137**
	Coefficient Sig. (2-tailed)	.037	.410	.005	.881	.000
	N	1004	1004	952	999	1001
IV_LAMC_2 (Loss of Funding)	Correlation	.079*	-.016	.136**	.013	.116**
	Coefficient Sig. (2-tailed)	.013	.618	.000	.690	.000
	N	988	988	940	983	985
IV_LAMC_3 (Unwillingness to Adopt)	Correlation	.249**	.245**	.124**	.261**	.038
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.230
	N	1005	1005	956	1000	1004

Table 277. Continued.

IV_LAMC_4 (Encourage Feedback)	Correlation	.347**	.113**	.435**	.239**	-.033
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.284
	N	1041	1044	980	1035	1036
IV_LAMC_5 (Convey Feedback)	Correlation	.329**	.159**	.323**	.267**	.058
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.068
	N	977	980	938	973	974
IV_LAMC_6 (Consider Feedback)	Correlation	.340**	.081*	.443**	.210**	.052
	Coefficient Sig. (2-tailed)	.000	.012	.000	.000	.108
	N	956	959	918	952	954
FactorScore_1_ H1 <sub>a</sub>	Correlation	.068*	.033	-.023	.056	.379**
	Coefficient Sig. (2-tailed)	.028	.288	.477	.070	.000
	N	1049	1051	980	1042	1042
FactorScore_2_ H1 <sub>b</sub>	Correlation	.073*	.039	.041	-.008	.221**
	Coefficient Sig. (2-tailed)	.020	.209	.197	.797	.000
	N	1027	1029	974	1021	1024
FactorScore_3_ H2 <sub>a</sub>	Correlation	.845**	.306**	.326**	.406**	.010
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.748
	N	1047	1045	984	1034	1032
FactorScore_4_ H2 <sub>b</sub>	Correlation	.440**	.742**	.422**	.791**	-.122**
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	1005	1008	1008	1008	999
FactorScore_5_ H2 <sub>c</sub>	Correlation	-.277**	-.321**	-.223**	-.261**	.196**
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	1068	1069	999	1060	1072
FactorScore_6_ H3 <sub>a</sub>	Correlation	.137**	.053	.144**	.075*	.115**
	Coefficient Sig. (2-tailed)	.000	.096	.000	.020	.000
	N	971	971	927	966	971
FactorScore_7_ H3 <sub>b</sub>	Correlation	.377**	.130**	.446**	.272**	.041
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.206
	N	942	945	910	938	941

Table 277. Continued.

FactorScore_	Correlation	-.007	-.091**	-.040	-.008	.146**
DepVariable_	Coefficient					
Disruption	Sig. (2-tailed)	.824	.003	.201	.805	.000
	N	1089	1091	1010	1078	1078

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).



Table 278. Full Correlation Matrix (Part IV)

Spearman's rho		IV RBT 8	IV RBT 9	IV LAMC 1	IV LAMC 2	IV LAMC 3
IV_LT_1 (Number of Generals)	Correlation	.078*	-.104**	.123**	.148**	.059
	Coefficient Sig. (2-tailed)	.010	.001	.000	.000	.061
	N	1091	1092	1008	992	1009
IV_LT_2 (Commander's Intent)	Correlation	.058	.112**	.149**	.123**	.048
	Coefficient Sig. (2-tailed)	.059	.000	.000	.000	.137
	N	1053	1053	978	964	981
IV_LT_3 (Re-evaluation Unit Goals)	Correlation	.073*	.100**	.113**	.108**	.049
	Coefficient Sig. (2-tailed)	.017	.001	.000	.001	.125
	N	1057	1057	982	968	985
IV_LT_4 (Re-evaluation Priorities)	Correlation	.083**	.123**	.112**	.117**	.057
	Coefficient Sig. (2-tailed)	.007	.000	.000	.000	.076
	N	1057	1057	982	968	985
IV_LT_5 (Changes in OE)	Correlation	.061*	.018	.163**	.147**	.097**
	Coefficient Sig. (2-tailed)	.043	.561	.000	.000	.002
	N	1087	1088	1006	990	1006
IV_LT_6 (Changes in Regulations)	Correlation	.041	-.035	.056	.056	.020
	Coefficient Sig. (2-tailed)	.191	.263	.080	.082	.528
	N	1042	1043	976	962	978
IV_LT_7 (Changes in Policies)	Correlation	.028	-.057	.107**	.112**	.045
	Coefficient Sig. (2-tailed)	.371	.062	.001	.000	.162
	N	1057	1058	987	971	988
IV_LT_8 (Fluctuating Guidance)	Correlation	.196**	-.175**	.105**	.136**	.220**
	Coefficient Sig. (2-tailed)	.000	.000	.001	.000	.000
	N	1060	1061	991	974	992
IV_RBT_1 (Knowledge/Info Sharing)	Correlation	.324**	.041	.099**	.127**	.296**
	Coefficient Sig. (2-tailed)	.000	.179	.002	.000	.000
	N	1086	1087	1005	989	1006
IV_RBT_2 (Increase Collaboration)	Correlation	.253**	-.082**	.063	.055	.172**
	Coefficient Sig. (2-tailed)	.000	.008	.050	.087	.000
	N	1047	1048	977	962	978

Table 278. Continued.

IV_RBT_3 (Embrace Collaboration)	Correlation	.351**	-.034	.066*	.079*	.249**
	Coefficient Sig. (2-tailed)	.000	.263	.037	.013	.000
	N	1086	1086	1004	988	1005
IV_RBT_4 (Prefer Status Quo)	Correlation	.425**	-.084**	-.026	-.016	.245**
	Coefficient Sig. (2-tailed)	.000	.006	.410	.618	.000
	N	1087	1088	1004	988	1005
IV_RBT_5 (Mission Performance)	Correlation	.125**	-.225**	.090**	.136**	.124**
	Coefficient Sig. (2-tailed)	.000	.000	.005	.000	.000
	N	1008	1009	952	940	956
IV_RBT_6 (Adopt Mandated Change)	Correlation	.354**	-.001	-.005	.013	.261**
	Coefficient Sig. (2-tailed)	.000	.984	.881	.690	.000
	N	1075	1075	999	983	1000
IV_RBT_7 (Changes in Work)	Correlation	-.043	.048	.137**	.116**	.038
	Coefficient Sig. (2-tailed)	.161	.119	.000	.000	.230
	N	1074	1075	1001	985	1004
IV_RBT_8 (Unwelcome Changes)	Correlation	1.000	-.237**	.067*	.024	.351**
	Coefficient Sig. (2-tailed)		.000	.033	.458	.000
	N	1091	1089	1006	990	1007
IV_RBT_9 (Unnecessary Changes)	Correlation	-.237**	1.000	-.047	-.086**	-.104**
	Coefficient Sig. (2-tailed)	.000		.133	.007	.001
	N	1089	1092	1007	991	1008
IV_LAMC_1 (Loss of Manpower)	Correlation	.067*	-.047	1.000	.709**	.335**
	Coefficient Sig. (2-tailed)	.033	.133		.000	.000
	N	1006	1007	1008	986	992
IV_LAMC_2 (Loss of Funding)	Correlation	.024	-.086**	.709**	1.000	.316**
	Coefficient Sig. (2-tailed)	.458	.007	.000		.000
	N	990	991	986	992	979
IV_LAMC_3 (Unwillingness to Adopt)	Correlation	.351**	-.104**	.335**	.316**	1.000
	Coefficient Sig. (2-tailed)	.000	.001	.000	.000	
	N	1007	1008	992	979	1009

Table 278. Continued.

IV_LAMC_4 (Encourage Feedback)	Correlation	.205**	-.159**	.073*	.117**	.207**
	Coefficient Sig. (2-tailed)	.000	.000	.022	.000	.000
	N	1041	1042	977	964	979
IV_LAMC_5 (Convey Feedback)	Correlation	.239**	-.041	.134**	.185**	.262**
	Coefficient Sig. (2-tailed)	.000	.195	.000	.000	.000
	N	978	979	930	917	930
IV_LAMC_6 (Consider Feedback)	Correlation	.207**	-.163**	.122**	.162**	.248**
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	958	960	913	900	912
FactorScore_1_ H1 <sub>a</sub>	Correlation	.080**	.115**	.131**	.123**	.056
	Coefficient Sig. (2-tailed)	.010	.000	.000	.000	.081
	N	1050	1050	975	961	978
FactorScore_2_ H1 <sub>b</sub>	Correlation	.073*	-.079*	.114**	.128**	.082*
	Coefficient Sig. (2-tailed)	.020	.012	.000	.000	.011
	N	1027	1028	968	953	969
FactorScore_3_ H2 <sub>a</sub>	Correlation	.380**	-.029	.097**	.112**	.270**
	Coefficient Sig. (2-tailed)	.000	.353	.002	.001	.000
	N	1045	1045	975	960	976
FactorScore_4_ H2 <sub>b</sub>	Correlation	.465**	-.118**	.013	.043	.303**
	Coefficient Sig. (2-tailed)	.000	.000	.680	.188	.000
	N	1006	1007	950	938	954
FactorScore_5_ H2 <sub>c</sub>	Correlation	-.800**	.725**	-.050	-.051	-.294**
	Coefficient Sig. (2-tailed)	.000	.000	.117	.108	.000
	N	1072	1072	998	982	1001
FactorScore_6_ H3 <sub>a</sub>	Correlation	.140**	-.095**	.889**	.869**	.579**
	Coefficient Sig. (2-tailed)	.000	.003	0.000	.000	.000
	N	973	974	975	975	975
FactorScore_7_ H3 <sub>b</sub>	Correlation	.253**	-.133**	.135**	.187**	.275**
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	944	946	902	890	902

Table 278. Continued.

FactorScore_	Correlation	-.080**	.075*	.129**	.109**	.007
DepVariable_	Coefficient					
Disruption	Sig. (2-tailed)	.008	.014	.000	.001	.836
	N	1091	1092	1008	992	1009

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

**Table 279.** Full Correlation Matrix (Part V)

Spearman's rho		IV_ LAMC 4	IV_ LAMC 5	IV_ LAMC 6	FS_1_ HI <sub>a</sub>	FS_2_ HI <sub>b</sub>
IV_LT_1 (Number of Generals)	Correlation Coefficient	.157**	.136**	.144**	.060	.054
	Sig. (2-tailed)	.000	.000	.000	.053	.081
	N	1045	981	960	1053	1030
IV_LT_2 (Commander's Intent)	Correlation Coefficient	.019	.114**	.091**	.857**	.206**
	Sig. (2-tailed)	.541	.000	.005	.000	.000
	N	1012	952	933	1053	1008
IV_LT_3 (Re-evaluation Unit Goals)	Correlation Coefficient	.007	.074*	.067*	.904**	.231**
	Sig. (2-tailed)	.819	.021	.039	0.000	.000
	N	1017	957	937	1053	1011
IV_LT_4 (Re-evaluation Priorities)	Correlation Coefficient	.009	.109**	.074*	.912**	.223**
	Sig. (2-tailed)	.770	.001	.023	0.000	.000
	N	1016	956	936	1053	1011
IV_LT_5 (Changes in OE)	Correlation Coefficient	.065*	.130**	.084**	.229**	.146**
	Sig. (2-tailed)	.035	.000	.009	.000	.000
	N	1041	978	957	1051	1029
IV_LT_6 (Changes in Regulations)	Correlation Coefficient	-.070*	-.058	.028	.175**	.860**
	Sig. (2-tailed)	.027	.075	.397	.000	.000
	N	1007	955	934	1018	1030
IV_LT_7 (Changes in Policies)	Correlation Coefficient	.045	.026	.092**	.260**	.906**
	Sig. (2-tailed)	.148	.423	.004	.000	0.000
	N	1019	964	943	1032	1030
IV_LT_8 (Fluctuating Guidance)	Correlation Coefficient	.339**	.257**	.348**	.175**	.576**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	1025	969	949	1032	1030
IV_RBT_1 (Knowledge/Info Sharing)	Correlation Coefficient	.364**	.369**	.329**	.164**	.158**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	1040	977	955	1049	1027
IV_RBT_2 (Increase Collaboration)	Correlation Coefficient	.512**	.437**	.434**	.087**	.058
	Sig. (2-tailed)	.000	.000	.000	.005	.068
	N	1014	965	943	1015	997

Table 279. Continued.

IV_RBT_3 (Embrace Collaboration)	Correlation	.347**	.329**	.340**	.068*	.073*
	Coefficient Sig. (2-tailed)	.000	.000	.000	.028	.020
	N	1041	977	956	1049	1027
IV_RBT_4 (Prefer Status Quo)	Correlation	.113**	.159**	.081*	.033	.039
	Coefficient Sig. (2-tailed)	.000	.000	.012	.288	.209
	N	1044	980	959	1051	1029
IV_RBT_5 (Mission Performance)	Correlation	.435**	.323**	.443**	-.023	.041
	Coefficient Sig. (2-tailed)	.000	.000	.000	.477	.197
	N	980	938	918	980	974
IV_RBT_6 (Adopt Mandated Change)	Correlation	.239**	.267**	.210**	.056	-.008
	Coefficient Sig. (2-tailed)	.000	.000	.000	.070	.797
	N	1035	973	952	1042	1021
IV_RBT_7 (Changes in Work)	Correlation	-.033	.058	.052	.379**	.221**
	Coefficient Sig. (2-tailed)	.284	.068	.108	.000	.000
	N	1036	974	954	1042	1024
IV_RBT_8 (Unwelcome Changes)	Correlation	.205**	.239**	.207**	.080**	.073*
	Coefficient Sig. (2-tailed)	.000	.000	.000	.010	.020
	N	1041	978	958	1050	1027
IV_RBT_9 (Unnecessary Changes)	Correlation	-.159**	-.041	-.163**	.115**	-.079*
	Coefficient Sig. (2-tailed)	.000	.195	.000	.000	.012
	N	1042	979	960	1050	1028
IV_LAMC_1 (Loss of Manpower)	Correlation	.073*	.134**	.122**	.131**	.114**
	Coefficient Sig. (2-tailed)	.022	.000	.000	.000	.000
	N	977	930	913	975	968
IV_LAMC_2 (Loss of Funding)	Correlation	.117**	.185**	.162**	.123**	.128**
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	964	917	900	961	953
IV_LAMC_3 (Unwillingness to Adopt)	Correlation	.207**	.262**	.248**	.056	.082*
	Coefficient Sig. (2-tailed)	.000	.000	.000	.081	.011
	N	979	930	912	978	969

Table 279. Continued.

IV_LAMC_4 (Encourage Feedback)	Correlation	1.000	.631**	.656**	.020	.083**
	Coefficient Sig. (2-tailed)		.000	.000	.534	.009
	N	1045	975	955	1010	997
IV_LAMC_5 (Convey Feedback)	Correlation	.631**	1.000	.703**	.115**	.052
	Coefficient Sig. (2-tailed)	.000		.000	.000	.111
	N	975	981	949	951	947
IV_LAMC_6 (Consider Feedback)	Correlation	.656**	.703**	1.000	.093**	.156**
	Coefficient Sig. (2-tailed)	.000	.000		.004	.000
	N	955	949	960	932	927
FactorScore_1_ H1 <sub>a</sub>	Correlation	.020	.115**	.093**	1.000	.253**
	Coefficient Sig. (2-tailed)	.534	.000	.004		.000
	N	1010	951	932	1053	1006
FactorScore_2_ H1 <sub>b</sub>	Correlation	.083**	.052	.156**	.253**	1.000
	Coefficient Sig. (2-tailed)	.009	.111	.000	.000	
	N	997	947	927	1006	1030
FactorScore_3_ H2 <sub>a</sub>	Correlation	.495**	.454**	.441**	.134**	.110**
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.001
	N	1011	962	940	1012	995
FactorScore_4_ H2 <sub>b</sub>	Correlation	.318**	.325**	.271**	.043	.022
	Coefficient Sig. (2-tailed)	.000	.000	.000	.184	.487
	N	979	937	917	979	972
FactorScore_5_ H2 <sub>c</sub>	Correlation	-.245**	-.191**	-.232**	.057	-.050
	Coefficient Sig. (2-tailed)	.000	.000	.000	.068	.112
	N	1030	970	952	1037	1020
FactorScore_6_ H3 <sub>a</sub>	Correlation	.152**	.220**	.205**	.122**	.146**
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	949	905	889	945	941
FactorScore_7_ H3 <sub>b</sub>	Correlation	.854**	.887**	.876**	.087**	.107**
	Coefficient Sig. (2-tailed)	.000	0.000	.000	.008	.001
	N	946	946	946	919	916

Table 279. Continued.

FactorScore_	Correlation	.032	.064*	.053	.101**	.103**
DepVariable_	Coefficient					
Disruption	Sig. (2-tailed)	.303	.046	.102	.001	.001
	N	1045	981	960	1053	1030

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).



Table 280. Full Correlation Matrix (Part VI)

Spearman's rho		FS_3_	FS_4_	FS_5_	FS_6_	FS_7_	FS_
		H2 <sub>a</sub>	H2 <sub>b</sub>	H2 <sub>c</sub>	H3 <sub>a</sub>	H3 <sub>b</sub>	DV
IV_LT_1 (Number of Generals)	Correlation	.138**	.072*	-.119**	.133**	.160**	.094**
	Coefficient						
	Sig. (2-tailed)	.000	.023	.000	.000	.000	.002
	N	1047	1008	1072	975	946	1095
IV_LT_2 (Commander's Intent)	Correlation	.127**	.080*	.062*	.126**	.089**	.075*
	Coefficient						
	Sig. (2-tailed)	.000	.012	.045	.000	.007	.014
	N	1014	981	1040	948	920	1056
IV_LT_3 (Re-evaluation Unit Goals)	Correlation	.106**	.012	.052	.111**	.056	.093**
	Coefficient						
	Sig. (2-tailed)	.001	.707	.095	.001	.091	.002
	N	1017	983	1044	952	924	1060
IV_LT_4 (Re-evaluation Priorities)	Correlation	.110**	.013	.050	.112**	.071*	.105**
	Coefficient						
	Sig. (2-tailed)	.000	.693	.106	.001	.031	.001
	N	1016	982	1044	952	923	1060
IV_LT_5 (Changes in OE)	Correlation	.096**	.084**	-.016	.162**	.110**	.075*
	Coefficient						
	Sig. (2-tailed)	.002	.008	.600	.000	.001	.013
	N	1043	1005	1068	973	943	1091
IV_LT_6 (Changes in Regulations)	Correlation	-.007	-.082*	-.008	.066*	-.034	.084**
	Coefficient						
	Sig. (2-tailed)	.831	.010	.789	.043	.300	.007
	N	1007	978	1031	949	922	1045
IV_LT_7 (Changes in Policies)	Correlation	.058	-.011	-.007	.130**	.060	.078*
	Coefficient						
	Sig. (2-tailed)	.066	.731	.817	.000	.066	.011
	N	1020	989	1045	956	930	1060
IV_LT_8 (Fluctuating Guidance)	Correlation	.317**	.250**	-.204**	.184**	.347**	.073*
	Coefficient						
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.017
	N	1022	997	1050	959	936	1063
IV_RBT_1 (Knowledge/Info Sharing)	Correlation	.738**	.397**	-.187**	.197**	.399**	.009
	Coefficient						
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.768
	N	1047	1005	1067	972	942	1090
IV_RBT_2 (Increase Collaboration)	Correlation	.819**	.387**	-.238**	.106**	.524**	.014
	Coefficient						
	Sig. (2-tailed)	.000	.000	.000	.001	.000	.648
	N	1047	986	1031	947	934	1050

Table 280. Continued.

IV_RBT_3 (Embrace Collaboration)	Correlation	.845**	.440**	-.277**	.137**	.377**	-.007
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.000	.824
	N	1047	1005	1068	971	942	1089
IV_RBT_4 (Prefer Status Quo)	Correlation	.306**	.742**	-.321**	.053	.130**	-.091**
	Coefficient Sig. (2-tailed)	.000	.000	.000	.096	.000	.003
	N	1045	1008	1069	971	945	1091
IV_RBT_5 (Mission Performance)	Correlation	.326**	.422**	-.223**	.144**	.446**	-.040
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.000	.201
	N	984	1008	999	927	910	1010
IV_RBT_6 (Adopt Mandated Change)	Correlation	.406**	.791**	-.261**	.075*	.272**	-.008
	Coefficient Sig. (2-tailed)	.000	.000	.000	.020	.000	.805
	N	1034	1008	1060	966	938	1078
IV_RBT_7 (Changes in Work)	Correlation	.010	-.122**	.196**	.115**	.041	.146**
	Coefficient Sig. (2-tailed)	.748	.000	.000	.000	.206	.000
	N	1032	999	1072	971	941	1078
IV_RBT_8 (Unwelcome Changes)	Correlation	.380**	.465**	-.800**	.140**	.253**	-.080**
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.000	.008
	N	1045	1006	1072	973	944	1091
IV_RBT_9 (Unnecessary Changes)	Correlation	-.029	-.118**	.725**	-.095**	-.133**	.075*
	Coefficient Sig. (2-tailed)	.353	.000	.000	.003	.000	.014
	N	1045	1007	1072	974	946	1092
IV_LAMC_1 (Loss of Manpower)	Correlation	.097**	.013	-.050	.889**	.135**	.129**
	Coefficient Sig. (2-tailed)	.002	.680	.117	0.000	.000	.000
	N	975	950	998	975	902	1008
IV_LAMC_2 (Loss of Funding)	Correlation	.112**	.043	-.051	.869**	.187**	.109**
	Coefficient Sig. (2-tailed)	.001	.188	.108	.000	.000	.001
	N	960	938	982	975	890	992
IV_LAMC_3 (Unwillingness to Adopt)	Correlation	.270**	.303**	-.294**	.579**	.275**	.007
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.000	.836
	N	976	954	1001	975	902	1009

Table 280. Continued.

IV_LAMC_4 (Encourage Feedback)	Correlation	.495**	.318**	-.245**	.152**	.854**	.032
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.000	.303
	N	1011	979	1030	949	946	1045
IV_LAMC_5 (Convey Feedback)	Correlation	.454**	.325**	-.191**	.220**	.887**	.064*
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	0.000	.046
	N	962	937	970	905	946	981
IV_LAMC_6 (Consider Feedback)	Correlation	.441**	.271**	-.232**	.205**	.876**	.053
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000	.000	.102
	N	940	917	952	889	946	960
FactorScore_1_ H1 <sub>a</sub>	Correlation	.134**	.043	.057	.122**	.087**	.101**
	Coefficient Sig. (2-tailed)	.000	.184	.068	.000	.008	.001
	N	1012	979	1037	945	919	1053
FactorScore_2_ H1 <sub>b</sub>	Correlation	.110**	.022	-.050	.146**	.107**	.103**
	Coefficient Sig. (2-tailed)	.001	.487	.112	.000	.001	.001
	N	995	972	1020	941	916	1030
FactorScore_3_ H2 <sub>a</sub>	Correlation	1.000	.494**	-.289**	.178**	.524**	.011
	Coefficient Sig. (2-tailed)		.000	.000	.000	.000	.712
	N	1047	983	1029	945	931	1047
FactorScore_4_ H2 <sub>b</sub>	Correlation	.494**	1.000	-.390**	.118**	.337**	-.056
	Coefficient Sig. (2-tailed)	.000		.000	.000	.000	.075
	N	983	1008	997	925	909	1008
FactorScore_5_ H2 <sub>c</sub>	Correlation	-.289**	-.390**	1.000	-.132**	-.251**	.110**
	Coefficient Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	1029	997	1072	968	939	1072
FactorScore_6_ H3 <sub>a</sub>	Correlation	.178**	.118**	-.132**	1.000	.228**	.103**
	Coefficient Sig. (2-tailed)	.000	.000	.000		.000	.001
	N	945	925	968	975	879	975
FactorScore_7_ H3 <sub>b</sub>	Correlation	.524**	.337**	-.251**	.228**	1.000	.064*
	Coefficient Sig. (2-tailed)	.000	.000	.000	.000		.047
	N	931	909	939	879	946	946

Table 280. Continued.

FactorScore_	Correlation	.011	-.056	.110**	.103**	.064*	1.000
DepVariable_	Coefficient						
Disruption	Sig. (2-tailed)	.712	.075	.000	.001	.047	
	N	1047	1008	1072	975	946	1095

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

**Table 281.** Correlation Matrix (Part I) – with Correlation Coefficient > 0.3

Strength of Association <sup>62</sup>	IV_ LT_1	IV_ LT_2	IV_ LT_3	IV_ LT_4	IV_ LT_5	IV_ LT_6
IV_LT_1 (Number of Generals)						
IV_LT_2 (Commander's Intent)			0.648	0.671		
IV_LT_3 (Re-evaluation Unit Goals)		0.648		0.813		
IV_LT_4 (Re-evaluation Priorities)		0.671	0.813			
IV_LT_5 (Changes in OE)						
IV_LT_6 (Changes in Regulations)						
IV_LT_7 (Changes in Policies)						0.725
IV_LT_8 (Fluctuating Guidance)						
IV_RBT_1 (Knowledge/Info Sharing)						
IV_RBT_2 (Increase Collaboration)						
IV_RBT_3 (Embrace Collaboration)						
IV_RBT_4 (Prefer Status Quo)						
IV_RBT_5 (Mission Performance)						
IV_RBT_6 (Adopt Mandated Change)						
IV_RBT_7 (Changes in Work)		0.313	0.354	0.327		

<sup>62</sup> Below information provides a general guideline (i.e., *strength of association*) for interpreting correlation coefficients (Laerd Statistics [Correlation Coefficient], Lund Research Ltd 2013):

- Small: 0.1 to 0.3 (absolute value) – values in this category have been excluded in this matrix
- Medium: 0.3 to 0.5 (absolute value)
- Large: 0.5 to 1.0 (absolute value)

Table 281. Continued.

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IV\_RBT\_8

(Unwelcome  
Changes)

---

IV\_RBT\_9

(Unnecessary  
Changes)

---

IV\_LAMC\_1

(Loss of  
Manpower)

---

IV\_LAMC\_2

(Loss of Funding)

---

IV\_LAMC\_3

(Unwillingness to  
Adopt)

---

IV\_LAMC\_4

(Encourage  
Feedback)

---

IV\_LAMC\_5

(Convey  
Feedback)

---

IV\_LAMC\_6

(Consider  
Feedback)

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**Table 282.** Correlation Matrix (Part II) – with Correlation Coefficient > 0.3

Strength of Association <sup>62</sup>	IV_ LT_7	IV_ LT_8	IV_ RBT_1	IV_ RBT_2	IV_ RBT_3	IV_ RBT_4
IV_LT_1 (Number of Generals)						
IV_LT_2 (Commander's Intent)						
IV_LT_3 (Re-evaluation Unit Goals)						
IV_LT_4 (Re-evaluation Priorities)						
IV_LT_5 (Changes in OE)						
IV_LT_6 (Changes in Regulations)	0.725					
IV_LT_7 (Changes in Policies)		0.365				
IV_LT_8 (Fluctuating Guidance)	0.365		0.305			
IV_RBT_1 (Knowledge/Info Sharing)		0.305		0.395	0.460	
IV_RBT_2 (Increase Collaboration)			0.395		0.583	
IV_RBT_3 (Embrace Collaboration)			0.460	0.583		
IV_RBT_4 (Prefer Status Quo)						
IV_RBT_5 (Mission Performance)				0.401		
IV_RBT_6 (Adopt Mandated Change)			0.337	0.309	0.362	0.320
IV_RBT_7 (Changes in Work)						
IV_RBT_8 (Unwelcome Changes)			0.324		0.351	0.425
IV_RBT_9 (Unnecessary Changes)						

Table 282. Continued.

IV_LAMC_1 (Loss of Manpower)				
IV_LAMC_2 (Loss of Funding)				
IV_LAMC_3 (Unwillingness to Adopt)				
IV_LAMC_4 (Encourage Feedback)	0.339	0.364	0.512	0.347
IV_LAMC_5 (Convey Feedback)		0.369	0.437	0.329
IV_LAMC_6 (Consider Feedback)	0.348	0.329	0.434	0.340



**Table 283.** Correlation Matrix (Part III) – with Correlation Coefficient > 0.3

Strength of Association <sup>62</sup>	IV_RBT_5	IV_RBT_6	IV_RBT_7	IV_RBT_8	IV_RBT_9
IV_LT_1 (Number of Generals)					
IV_LT_2 (Commander's Intent)			0.313		
IV_LT_3 (Re-evaluation Unit Goals)			0.354		
IV_LT_4 (Re-evaluation Priorities)			0.327		
IV_LT_5 (Changes in OE)					
IV_LT_6 (Changes in Regulations)					
IV_LT_7 (Changes in Policies)					
IV_LT_8 (Fluctuating Guidance)					
IV_RBT_1 (Knowledge/Info Sharing)		0.337		0.324	
IV_RBT_2 (Increase Collaboration)	0.401	0.309			
IV_RBT_3 (Embrace Collaboration)		0.362		0.351	
IV_RBT_4 (Prefer Status Quo)		0.320		0.425	
IV_RBT_5 (Mission Performance)					
IV_RBT_6 (Adopt Mandated Change)				0.354	
IV_RBT_7 (Changes in Work)					
IV_RBT_8 (Unwelcome Changes)		0.354			
IV_RBT_9 (Unnecessary Changes)					

Table 283. Continued.

IV_LAMC_1 (Loss of Manpower)		
IV_LAMC_2 (Loss of Funding)		
IV_LAMC_3 (Unwillingness to Adopt)		0.351
IV_LAMC_4 (Encourage Feedback)	0.435	
IV_LAMC_5 (Convey Feedback)	0.323	
IV_LAMC_6 (Consider Feedback)	0.443	

**Table 284.** Correlation Matrix (Part IV) – with Correlation Coefficient > 0.3

Strength of Association <sup>62</sup>	IV_LAMC_1	IV_LAMC_2	IV_LAMC_3	IV_LAMC_4	IV_LAMC_5	IV_LAMC_6
IV_LT_1 (Number of Generals)						
IV_LT_2 (Commander's Intent)						
IV_LT_3 (Re-evaluation Unit Goals)						
IV_LT_4 (Re-evaluation Priorities)						
IV_LT_5 (Changes in OE)						
IV_LT_6 (Changes in Regulations)						
IV_LT_7 (Changes in Policies)						
IV_LT_8 (Fluctuating Guidance)				0.339		0.348
IV_RBT_1 (Knowledge/Info Sharing)				0.364	0.369	0.329
IV_RBT_2 (Increase Collaboration)				0.512	0.437	0.434
IV_RBT_3 (Embrace Collaboration)				0.347	0.329	0.340
IV_RBT_4 (Prefer Status Quo)						
IV_RBT_5 (Mission Performance)				0.435	0.323	0.443
IV_RBT_6 (Adopt Mandated Change)						
IV_RBT_7 (Changes in Work)						
IV_RBT_8 (Unwelcome Changes)			0.351			
IV_RBT_9 (Unnecessary Changes)						

Table 284. Continued.

IV_LAMC_1 (Loss of Manpower)	0.709	0.335	
IV_LAMC_2 (Loss of Funding)	0.709		0.316
IV_LAMC_3 (Unwillingness to Adopt)	0.335	0.316	
IV_LAMC_4 (Encourage Feedback)			0.631 0.656
IV_LAMC_5 (Convey Feedback)			0.631 0.703
IV_LAMC_6 (Consider Feedback)			0.656 0.703

## APPENDIX N: SURVEY DATA (COMMENTS)

**Table 285.** Comments' Summary/Operational Definitions – Survey Question #30<sup>63, 64</sup>

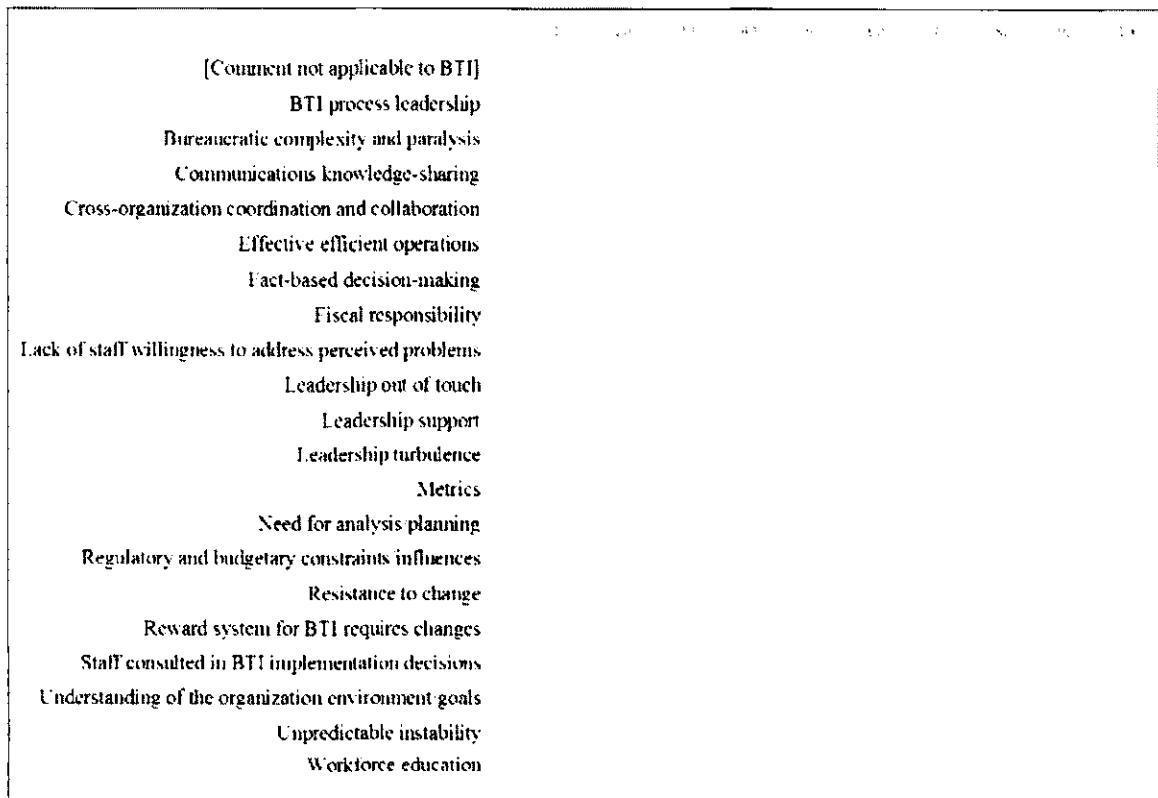
Category	Summary/Operational Definition
[Comment not applicable to BTI]	Respondent's comment had no bearing upon implementation of business transformation processes.
BTI process leadership	Mid-level leadership in business transformation process implementation appeared to be less than fully prepared to communicate and respond effectively to their BTI requirements.
Bureaucratic complexity and paralysis	Traditional bureaucratic decision-making processes, hierarchical authority arrangements, and stove-piped work processes were seen to impede implementation of BTIs.
Communications/knowledge-sharing	Nearly 20% of the comments focused on a lack of clear and adequate information about BTIs and what could be expected as a result of their implementation.
Cross-organization coordination and collaboration	Unity of effort in implementing BTIs was perceived to be problematic because of the lack of and need for required coordination and synchronization across the many units in TRADOC.
Effective/efficient operations	Proliferation of organizational units, duplication of efforts and redundant work processes – combined with the slow pace of decision-making and information-overload – result in ineffective and inefficient operations.
Fact-based decision-making	Uncertainties about the bases on which decisions are made regarding priorities, resource allocations, and organizational arrangements.
Fiscal responsibility	Concerns focused on the perceived inability of budgeting processes and fiscal decision-making to produce cost-effective execution of business processes and programs.
Lack of staff willingness to address perceived problems	Concerns were expressed that upward feedback from lower-level staff is met by reluctance among senior leaders to consider it.
Leadership out of touch	Headquarters' staff is not sufficiently aware of subordinate organizational needs and requirements.

<sup>63</sup> Summary/operational definitions were based on survey question #30: *If applicable, what could TRADOC do differently to improve the implementation of business transformation initiatives?*

<sup>64</sup> Evaluating the qualitative comments/feedback was conducted with the assistance of two TRADOC staff members (Chief Knowledge Office). Their professional expertise lies within the fields of both organizational/industrial psychology and operations research (OR).

Table 285. Continued.

Leadership support	TRADOC senior leadership was perceived to be supportive but not sufficiently involved in the implementation of BTIs.
Leadership turbulence	Change in leadership of the organization, to include CG to division chiefs, is too often accompanied by changes in operating priorities.
Metrics	Valid and reliable metrics facilitate improved processes, accountability, and the organization's ability to demonstrate return on investment.
Need for analysis/planning	Analysis of current processes to ensure identification of workflow process requirements, identification of needed value-added improvements as well as careful and well-communicated plans for implementation of BTIs.
Regulatory and budgetary constraints/influences	Referring to a range of BTIs, respondents expressed apprehension that less than effective resource allocation decision-making and budgetary constraints impede implementation of BTIs.
Resistance to change	TRADOC staff, particularly long-term staff, protect their <i>comfort zones</i> for reasons, to include familiar organizational arrangements, budgetary incentives, and concerns regarding the demands for learning new ways of working.
Reward system for BTI requires changes	Some staff members perceive innovative thinking and cost-saving efficiencies result in loss of budgets, resources, and other negative reinforcements.
Staff consulted in BTI implementation decisions	BTI implementation leaders need to obtain feedback from all personnel whose work processes and organizational relationships will be affected by changes.
Understanding of the organization/environment/goals	A failure to understand TRADOC's unique military mission often leads to efforts to impose BTIs structured in accordance with commercial sector requirements and purposes, leading many staff to resist BTI implementation.
Unpredictable instability	Organizations and personnel are in such a constant state of flux which, combined with budgetary uncertainties, leaves TRADOC always struggling to change to the next thing.
Workforce education	BTI leadership must educate the workforce to ensure they can see the reasons for transformation changes and can use the tools, techniques, and procedures required to implement and sustain the transformation.



**Figure 44. Histogram (Survey Comments)**

## APPENDIX O: VBA CODE (SUSPICIOUS PATTERN DETECTION)

Option Explicit

Public Sub IdentifyCarelessResponses()<sup>65</sup>

'Concept & code development by Tom Bock and Mark Hutchinson

'Date developed: 2013/10/21

'Date modified: 2013/10/24

'Declare variables

Dim rng As Range

Dim rngRow As Range

Dim vRowData As Variant

Dim oDicUnique As Object

Dim lngRow As Long, lngCol As Long, lngColOffset As Long

Dim strPattern As String

Dim vItem As Variant

Dim vGroupings As Variant

Dim vGroup As Variant

'Specify threshold sets such as:

'a) Sequences of four Likert scale values, repeated more than two times or

'b) Sequences of five Likert scale values, repeated more than once

vGroupings = Array(Array(4, 2), Array(5, 1))

Set oDicUnique = CreateObject("scripting.dictionary")

'Set number of columns (i.e., scan 24 independent variable questions)

Set rng = ActiveSheet.Range(ActiveSheet.Cells(2, 1),

ActiveSheet.Cells(ActiveSheet.Cells.SpecialCells

(xlCellTypeLastCell).Row, 24))

vRowData = rng.Value

For Each vGroup In vGroupings

For lngRow = LBound(vRowData, 1) To UBound(vRowData, 1)

For lngCol = LBound(vRowData, 2) To UBound(vRowData, 2) -

vGroup(0)

strPattern = vbNullString

lngColOffset = 0

Do

strPattern = strPattern & vRowData(lngRow,

lngCol + lngColOffset)

lngColOffset = lngColOffset + 1

Loop Until Len(strPattern) = vGroup(0)

---

<sup>65</sup> Lines starting with a single quote indicate comments.



```

        If oDicUnique.exists(strPattern) Then
            oDicUnique(strPattern) = oDicUnique(strPattern)+1
        Else
            oDicUnique.Add strPattern, 1
        End If
    Next
    For Each vItem In oDicUnique
        If oDicUnique(vItem) > vGroup(1) Then

            'Clear yellow highlights from previous execution
            rng.Rows(lngRow).Interior.Color = vbWhite

            'Highlight suspicious records in yellow
            rng.Rows(lngRow).Interior.Color = vbYellow

            'Print suspicious patterns to 'Immediate Window'
            Debug.Print "Found " & oDicUnique(vItem) & " : "
                & vItem & vbTab & " in row " &
                lngRow + rng.Row - 1

            Exit For
        End If
    Next
    oDicUnique.RemoveAll
Next
Next
End Sub

```

Function GetColorSuspicious(MyCell As Range)

```

    'Concept & code development by Tom Bock
    'Custom function which outputs the color value (e.g., yellow coded as "6")
    'If yellow is found (marking a suspicious record, a value of "6" will be displayed.
    'Apply conditional formatting to display warning messages

```

```

    Application.Volatile
    GetColorSuspicious = MyCell.Interior.ColorIndex

```

End Function

Private Sub Worksheet\_SelectionChange(ByVal Target As Range)

```

    'Add this function to an Excel worksheet (versus module)
    'It forces a refresh of the GetColorSuspicious() user-defined function
    Calculate

```

End Sub

## APPENDIX P: VALUE SET DISRUPTION SCORES

Table 286. Combinations of Possible Disruption Scores (Sorted by MRSD Factors)<sup>66</sup>

#	M	R	S	D	MRSD Product	Scaled MRSD (Score)	Scaled MRSD (%)
1	1	1	1	1	1	0.000	0.000
2	1	1	1	2	2	1.000	0.250
3	1	1	2	1	2	1.000	0.250
4	1	1	2	2	4	2.000	0.500
5	1	2	1	1	2	1.000	0.250
6	1	2	1	2	4	2.000	0.500
7	1	2	2	1	4	2.000	0.500
8	1	2	2	2	8	3.000	0.750
9	2	1	1	1	2	0.167	0.042
10	2	1	1	2	4	1.167	0.292
11	2	1	2	1	4	1.167	0.292
12	2	1	2	2	8	2.167	0.542
13	2	2	1	1	4	1.167	0.292
14	2	2	1	2	8	2.167	0.542
15	2	2	2	1	8	2.167	0.542
16	2	2	2	2	16	3.167	0.792
17	3	1	1	1	3	0.333	0.083
18	3	1	1	2	6	1.333	0.333
19	3	1	2	1	6	1.333	0.333
20	3	1	2	2	12	2.333	0.583
21	3	2	1	1	6	1.333	0.333
22	3	2	1	2	12	2.333	0.583
23	3	2	2	1	12	2.333	0.583
24	3	2	2	2	24	3.333	0.833
25	4	1	1	1	4	0.500	0.125
26	4	1	1	2	8	1.500	0.375
27	4	1	2	1	8	1.500	0.375
28	4	1	2	2	16	2.500	0.625
29	4	2	1	1	8	1.500	0.375
30	4	2	1	2	16	2.500	0.625
31	4	2	2	1	16	2.500	0.625

<sup>66</sup> While the *Modified* (M) rating factor uses a 7-point Likert scale, the remaining three rating factors [*Reprioritized*, *Suspended*, and *Discontinued* (RSD)] use a binary scale [1, 2] for indicating disruption. As each of the four rating factors have equal weight of 25%, it was necessary to normalize the MRSD factors. The utilized function for the scaling process is as follows:  $(((M-1)/6) + (R-1) + (S-1) + (D-1))$

For example, the value of "2.500" in row #30 of this table is derived as shown below:

$$\circ \quad [((4-1)/6) + (2-1) + (1-1) + (2-1)] = 2.500.$$

Given the proposed equal impact on business transformation, it is recommended to divide the *Scaled MRSD Score* by 4 in order to determine the overall % of level of disruption for any rated BTI or BTP.

$$\circ \quad (2.500 / 4) = 0.625$$

The data in Table 286 is sorted in ascending order by MRSD factors.

Table 286. Continued.

32	4	2	2	2	32	3.500	0.875
33	5	1	1	1	5	0.667	0.167
34	5	1	1	2	10	1.667	0.417
35	5	1	2	1	10	1.667	0.417
36	5	1	2	2	20	2.667	0.667
37	5	2	1	1	10	1.667	0.417
38	5	2	1	2	20	2.667	0.667
39	5	2	2	1	20	2.667	0.667
40	5	2	2	2	40	3.667	0.917
41	6	1	1	1	6	0.833	0.208
42	6	1	1	2	12	1.833	0.458
43	6	1	2	1	12	1.833	0.458
44	6	1	2	2	24	2.833	0.708
45	6	2	1	1	12	1.833	0.458
46	6	2	1	2	24	2.833	0.708
47	6	2	2	1	24	2.833	0.708
48	6	2	2	2	48	3.833	0.958
49	7	1	1	1	7	1.000	0.250
50	7	1	1	2	14	2.000	0.500
51	7	1	2	1	14	2.000	0.500
52	7	1	2	2	28	3.000	0.750
53	7	2	1	1	14	2.000	0.500
54	7	2	1	2	28	3.000	0.750
55	7	2	2	1	28	3.000	0.750
56	7	2	2	2	56	4.000	1.000

**Table 287.** Combinations of Possible Disruption Scores (Sorted by MRSD Product)<sup>67</sup>

#	N	R	S	D	MRSD Product	Scaled MRSD (Score)	Scaled MRSD (%)
1	1	1	1	1	1	0.000	0.000
2	1	1	1	2	2	1.000	0.250
3	1	1	2	1	2	1.000	0.250
4	1	2	1	1	2	1.000	0.250
5	2	1	1	1	2	0.167	0.042
6	3	1	1	1	3	0.333	0.083
7	1	1	2	2	4	2.000	0.500
8	1	2	1	2	4	2.000	0.500
9	1	2	2	1	4	2.000	0.500
10	2	1	1	2	4	1.167	0.292
11	2	1	2	1	4	1.167	0.292
12	2	2	1	1	4	1.167	0.292
13	4	1	1	1	4	0.500	0.125
14	5	1	1	1	5	0.667	0.167
15	3	1	1	2	6	1.333	0.333
16	3	1	2	1	6	1.333	0.333
17	3	2	1	1	6	1.333	0.333
18	6	1	1	1	6	0.833	0.208
19	7	1	1	1	7	1.000	0.250
20	1	2	2	2	8	3.000	0.750
21	2	1	2	2	8	2.167	0.542
22	2	2	1	2	8	2.167	0.542
23	2	2	2	1	8	2.167	0.542
24	4	1	1	2	8	1.500	0.375
25	4	1	2	1	8	1.500	0.375
26	4	2	1	1	8	1.500	0.375
27	5	1	1	2	10	1.667	0.417
28	5	1	2	1	10	1.667	0.417
29	5	2	1	1	10	1.667	0.417
30	3	1	2	2	12	2.333	0.583
31	3	2	1	2	12	2.333	0.583
32	3	2	2	1	12	2.333	0.583
33	6	1	1	2	12	1.833	0.458
34	6	1	2	1	12	1.833	0.458
35	6	2	1	1	12	1.833	0.458
36	7	1	1	2	14	2.000	0.500
37	7	1	2	1	14	2.000	0.500
38	7	2	1	1	14	2.000	0.500
39	2	2	2	2	16	3.167	0.792
40	4	1	2	2	16	2.500	0.625

<sup>67</sup> See footnote #66 for additional details. The data in Table 287 is sorted in ascending order by the MRSD product.

Table 287. Continued.

41	4	2	1	2	16	2.500	0.625
42	4	2	2	1	16	2.500	0.625
43	5	1	2	2	20	2.667	0.667
44	5	2	1	2	20	2.667	0.667
45	5	2	2	1	20	2.667	0.667
46	3	2	2	2	24	3.333	0.833
47	6	1	2	2	24	2.833	0.708
48	6	2	1	2	24	2.833	0.708
49	6	2	2	1	24	2.833	0.708
50	7	1	2	2	28	3.000	0.750
51	7	2	1	2	28	3.000	0.750
52	7	2	2	1	28	3.000	0.750
53	4	2	2	2	32	3.500	0.875
54	5	2	2	2	40	3.667	0.917
55	6	2	2	2	48	3.833	0.958
56	7	2	2	2	56	4.000	1.000

## APPENDIX Q: FUNCTIONS FOR COMPUTING DISRUPTION SCORES

**Table 288.** Summary of Functions

Function # <sup>68</sup>	Function Purpose
(1-1), (2-1), (3-1), (4-1), (5-1)	Computation of Disruption Scores (MRSD Factors)
(1-2), (2-2), (3-2), (4-2), (5-2)	Normalization of Disruption Scores (MRSD Factors)
(1-3), (2-3), (3-3), (4-3), (5-3)	Averaging Normalized Disruption Scores (MRSD Factors)

$$MS_{ik} = \frac{m_{ik} \sum_{i=1}^N p_{ik}}{\sum_{j=1}^N \sum_{l=1}^{NN} p_{jl}} \quad (1-1)$$

$$NMS_{ik} = \frac{[MS_{ik} - \text{Min}(MS_k)]}{[\text{Max}(MS_k) - \text{Min}(MS_k)]} \quad (1-2)$$

$$\bar{x} NMS_{ik} = \frac{\sum NMS_{ik}}{\sum_{ik}} \quad (1-3)$$

$$RS_{ik} = \frac{r_{ik} \sum_{i=1}^N p_{ik}}{\sum_{j=1}^N \sum_{l=1}^{NN} p_{jl}} \quad (2-1)$$

$$NRS_{ik} = \frac{[RS_{ik} - \text{Min}(RS_k)]}{[\text{Max}(RS_k) - \text{Min}(RS_k)]} \quad (2-2)$$

<sup>68</sup> Equations are repeated here for ease of viewing.

$$\bar{x} NRS_{ik} = \frac{\sum NRS_{ik}}{\sum_{ik}} \quad (2-3)$$

$$SS_{ik} = \frac{s_{ik} \sum_{i=1}^N p_{ik}}{\sum_{j=1}^N \sum_{l=1}^{MN} p_{jl}} \quad (3-1)$$

$$NSS_{ik} = \frac{[SS_{ik} - \text{Min}(SS_k)]}{[\text{Max}(SS_k) - \text{Min}(SS_k)]} \quad (3-2)$$

$$\bar{x} NSS_{ik} = \frac{\sum NSS_{ik}}{\sum_{ik}} \quad (3-3)$$

$$DS_{ik} = \frac{d_{ik} \sum_{i=1}^N p_{ik}}{\sum_{j=1}^N \sum_{l=1}^{MN} p_{jl}} \quad (4-1)$$

$$NDS_{ik} = \frac{[DS_{ik} - \text{Min}(DS_k)]}{[\text{Max}(DS_k) - \text{Min}(DS_k)]} \quad (4-2)$$

$$\bar{x} NDS_{ik} = \frac{\sum NDS_{ik}}{\sum_{ik}} \quad (4-3)$$

$$MRSDS_{ik} = \frac{mrsd_{ik} \sum_{i=1}^N p_{ik}}{\sum_{j=1}^N \sum_{l=1}^{NN} p_{jl}} \quad (5-1)$$

$$NMRSDS_{ik} = \frac{[MRSDS_{ik} - \text{Min}(MRSDS_k)]}{[\text{Max}(MRSDS_k) - \text{Min}(MRSDS_k)]} \quad (5-2)$$

$$\bar{x} NMRSDS_{ik} = \frac{\sum NMRSDS_{ik}}{\sum_{ik}} \quad (5-3)$$

**Table 289.** Variables (Computation of Disruption Score)

Category	Symbol	Definition
Modified (M), Reprioritized (R), Suspended (S), or Discontinued (D)	$MS_{ik}$	Modified Score (Participant <sub>i</sub> supporting Initiative <sub>k</sub> )
	$m_{ik}$	Modified Rating Factor (Participant <sub>i</sub> for Initiative <sub>k</sub> )
	$RS_{ik}$	Reprioritized Score (Participant <sub>i</sub> supporting Initiative <sub>k</sub> )
	$r_{ik}$	Reprioritized Rating Factor (Participant <sub>i</sub> for Initiative <sub>k</sub> )
	$SS_{ik}$	Suspended Score Participant <sub>i</sub> supporting Initiative <sub>k</sub> )
	$s_{ik}$	Suspended Rating Factor (Participant <sub>i</sub> for Initiative <sub>k</sub> )
	$DS_{ik}$	Discontinued Score (Participant <sub>i</sub> supporting Initiative <sub>k</sub> )
	$d_{ik}$	Discontinued Rating Factor (Participant <sub>i</sub> for Initiative <sub>k</sub> )
	$MRSDS_{ik}$	Total MRSD Score (Participant <sub>i</sub> supporting Initiative <sub>k</sub> )
	$mrsd_{ik}$	Total MRSD Rating Factor (Participant <sub>i</sub> for Initiative <sub>k</sub> )
MRSD Score	$p_{ik}$	Participant <sub>i</sub> supporting Initiative <sub>k</sub>
	$p_{il}$	Participant <sub>i</sub> supporting Initiative <sub>l</sub> (alias)
	$N$	Number of Participants
	$NN$	Number of Initiatives
	$i, j$	Participant subscript(s)
	$k, l$	Initiative subscript(s)
Normalization	$NMS_{ik}$	Normalized Modified Score
	$NRS_{ik}$	Normalized Reprioritized Score
	$NSS_{ik}$	Normalized Suspended Score
	$NDS_{ik}$	Normalized Discontinued Score
	$NMRSDS_{ik}$	Normalized Total MRSD Score (i.e. "Disruption Score")
	$Max$	Max Value
	$Min$	Min Value



**Table 290.** Disruption Scores (Modified, Reprioritized, Suspended, Discontinued)

Count ID	Response ID	$\bar{x}$ $NMS_{ik}$	$\bar{x}$ $NRS_{ik}$	$\bar{x}$ $NSS_{ik}$	$\bar{x}$ $NDS_{ik}$	$\bar{x}$ $NMRSDS_{ik}$
1	26009086	0.413	0.603	0.603	0.472	0.484
2	26009151	0.477	0.707	0.000	0.453	0.381
3	26009178	0.088	0.528	0.528	0.453	0.373
4	26009200	0.518	0.352	0.081	0.453	0.330
5	26009232	0.264	0.000	0.000	0.453	0.179
6	26019926	0.028	0.000	0.000	0.453	0.127
7	26020057	0.194	0.000	0.334	0.453	0.237
8	26586087	0.667	1.000	1.000	0.453	0.707
9	26586088	0.781	0.781	0.781	0.453	0.636
10	26586091	0.471	0.000	0.942	0.453	0.432
11	26586094	0.449	0.730	0.563	0.590	0.559
12	26586097	0.207	0.000	0.048	0.453	0.177
13	26586098	0.210	0.499	0.000	0.453	0.277
14	26586101	0.508	0.552	0.214	0.453	0.401
15	26586104	0.637	0.764	0.764	0.453	0.597
16	26586106	0.138	0.000	0.665	0.453	0.298
17	26586107	0.221	0.000	0.000	0.453	0.170
18	26586111	0.465	0.619	0.565	0.453	0.484
19	26586114	0.300	0.365	0.541	0.453	0.386
20	26586115	0.295	0.000	0.000	0.453	0.186
21	26586118	0.084	0.000	0.000	0.453	0.140
22	26586119	0.510	0.744	0.000	0.453	0.397
23	26586121	0.176	0.528	0.528	0.453	0.392
24	26586122	0.000	0.000	0.000	0.453	0.121
25	26586123	0.000	0.242	0.326	0.453	0.246
26	26586124	0.833	0.000	0.000	0.453	0.304
27	26586128	0.241	0.000	0.000	0.453	0.174
28	26586135	0.564	0.000	0.000	0.453	0.245
29	26586137	0.179	0.221	0.000	0.453	0.209
30	26586139	0.376	0.656	0.744	0.453	0.511
31	26586140	0.193	0.261	0.418	0.527	0.343
32	26586146	0.166	0.000	0.998	0.453	0.377
33	26586148	0.586	0.766	0.766	0.453	0.586
34	26586150	0.057	0.115	0.115	0.453	0.184
35	26586152	0.333	1.000	1.000	0.453	0.634
36	26586156	0.462	0.504	0.600	0.453	0.465
37	26586158	0.386	0.000	0.000	0.453	0.206
38	26586159	0.167	0.000	0.000	0.453	0.158
39	26586161	0.076	0.000	0.115	0.453	0.163
40	26586173	0.464	0.652	0.000	0.453	0.366
41	26586176	0.828	0.828	0.000	0.453	0.485
42	26586180	0.249	0.469	0.000	0.453	0.279
43	26586181	0.443	0.818	0.000	0.453	0.398
44	26586185	0.328	0.250	0.000	0.453	0.248
45	26586189	0.083	0.457	0.375	0.453	0.322
46	26586192	0.097	0.164	0.501	0.453	0.289

Table 290. Continued.

47	26586200	0.380	0.891	0.500	0.453	0.510
48	26586202	0.510	0.703	0.703	0.453	0.542
49	26586205	0.275	0.163	0.000	0.453	0.217
50	26586206	0.583	0.250	0.902	0.453	0.502
51	26586209	0.333	0.000	0.998	0.453	0.414
52	26586213	0.440	0.260	0.333	0.453	0.348
53	26586215	0.246	0.492	0.492	0.453	0.391
54	26586216	0.268	0.000	0.000	0.453	0.180
55	26586219	0.360	0.000	0.000	0.453	0.200
56	26586220	0.338	0.000	0.499	0.453	0.305
57	26586226	0.287	0.377	0.338	0.453	0.342
58	26586229	0.000	0.000	0.000	0.453	0.121
59	26586230	0.373	0.913	0.499	0.453	0.514
60	26586236	0.403	0.000	0.000	0.453	0.210
61	26586252	0.436	0.655	0.000	0.453	0.361
62	26586256	0.414	0.828	0.000	0.453	0.394
63	26586257	0.499	0.998	0.000	0.453	0.450
64	26586258	0.436	0.667	0.667	0.531	0.541
65	26586263	0.000	0.000	0.000	0.453	0.121
66	26586271	0.403	0.000	0.000	0.453	0.210
67	26586272	0.193	0.072	0.141	0.530	0.241
68	26586287	0.285	0.598	0.196	0.469	0.365
69	26586289	0.499	0.391	0.554	0.453	0.438
70	26586301	0.368	0.254	0.568	0.453	0.383
71	26586303	0.428	0.365	0.668	0.453	0.442
72	26586313	0.412	0.635	0.411	0.453	0.442
73	26586316	0.457	0.615	0.000	0.453	0.357
74	26586317	0.064	0.192	0.192	0.453	0.219
75	26586320	0.349	0.173	0.118	0.453	0.262
76	26586326	0.333	0.000	0.000	0.453	0.194
77	26586333	0.471	0.000	0.805	0.893	0.578
78	26586334	0.163	0.332	0.000	0.453	0.230
79	26586340	0.283	0.000	0.106	0.453	0.207
80	26586342	0.500	0.000	0.000	0.453	0.231
81	26586343	0.166	0.000	0.998	0.453	0.377
82	26586347	0.460	0.000	0.276	0.453	0.283
83	26586350	0.379	0.000	0.333	0.453	0.278
84	26586353	0.333	0.999	0.999	0.453	0.633
85	26586354	0.043	0.000	0.000	0.453	0.131
86	26586359	0.435	0.000	0.260	0.453	0.274
87	26586361	0.552	0.000	0.000	0.453	0.243
88	26586362	0.319	0.500	0.000	0.453	0.301
89	26586365	0.499	0.000	0.000	0.453	0.231
90	26586368	0.260	0.023	0.000	0.453	0.183
91	26586373	0.269	0.000	0.000	0.453	0.180
92	26586376	0.054	0.000	0.326	0.453	0.205
93	26586377	0.316	0.000	0.000	0.453	0.191
94	26586380	0.277	0.000	0.707	0.453	0.337
95	26586385	0.145	0.343	0.505	0.453	0.340

Table 290. Continued.

96	26586387	0.334	0.000	0.751	0.453	0.360
97	26586390	0.273	0.818	0.000	0.453	0.361
98	26586392	0.234	0.000	0.702	0.453	0.327
99	26586394	0.916	0.999	0.000	0.453	0.542
100	26586397	0.433	0.427	0.000	0.453	0.310
101	26586400	0.423	0.000	0.000	0.453	0.214
102	26586406	0.209	0.665	0.665	0.453	0.459
103	26586407	0.274	0.380	0.000	0.453	0.265
104	26586411	0.000	0.000	0.627	0.453	0.259
105	26586414	0.638	0.000	0.402	0.453	0.350
106	26586415	0.435	0.333	0.000	0.453	0.290
107	26586416	0.139	0.000	0.732	0.453	0.313
108	26586423	0.222	0.428	0.000	0.453	0.264
109	26586438	0.346	0.365	0.053	0.453	0.289
110	26586440	0.349	0.089	0.333	0.453	0.291
111	26586443	0.235	0.274	0.000	0.453	0.233
112	26586451	0.333	1.000	0.000	0.453	0.414
113	26586461	0.667	1.000	1.000	0.453	0.707
114	26586463	0.278	0.199	0.678	0.453	0.375
115	26586467	0.176	0.000	0.000	0.453	0.160
116	26586468	0.294	0.695	0.195	0.453	0.382
117	26586470	0.316	0.000	0.000	0.453	0.191
118	26586474	0.250	0.163	0.000	0.453	0.212
119	26586479	0.148	0.296	0.000	0.453	0.219
120	26586485	0.340	0.000	0.437	0.453	0.292
121	26586490	0.249	0.000	0.000	0.453	0.176
122	26586491	0.333	0.499	0.000	0.453	0.304
123	26586492	0.331	0.247	0.000	0.453	0.248
124	26586495	0.538	0.000	0.000	0.453	0.240
125	26586496	0.343	0.264	0.000	0.453	0.255
126	26586497	0.224	0.161	0.000	0.453	0.206
127	26586499	0.167	0.000	0.609	0.453	0.292
128	26586501	0.666	0.999	0.999	0.453	0.707
129	26586506	0.761	0.000	0.000	0.453	0.288
130	26586507	0.418	0.000	0.000	0.453	0.213
131	26586510	0.333	0.000	0.000	0.453	0.194
132	26586512	0.204	0.250	0.000	0.453	0.221
133	26586514	0.239	0.161	0.000	0.453	0.209
134	26586515	0.435	0.000	0.000	0.453	0.217
135	26586516	0.112	0.057	0.000	0.453	0.158
136	26586517	0.583	0.999	0.999	0.453	0.688
137	26586520	0.186	0.000	0.000	0.453	0.162
138	26586525	0.521	0.781	0.000	0.453	0.407
139	26586526	0.250	0.000	0.000	0.453	0.176
140	26586529	0.527	0.000	0.000	0.453	0.237
141	26586530	0.250	0.166	0.000	0.453	0.213
142	26586531	0.333	0.870	0.870	0.595	0.634
143	26586536	0.388	0.000	0.313	0.453	0.275
144	26586551	0.278	0.175	0.000	0.453	0.221

Table 290. Continued.

145	26586556	0.471	0.609	0.942	0.453	0.566
146	26586559	0.057	0.115	0.115	0.516	0.209
147	26586564	0.392	0.842	0.000	0.453	0.392
148	26586565	0.266	0.277	0.659	0.453	0.385
149	26586566	0.287	0.554	0.397	0.468	0.399
150	26586571	0.155	0.132	0.339	0.453	0.259
151	26586572	0.264	0.528	0.000	0.453	0.295
152	26586577	0.293	0.000	0.000	0.453	0.186
153	26586588	0.661	0.520	0.000	0.453	0.381
154	26586594	0.475	0.000	0.839	0.453	0.410
155	26586595	0.295	0.000	0.264	0.453	0.244
156	26586598	0.127	0.500	0.000	0.453	0.259
157	26586628	0.211	0.632	0.000	0.453	0.306
158	26586634	0.499	0.000	0.000	0.453	0.231
159	26586636	0.362	0.391	0.000	0.453	0.287
160	26586639	0.497	0.333	0.183	0.453	0.344
161	26586646	0.416	0.999	0.000	0.453	0.432
162	26586647	0.296	0.500	0.660	0.453	0.441
163	26586655	0.000	0.196	0.000	0.453	0.164
164	26586672	0.479	0.000	0.618	0.453	0.362
165	26586677	0.139	0.000	0.000	0.453	0.152
166	26586679	0.323	0.000	0.000	0.453	0.192
167	26586686	0.163	0.326	0.326	0.453	0.300
168	26586691	0.202	0.089	0.000	0.453	0.185
169	26586712	0.431	0.000	0.000	0.453	0.216
170	26586716	0.664	0.839	0.000	0.453	0.451
171	26586717	0.446	0.698	0.250	0.590	0.482
172	26586723	0.502	0.391	0.524	0.453	0.432
173	26586728	0.366	0.000	0.402	0.453	0.290
174	26586731	0.370	0.349	0.260	0.453	0.336
175	26586735	0.527	0.333	0.000	0.453	0.310
176	26586744	0.301	0.445	0.902	0.453	0.483
177	26586745	0.339	0.704	0.000	0.453	0.350
178	26586747	0.432	0.327	0.195	0.453	0.331
179	26586750	0.276	0.210	0.000	0.453	0.228
180	26586752	0.184	0.161	0.372	0.453	0.279
181	26586753	0.309	0.000	0.000	0.453	0.189
182	26586759	0.620	0.000	0.266	0.453	0.316
183	26586762	0.333	0.000	0.998	0.453	0.414
184	26586768	0.166	0.998	0.998	0.453	0.597
185	26586780	0.553	0.500	0.000	0.453	0.353
186	26586788	0.423	0.713	0.713	0.453	0.527
187	26586790	0.491	0.621	0.000	0.453	0.366
188	26586795	0.329	0.422	0.000	0.453	0.286
189	26586799	0.223	0.000	0.839	0.453	0.354
190	26586807	0.523	0.609	0.000	0.453	0.370
191	26586809	0.394	0.604	0.000	0.453	0.340
192	26586810	0.500	0.000	0.000	0.453	0.231
193	26586820	0.134	0.000	0.000	0.453	0.151

Table 290. Continued.

194	26586829	0.479	0.618	0.618	0.453	0.498
195	26586834	0.260	0.000	0.000	0.453	0.178
196	26586839	0.083	0.891	0.000	0.453	0.335
197	26586844	0.245	0.000	0.000	0.453	0.175
198	26586846	0.333	0.391	0.000	0.453	0.280
199	26586848	0.000	0.000	0.000	0.453	0.121
200	26586849	0.257	0.000	0.000	0.453	0.178
201	26586851	0.510	0.589	0.207	0.453	0.408
202	26586864	0.320	0.000	0.000	0.453	0.192
203	26586869	0.486	0.375	0.832	0.453	0.493
204	26586872	0.411	0.000	0.331	0.453	0.284
205	26586879	0.235	0.073	0.000	0.453	0.189
206	26586880	0.315	0.000	0.000	0.453	0.190
207	26586883	0.525	0.242	0.627	0.453	0.427
208	26586887	0.583	0.499	0.000	0.453	0.359
209	26586890	0.357	0.000	0.000	0.453	0.200
210	26586894	1.000	1.000	1.000	0.453	0.780
211	26586914	0.167	0.000	1.000	0.453	0.378
212	26586929	0.288	0.370	0.000	0.453	0.266
213	26586930	0.388	0.414	0.414	0.453	0.388
214	26586933	0.275	0.563	0.097	0.508	0.349
215	26586935	0.561	0.195	0.000	0.453	0.287
216	26586939	0.212	0.452	0.198	0.453	0.311
217	26586946	0.299	0.487	0.305	0.453	0.361
218	26586947	0.415	0.299	0.000	0.453	0.278
219	26586949	0.000	0.000	0.000	0.453	0.121
220	26586953	0.254	0.307	0.000	0.453	0.245
221	26586957	0.379	0.000	0.000	0.453	0.205
222	26586961	0.284	0.000	0.000	0.453	0.184
223	26586970	0.629	0.000	0.000	0.453	0.260
224	26586972	0.500	0.000	0.000	0.453	0.231
225	26586978	0.500	0.000	0.000	0.453	0.231
226	26586982	0.324	0.279	0.279	0.453	0.315
227	26586988	0.667	0.000	0.000	0.453	0.268
228	26586996	0.054	0.000	0.000	0.453	0.133
229	26586998	0.624	0.121	0.000	0.453	0.285
230	26587002	0.381	0.214	0.000	0.453	0.252
231	26587008	0.361	0.333	0.000	0.453	0.274
232	26587012	0.499	0.000	0.000	0.453	0.231
233	26587031	0.703	0.445	0.195	0.453	0.416
234	26587032	0.000	0.000	0.000	0.453	0.121
235	26587034	0.319	0.000	0.500	0.453	0.301
236	26587037	0.199	0.000	0.000	0.453	0.165
237	26587038	0.439	0.574	0.664	0.453	0.490
238	26587044	0.112	0.250	0.126	0.453	0.228
239	26587052	0.500	0.999	0.000	0.453	0.451
240	26587058	0.360	0.333	0.000	0.453	0.274
241	26587061	0.166	0.038	0.000	0.453	0.166
242	26587062	0.302	0.495	0.603	0.453	0.429

Table 290. Continued.

243	26587064	0.343	0.681	0.250	0.453	0.401
244	26587067	0.171	0.764	0.000	0.453	0.327
245	26587070	0.353	0.644	0.000	0.453	0.340
246	26587072	0.457	0.913	0.414	0.453	0.513
247	26587073	0.353	0.210	0.000	0.453	0.245
248	26587074	0.000	0.000	0.000	0.453	0.121
249	26587076	0.692	0.000	0.000	0.453	0.273
250	26587077	0.267	0.267	0.000	0.453	0.239
251	26587080	0.445	0.453	0.000	0.453	0.319
252	26587089	0.462	0.609	0.333	0.453	0.430
253	26587096	0.261	0.132	0.784	0.453	0.380
254	26587097	0.558	0.000	0.000	0.453	0.244
255	26587098	0.213	0.333	0.000	0.453	0.241
256	26587100	0.291	0.319	0.000	0.453	0.255
257	26587110	0.216	0.067	0.000	0.211	0.086
258	26587112	0.428	0.371	0.121	0.453	0.323
259	26587141	0.281	0.842	0.842	0.453	0.553
260	26587145	0.307	0.250	0.000	0.453	0.244
261	26587146	0.193	0.038	0.490	0.453	0.280
262	26587148	0.267	0.717	0.000	0.453	0.338
263	26587162	0.557	0.577	0.439	0.453	0.467
264	26587176	0.455	0.287	0.000	0.453	0.284
265	26587195	0.325	0.578	0.000	0.453	0.320
266	26587211	0.201	0.505	0.505	0.453	0.387
267	26587213	0.305	0.000	0.770	0.453	0.357
268	26587217	0.286	0.335	0.219	0.524	0.334
269	26587221	0.381	0.242	0.000	0.453	0.258
270	26587226	0.136	0.000	0.000	0.453	0.151
271	26587228	0.480	0.333	0.000	0.453	0.300
272	26587233	0.436	0.453	0.066	0.453	0.331
273	26587254	0.247	0.000	0.609	0.453	0.309
274	26587264	0.000	0.000	0.326	0.453	0.193
275	26587275	0.083	0.000	0.000	0.453	0.140
276	26587277	0.552	0.828	0.000	0.453	0.424
277	26587287	0.402	0.457	0.707	0.453	0.465
278	26587292	0.235	0.207	0.000	0.453	0.218
279	26587317	0.497	0.000	0.000	0.453	0.230
280	26587331	0.391	0.781	0.781	0.453	0.550
281	26587353	0.137	0.000	0.000	0.453	0.151
282	26587365	0.314	0.000	0.443	0.453	0.288
283	26587371	0.019	0.115	0.000	0.453	0.151
284	26587374	0.460	0.297	0.686	0.453	0.438
285	26587382	0.764	0.764	0.764	0.453	0.625
286	26587384	0.173	0.000	0.000	0.453	0.159
287	26587385	0.142	0.000	0.260	0.453	0.210
288	26587394	0.382	0.362	0.156	0.453	0.319
289	26587401	0.446	0.261	0.732	0.453	0.437
290	26587405	0.168	0.141	0.540	0.574	0.356
291	26587409	0.499	0.000	0.000	0.453	0.231

Table 290. Continued.

292	26587412	0.287	0.487	0.598	0.453	0.423
293	26587413	0.278	0.000	0.666	0.453	0.329
294	26587414	0.500	0.000	0.000	0.453	0.231
295	26587418	0.189	0.000	0.000	0.453	0.163
296	26587435	0.484	0.484	0.000	0.453	0.334
297	26587450	0.000	0.000	0.000	0.453	0.121
298	26587460	0.500	0.000	0.000	0.453	0.231
299	26587471	0.667	1.000	1.000	0.453	0.707
300	26587479	0.096	0.115	0.115	0.516	0.218
301	26587495	0.414	0.000	0.000	0.453	0.212
302	26587506	0.465	0.764	0.764	0.453	0.559
303	26587507	0.326	0.000	0.000	0.453	0.193
304	26587514	0.499	0.998	0.000	0.453	0.450
305	26587522	0.251	0.219	0.682	0.528	0.405
306	26587523	0.166	0.000	0.000	0.453	0.158
307	26587543	0.366	0.000	0.000	0.453	0.202
308	26587549	0.272	0.652	0.000	0.453	0.324
309	26587558	0.371	0.741	0.741	0.453	0.528
310	26587576	0.083	0.000	0.000	0.453	0.140
311	26587589	0.250	0.000	0.000	0.453	0.176
312	26587606	0.538	0.493	0.000	0.453	0.348
313	26587643	0.333	0.000	0.998	0.453	0.414
314	26587654	0.333	0.000	0.000	0.453	0.194
315	26587662	0.666	0.998	0.000	0.453	0.487
316	26587667	0.282	0.371	0.000	0.453	0.265
317	26587670	0.500	1.000	1.000	0.453	0.670
318	26587677	0.471	0.500	0.000	0.453	0.334
319	26587683	0.666	0.499	0.000	0.453	0.377
320	26587687	0.185	0.000	0.000	0.453	0.162
321	26587692	0.276	0.200	0.827	0.453	0.407
322	26587701	0.276	0.828	0.000	0.453	0.364
323	26587709	0.057	0.115	0.000	0.453	0.159
324	26587718	0.345	0.277	0.000	0.453	0.258
325	26587743	0.333	0.000	0.999	0.453	0.414
326	26587763	0.499	0.998	0.000	0.453	0.450
327	26587765	0.000	0.998	0.998	0.453	0.560
328	26587766	0.141	0.402	0.000	0.453	0.241
329	26587769	0.038	0.000	0.115	0.453	0.155
330	26587770	0.376	0.702	0.000	0.453	0.358
331	26587772	0.000	0.254	0.679	0.453	0.326
332	26587785	0.435	0.000	0.000	0.453	0.217
333	26587804	0.290	0.594	0.000	0.453	0.315
334	26587808	0.474	0.654	0.192	0.453	0.411
335	26587811	0.235	0.166	0.000	0.453	0.209
336	26587813	0.517	0.000	0.132	0.453	0.264
337	26587822	0.038	0.000	0.000	0.453	0.130
338	26587828	0.397	0.534	0.118	0.453	0.352
339	26587832	0.435	0.000	0.000	0.453	0.217
340	26587858	0.167	0.999	0.999	0.453	0.597

Table 290. Continued.

341	26587864	0.210	0.000	0.167	0.453	0.204
342	26587893	0.000	0.000	0.000	0.453	0.121
343	26587896	0.098	0.000	0.591	0.453	0.273
344	26587897	0.273	0.349	0.000	0.453	0.258
345	26587899	0.216	0.176	0.785	0.453	0.380
346	26587906	0.109	0.000	0.000	0.453	0.145
347	26587931	0.305	0.942	0.609	0.453	0.529
348	26587942	0.325	0.644	0.644	0.453	0.475
349	26587947	0.196	0.268	0.463	0.453	0.325
350	26587965	0.458	0.333	0.000	0.453	0.295
351	26587975	0.474	0.571	0.000	0.453	0.351
352	26587991	0.209	0.257	0.526	0.614	0.404
353	26588020	0.352	0.242	0.647	0.453	0.394
354	26588033	0.275	0.305	0.167	0.453	0.285
355	26588050	0.583	0.499	0.000	0.453	0.359
356	26588052	0.618	0.000	0.195	0.453	0.300
357	26588065	0.101	0.000	0.510	0.453	0.255
358	26588075	0.513	0.707	0.126	0.453	0.417
359	26588095	0.166	0.000	0.000	0.453	0.158
360	26588112	0.359	0.262	0.000	0.453	0.258
361	26588114	0.500	1.000	0.000	0.453	0.451
362	26588120	0.382	0.000	0.000	0.453	0.205
363	26588132	0.375	0.501	0.632	0.453	0.452
364	26588137	0.445	0.000	0.000	0.453	0.219
365	26588155	0.374	0.328	0.655	0.453	0.419
366	26588204	0.457	0.627	0.627	0.796	0.635
367	26588209	0.392	0.580	0.143	0.453	0.366
368	26588246	0.609	0.000	0.000	0.953	0.456
369	26588247	0.333	1.000	1.000	0.453	0.634
370	26588264	0.264	0.528	0.528	0.453	0.411
371	26588303	0.167	0.000	1.000	0.453	0.378
372	26588315	0.333	0.999	0.000	0.453	0.414
373	26588336	0.345	0.506	0.000	0.453	0.308
374	26588342	0.249	0.333	0.276	0.453	0.310
375	26588347	0.195	0.515	0.654	0.453	0.421
376	26588352	0.166	0.000	0.000	0.453	0.158
377	26588365	0.500	1.000	1.000	0.453	0.670
378	26588370	0.421	0.355	0.000	0.453	0.292
379	26588434	0.197	0.365	0.818	0.453	0.425
380	26588475	0.057	0.115	0.000	0.453	0.159
381	26588520	0.251	0.000	0.000	0.453	0.176
382	26588526	0.832	0.000	0.000	0.453	0.304
383	26588552	0.158	0.218	0.357	0.453	0.282
384	26588565	0.499	0.998	0.000	0.453	0.450
385	26588566	0.583	0.000	0.000	0.453	0.249
386	26588616	0.445	0.000	0.000	0.453	0.219
387	26588661	0.132	0.236	0.438	0.453	0.298
388	26588666	0.298	0.000	0.734	0.453	0.348
389	26588719	0.506	0.548	0.000	0.453	0.353



Table 290. Continued.

390	26588721	0.283	0.265	0.175	0.453	0.280
391	26588724	0.382	0.763	0.000	0.597	0.431
392	26588769	0.296	0.250	0.250	0.453	0.296
393	26588786	0.153	0.000	0.619	0.453	0.291
394	26588787	0.500	0.000	0.000	0.453	0.231
395	26588801	0.444	0.399	0.649	0.453	0.449
396	26588803	0.411	0.827	0.500	0.453	0.503
397	26588825	0.083	0.000	0.000	0.453	0.140
398	26588835	0.374	0.416	0.664	0.453	0.441
399	26588879	0.747	0.494	0.828	0.541	0.611
400	26588922	0.312	0.000	0.000	0.453	0.190
401	26588925	0.105	0.000	0.499	0.453	0.254
402	26588942	0.325	0.535	0.627	0.453	0.448
403	26588959	0.167	1.000	1.000	0.453	0.597
404	26588994	0.351	0.253	0.118	0.453	0.280
405	26588996	0.300	0.280	0.069	0.491	0.279
406	26589010	0.558	0.523	0.207	0.453	0.404
407	26589020	0.711	0.250	0.816	0.453	0.512
408	26589034	0.096	0.115	0.000	0.453	0.167
409	26589153	0.414	0.000	0.828	0.453	0.394
410	26589193	0.236	0.403	0.066	0.453	0.276
411	26589230	0.499	0.998	0.000	0.453	0.450
412	26589333	0.251	0.000	0.000	0.453	0.176
413	26589448	0.138	0.000	0.000	0.453	0.152
414	26589601	0.054	0.000	0.000	0.453	0.133
415	26589868	0.065	0.300	0.547	0.453	0.322
416	26589997	0.832	0.998	0.000	0.453	0.523
417	26590030	0.349	0.000	0.000	0.453	0.198
418	26590211	0.203	0.451	0.000	0.453	0.265
419	26590449	0.499	0.000	0.000	0.453	0.231
420	26590458	0.336	0.321	0.207	0.453	0.311
421	26590513	0.500	1.000	0.000	0.453	0.451
422	26590593	0.644	0.773	0.000	0.453	0.433
423	26590792	0.499	0.000	0.000	0.453	0.231
424	26590893	0.667	1.000	1.000	0.453	0.707
425	26590956	0.495	0.000	0.250	0.453	0.285
426	26591186	0.602	0.000	0.000	0.453	0.253
427	26591212	0.109	0.112	0.652	0.453	0.313
428	26591270	0.155	0.195	0.000	0.453	0.198
429	26591341	0.195	0.119	0.000	0.453	0.190
430	26591415	0.190	0.242	0.656	0.453	0.360
431	26591461	0.329	0.409	0.000	0.453	0.283
432	26591541	0.290	0.276	0.276	0.453	0.306
433	26591577	0.152	0.000	0.414	0.453	0.246
434	26591651	0.484	0.000	0.000	0.453	0.228
435	26591654	0.285	0.000	0.000	0.453	0.184
436	26591876	0.378	0.506	0.242	0.453	0.369
437	26591886	0.540	0.499	0.913	0.453	0.550
438	26591900	0.332	0.000	0.276	0.453	0.255

Table 290. Continued.

439	26591972	0.450	0.513	0.000	0.453	0.333
440	26592101	0.000	0.000	0.000	0.453	0.121
441	26592135	0.109	0.000	0.000	0.453	0.145
442	26592177	0.476	0.593	0.161	0.453	0.392
443	26592206	0.414	0.828	0.828	0.453	0.576
444	26592254	0.578	0.505	0.132	0.453	0.388
445	26592266	0.509	0.500	0.764	0.453	0.511
446	26592274	0.628	0.942	0.000	0.453	0.466
447	26592346	0.734	0.276	0.000	0.453	0.343
448	26592366	0.433	0.221	0.000	0.453	0.265
449	26592391	0.233	0.250	0.382	0.453	0.311
450	26592407	0.218	0.254	0.118	0.453	0.251
451	26592486	0.306	0.698	0.698	0.453	0.495
452	26592541	0.302	0.000	0.000	0.453	0.188
453	26592552	0.357	0.118	0.187	0.453	0.267
454	26592581	0.274	0.223	0.000	0.453	0.230
455	26592593	0.358	0.000	0.698	0.453	0.353
456	26592622	0.398	0.500	0.821	0.453	0.499
457	26592630	0.666	0.000	0.000	0.453	0.268
458	26592670	0.456	0.658	0.226	0.453	0.416
459	26592877	0.445	0.679	0.000	0.453	0.368
460	26592895	0.321	0.000	0.000	0.453	0.192
461	26592905	0.192	0.000	0.509	0.453	0.275
462	26592908	0.290	0.559	0.397	0.453	0.395
463	26592934	0.167	0.000	0.000	0.453	0.158
464	26593029	0.426	0.652	0.250	0.453	0.413
465	26593034	0.454	0.773	0.652	0.453	0.534
466	26593175	0.000	0.000	0.656	0.453	0.265
467	26593200	0.231	0.000	0.692	0.453	0.324
468	26593286	0.296	0.361	0.000	0.453	0.266
469	26593293	0.206	0.162	0.297	0.544	0.304
470	26593443	0.088	0.000	0.000	0.453	0.141
471	26593506	0.283	0.618	0.618	0.453	0.455
472	26593587	0.000	0.828	0.828	0.453	0.485
473	26593609	0.653	0.734	0.277	0.498	0.505
474	26593644	0.226	0.466	0.000	0.453	0.273
475	26593648	0.157	0.000	0.000	0.453	0.156
476	26593666	0.141	0.000	0.000	0.453	0.152
477	26593711	0.699	0.839	0.839	0.453	0.643
478	26593722	0.483	0.000	0.827	0.453	0.409
479	26593795	0.329	0.000	0.000	0.453	0.194
480	26593814	0.458	0.433	0.000	0.453	0.317
481	26593850	0.676	0.609	0.870	0.453	0.595
482	26593912	0.341	0.000	0.000	0.453	0.196
483	26593924	0.338	0.230	0.684	0.453	0.396
484	26594082	0.363	0.000	0.000	0.453	0.201
485	26594139	0.435	0.869	0.000	0.453	0.408
486	26594183	0.264	0.528	0.528	0.453	0.411
487	26594246	0.327	0.000	0.000	0.453	0.193

Table 290. Continued.

488	26594310	0.370	0.000	0.763	0.453	0.370
489	26594336	0.333	1.000	0.000	0.453	0.414
490	26594366	0.391	0.781	0.000	0.453	0.379
491	26594611	0.255	0.471	0.000	0.453	0.281
492	26594697	0.492	0.505	0.255	0.453	0.396
493	26594727	0.000	0.000	0.000	0.453	0.121
494	26594732	0.000	0.000	0.000	0.453	0.121
495	26594735	0.429	0.471	0.471	0.453	0.423
496	26594778	0.345	0.462	0.672	0.453	0.446
497	26594901	0.382	0.763	0.000	0.453	0.373
498	26595019	0.338	0.000	0.000	0.453	0.195
499	26595050	0.171	0.000	0.000	0.453	0.159
500	26595109	0.288	0.242	0.000	0.453	0.238
501	26595179	0.076	0.000	0.380	0.453	0.222
502	26595313	0.000	0.000	0.000	0.453	0.121
503	26595398	0.312	0.161	0.000	0.453	0.225
504	26595444	0.127	0.000	0.763	0.453	0.317
505	26595466	0.499	0.998	0.000	0.453	0.450
506	26595507	0.666	0.999	0.000	0.453	0.487
507	26595526	0.640	0.385	0.000	0.453	0.347
508	26595922	0.471	0.609	0.333	0.453	0.432
509	26595948	0.428	0.224	0.431	0.453	0.359
510	26596071	0.749	0.000	0.000	0.453	0.286
511	26597521	0.435	0.000	0.000	0.453	0.217
512	26598287	0.281	0.000	0.000	0.453	0.183
513	26599090	0.739	0.942	0.942	0.968	0.905
514	26599485	0.182	0.000	0.166	0.453	0.198
515	26599495	0.333	0.000	0.000	0.453	0.194
516	26599776	0.258	0.775	0.000	0.453	0.348
517	26600463	0.055	0.166	0.000	0.453	0.170
518	26601278	0.349	0.500	0.000	0.453	0.308
519	26601507	0.331	0.000	0.132	0.453	0.223
520	26602311	0.183	0.133	0.133	0.453	0.220
521	26603366	0.629	0.755	0.000	0.453	0.425
522	26604077	0.317	0.176	0.452	0.604	0.390
523	26604168	0.115	0.143	0.687	0.453	0.329
524	26606449	0.196	0.000	0.000	0.453	0.164
525	26607533	0.373	0.414	0.000	0.453	0.294
526	26608194	0.307	0.504	0.191	0.453	0.341
527	26608417	0.341	0.304	0.000	0.453	0.263
528	26609878	0.249	0.148	0.000	0.453	0.209
529	26609946	0.393	0.167	0.000	0.453	0.244
530	26610122	0.385	0.000	0.166	0.453	0.242
531	26610184	0.417	0.000	0.000	0.453	0.213
532	26610209	0.500	1.000	1.000	0.453	0.670
533	26610334	0.380	0.891	0.000	0.453	0.400
534	26610393	0.385	0.716	0.565	0.453	0.487
535	26610421	0.374	0.500	0.500	0.453	0.423
536	26610441	0.277	0.000	0.000	0.453	0.182

Table 290. Continued.

537	26610471	0.565	0.622	0.322	0.453	0.453
538	26610619	0.333	0.000	0.000	0.453	0.194
539	26610681	0.000	0.000	0.000	0.453	0.121
540	26610686	0.331	0.330	0.000	0.453	0.266
541	26610710	0.384	0.601	0.601	0.453	0.470
542	26610729	0.199	0.000	0.000	0.453	0.165
543	26610730	0.382	0.000	0.000	0.453	0.205
544	26610814	0.178	0.267	0.000	0.453	0.219
545	26610830	0.499	0.998	0.000	0.453	0.450
546	26610876	0.549	0.702	0.000	0.453	0.396
547	26610882	0.333	0.000	0.741	0.453	0.357
548	26610959	0.271	0.331	0.687	0.453	0.404
549	26610964	0.150	0.385	0.000	0.453	0.239
550	26610991	0.054	0.000	0.000	0.453	0.133
551	26611003	0.154	0.000	0.658	0.453	0.300
552	26611049	0.344	0.698	0.000	0.453	0.350
553	26611107	0.420	0.619	0.000	0.453	0.350
554	26611138	0.000	0.000	0.000	0.453	0.121
555	26611140	0.055	0.000	0.000	0.453	0.133
556	26611147	0.832	0.000	0.998	0.999	0.743
557	26611149	0.416	0.942	0.000	0.453	0.420
558	26611198	0.057	0.115	0.000	0.453	0.159
559	26611213	0.500	0.000	1.000	0.453	0.451
560	26611228	0.224	0.000	0.000	0.453	0.170
561	26611269	0.305	0.665	0.665	0.453	0.481
562	26611302	0.286	0.000	0.466	0.453	0.286
563	26611371	0.832	0.000	0.000	0.453	0.304
564	26611380	0.167	0.000	0.000	0.453	0.158
565	26611392	0.076	0.115	0.000	0.453	0.163
566	26611397	0.385	0.000	0.769	0.453	0.375
567	26611460	0.445	0.501	0.000	0.453	0.329
568	26611492	0.287	0.453	0.000	0.453	0.284
569	26611535	0.449	0.703	0.703	0.453	0.529
570	26611570	0.267	0.200	0.200	0.453	0.268
571	26611612	0.363	0.000	0.000	0.453	0.201
572	26611641	0.429	0.000	0.466	0.453	0.318
573	26611659	0.562	0.603	0.603	0.783	0.642
574	26611661	0.468	0.000	0.000	0.453	0.224
575	26611761	0.293	0.297	0.363	0.453	0.331
576	26611831	0.354	0.530	0.000	0.453	0.315
577	26611918	0.333	0.000	0.499	0.453	0.304
578	26611919	0.115	0.115	0.000	0.453	0.172
579	26611943	0.333	0.998	0.000	0.453	0.414
580	26611945	0.076	0.000	0.000	0.453	0.138
581	26611981	0.333	0.000	0.000	0.453	0.194
582	26611984	0.299	0.457	0.000	0.453	0.287
583	26612221	0.105	0.000	0.631	0.453	0.283
584	26612241	0.127	0.200	0.000	0.506	0.214
585	26612278	0.177	0.000	0.000	0.453	0.160

Table 290. Continued.

586	26612411	0.306	0.000	0.000	0.453	0.189
587	26612444	0.195	0.000	0.000	0.453	0.164
588	26612468	0.667	0.000	0.000	0.453	0.268
589	26612499	0.152	0.499	0.000	0.453	0.264
590	26612548	0.329	0.503	0.334	0.453	0.377
591	26612666	0.463	0.927	0.000	0.453	0.427
592	26612682	0.832	0.998	0.998	0.453	0.743
593	26612689	0.678	0.000	0.414	0.453	0.361
594	26612716	0.115	0.000	0.000	0.453	0.146
595	26612820	0.320	0.277	0.000	0.453	0.252
596	26612829	0.279	0.038	0.000	0.453	0.191
597	26612877	0.329	0.598	0.000	0.453	0.325
598	26612920	0.637	0.000	0.000	0.453	0.261
599	26612946	0.250	0.000	0.499	0.453	0.286
600	26613099	0.167	0.000	0.000	0.453	0.158
601	26613112	0.527	0.784	0.784	0.453	0.582
602	26613233	0.339	0.000	0.000	0.453	0.196
603	26613261	0.042	0.000	0.000	0.453	0.130
604	26613312	0.164	0.224	0.063	0.453	0.220
605	26613344	0.284	0.000	0.000	0.453	0.184
606	26613446	0.666	0.998	0.998	0.453	0.706
607	26613581	0.256	0.463	0.000	0.453	0.279
608	26613610	0.285	0.126	0.000	0.453	0.211
609	26613612	0.519	0.593	0.666	0.453	0.512
610	26613644	0.366	0.773	0.371	0.453	0.453
611	26613656	0.282	0.000	0.000	0.453	0.183
612	26613717	0.438	0.000	0.000	0.453	0.218
613	26613725	0.243	0.000	0.000	0.453	0.175
614	26613813	0.336	0.414	0.000	0.453	0.286
615	26613818	0.122	0.109	0.000	0.453	0.172
616	26613837	0.167	1.000	1.000	0.453	0.597
617	26613859	0.346	0.785	0.000	0.453	0.370
618	26613936	0.057	0.115	0.000	0.453	0.159
619	26614023	0.145	0.000	0.000	0.453	0.153
620	26614155	0.166	0.000	0.000	0.453	0.158
621	26614304	0.380	0.462	0.662	0.453	0.452
622	26614418	0.416	0.942	0.000	0.453	0.420
623	26614421	0.540	0.640	0.000	0.453	0.381
624	26614462	0.091	0.369	0.000	0.453	0.222
625	26614486	0.666	0.000	0.000	0.453	0.268
626	26614622	0.477	0.625	0.000	0.453	0.364
627	26614666	0.280	0.333	0.000	0.453	0.256
628	26614938	0.166	0.998	0.998	0.453	0.597
629	26615003	0.446	0.000	0.000	0.453	0.219
630	26615135	0.333	0.000	1.000	0.453	0.414
631	26615187	0.352	0.771	0.166	0.453	0.404
632	26615240	0.148	0.000	0.000	0.453	0.154
633	26615263	0.000	0.000	0.000	0.453	0.121
634	26615341	0.394	0.556	0.000	0.453	0.330

Table 290. Continued.

635	26615363	0.441	0.000	0.000	0.453	0.218
636	26615376	0.411	0.000	0.000	0.453	0.212
637	26615377	0.416	0.999	0.000	0.453	0.432
638	26615470	0.269	0.260	0.260	0.453	0.295
639	26615740	0.441	0.000	0.771	0.453	0.387
640	26615787	0.405	0.200	0.000	0.453	0.254
641	26615809	0.307	0.268	0.000	0.453	0.248
642	26616170	0.154	0.000	0.000	0.453	0.155
643	26617299	0.216	0.000	0.000	0.453	0.169
644	26619043	0.839	0.707	0.000	0.453	0.461
645	26619289	0.385	0.000	0.414	0.453	0.297
646	26619493	0.435	0.333	0.000	0.453	0.290
647	26619539	0.533	0.000	0.559	0.453	0.361
648	26619723	0.265	0.277	0.733	0.453	0.401
649	26619825	0.328	0.656	0.656	0.453	0.482
650	26619859	0.245	0.000	0.516	0.453	0.288
651	26620072	0.574	0.000	0.000	0.635	0.321
652	26620288	0.499	0.000	0.998	0.453	0.450
653	26620546	0.328	0.256	0.000	0.453	0.250
654	26620670	0.457	0.000	0.914	0.453	0.422
655	26620768	0.000	0.000	0.000	0.453	0.121
656	26620930	0.084	0.000	0.000	0.453	0.140
657	26620931	0.148	0.000	0.000	0.453	0.154
658	26621481	0.118	0.832	0.832	0.453	0.513
659	26622370	0.191	0.280	0.537	0.453	0.343
660	26622473	0.391	0.781	0.000	0.453	0.379
661	26622587	0.180	0.000	0.698	0.453	0.314
662	26623005	0.277	0.500	0.663	0.542	0.473
663	26623024	0.299	0.227	0.085	0.453	0.255
664	26623352	0.240	0.000	0.000	0.453	0.174
665	26623365	0.558	0.590	0.000	0.453	0.374
666	26623369	0.499	0.998	0.998	0.453	0.670
667	26624056	0.428	0.646	0.000	0.453	0.357
668	26624183	0.264	0.331	0.000	0.453	0.252
669	26624194	0.583	0.000	0.000	0.453	0.249
670	26624217	0.526	0.000	0.000	0.453	0.237
671	26624458	0.044	0.264	0.000	0.453	0.189
672	26625957	0.360	0.000	0.000	0.453	0.200
673	26626037	0.407	0.391	0.000	0.453	0.296
674	26626291	0.517	0.599	0.000	0.453	0.366
675	26626704	0.166	0.000	0.998	0.453	0.377
676	26626916	0.552	0.000	0.000	0.453	0.243
677	26626949	0.293	0.508	0.588	0.453	0.426
678	26627382	0.450	0.650	0.400	0.453	0.451
679	26627506	0.333	0.000	0.000	0.453	0.194
680	26627791	0.247	0.161	0.333	0.453	0.284
681	26627976	0.414	0.828	0.000	0.453	0.394
682	26630001	0.245	0.430	0.000	0.453	0.269
683	26631734	0.409	0.457	0.000	0.453	0.312

Table 290. Continued.

684	26634139	0.000	0.000	0.000	0.453	0.121
685	26634491	0.287	0.595	0.413	0.778	0.536
686	26634801	0.313	0.354	0.200	0.453	0.312
687	26635596	0.540	0.499	0.913	0.453	0.550
688	26636916	0.202	0.109	0.501	0.453	0.299
689	26636919	0.761	0.000	0.000	0.453	0.288
690	26636983	0.501	0.000	0.251	0.453	0.286
691	26637642	0.260	0.000	0.000	0.453	0.178
692	26637811	0.301	0.000	0.000	0.453	0.187
693	26637925	0.044	0.267	0.000	0.453	0.190
694	26645130	0.264	0.000	0.000	0.453	0.179
695	26645317	0.278	0.593	0.333	0.453	0.386
696	26645510	0.297	0.000	0.000	0.453	0.186
697	26645675	0.318	0.192	0.000	0.453	0.233
698	26645861	0.428	0.508	0.417	0.453	0.418
699	26646002	0.409	0.000	0.000	0.453	0.211
700	26646441	0.533	0.766	0.000	0.453	0.407
701	26646568	0.114	0.000	0.000	0.453	0.146
702	26646860	0.319	0.000	0.609	0.453	0.325
703	26647536	0.761	0.000	0.000	0.453	0.288
704	26648218	0.386	0.047	0.000	0.453	0.216
705	26649272	0.583	0.000	0.000	0.453	0.249
706	26649525	0.339	0.414	0.264	0.453	0.345
707	26650671	0.334	0.768	0.768	0.453	0.532
708	26656520	0.221	0.261	0.383	0.453	0.311
709	26661816	0.167	0.000	0.000	0.453	0.158
710	26661938	0.195	0.000	0.000	0.453	0.164
711	26662072	0.076	0.115	0.000	0.453	0.163
712	26662132	0.000	0.000	0.000	0.453	0.121
713	26665920	0.350	0.593	0.000	0.453	0.329
714	26666033	0.275	0.000	0.000	0.453	0.182
715	26666173	0.150	0.195	0.902	0.453	0.395
716	26666284	0.421	0.107	0.143	0.453	0.269
717	26666567	0.239	0.053	0.591	0.667	0.401
718	26667215	0.457	0.499	0.000	0.453	0.331
719	26667216	0.150	0.207	0.000	0.453	0.200
720	26667220	0.477	0.000	0.000	0.453	0.226
721	26667227	0.500	1.000	1.000	0.453	0.670
722	26667229	0.307	0.000	0.000	0.453	0.189
723	26667232	0.314	0.000	0.676	0.453	0.339
724	26667233	0.422	0.695	0.625	0.453	0.504
725	26667235	0.613	0.000	0.000	0.453	0.256
726	26667237	0.327	0.591	0.000	0.453	0.323
727	26667242	0.219	0.656	0.656	0.453	0.458
728	26667247	0.167	1.000	0.000	0.453	0.378
729	26667249	0.506	0.506	0.000	0.453	0.344
730	26667255	0.232	0.000	0.000	0.453	0.172
731	26667261	0.191	0.000	0.000	0.453	0.163
732	26667264	0.575	0.890	0.890	0.726	0.748

Table 290. Continued.

733	26667265	0.450	0.000	0.000	0.453	0.220
734	26667281	0.131	0.000	0.000	0.453	0.150
735	26667285	0.246	0.665	0.665	0.453	0.468
736	26667286	0.015	0.000	0.365	0.453	0.205
737	26667287	0.496	0.333	0.000	0.453	0.303
738	26667290	0.239	0.000	0.000	0.453	0.174
739	26667291	0.311	0.000	0.000	0.453	0.189
740	26667301	0.496	0.322	0.166	0.453	0.337
741	26667302	0.509	0.500	0.000	0.453	0.343
742	26667313	0.315	0.333	0.000	0.453	0.264
743	26667327	0.354	0.000	0.000	0.453	0.199
744	26667330	0.364	0.112	0.227	0.453	0.276
745	26667331	0.000	0.000	0.000	0.453	0.121
746	26667332	0.365	0.707	0.000	0.453	0.357
747	26667336	0.288	0.192	0.000	0.453	0.227
748	26667339	0.248	0.453	0.718	0.453	0.433
749	26667344	0.280	0.000	0.000	0.453	0.183
750	26667350	0.307	0.388	0.000	0.453	0.274
751	26667362	0.268	0.805	0.805	0.453	0.534
752	26667371	0.666	0.998	0.000	0.453	0.487
753	26667375	0.134	0.000	0.000	0.453	0.151
754	26667381	0.500	0.000	0.000	0.453	0.231
755	26667395	0.157	0.000	0.000	0.453	0.156
756	26667399	0.499	0.998	0.000	0.453	0.450
757	26667403	0.654	0.785	0.276	0.453	0.498
758	26667404	0.478	0.356	0.166	0.453	0.341
759	26667406	0.223	0.000	0.000	0.453	0.170
760	26667407	0.138	0.000	0.000	0.453	0.152
761	26667410	0.832	0.000	0.000	0.453	0.304
762	26667415	0.278	0.000	0.000	0.453	0.182
763	26667416	0.416	0.999	0.999	0.453	0.652
764	26667417	0.228	0.195	0.126	0.453	0.242
765	26667424	0.373	0.414	0.414	0.453	0.385
766	26667427	0.211	0.000	0.000	0.453	0.168
767	26667440	0.333	0.000	0.000	0.453	0.194
768	26667441	0.336	0.135	0.589	0.684	0.447
769	26667449	0.314	0.000	0.000	0.453	0.190
770	26667455	0.239	0.000	0.000	0.453	0.174
771	26667456	0.167	0.499	0.000	0.453	0.268
772	26667461	0.350	0.184	0.000	0.453	0.239
773	26667462	0.605	0.707	0.500	0.453	0.519
774	26667472	0.206	0.254	0.383	0.453	0.307
775	26667478	0.366	0.375	0.000	0.453	0.284
776	26667481	0.172	0.651	0.000	0.453	0.302
777	26667489	0.140	0.224	0.313	0.488	0.284
778	26667491	0.178	0.000	0.636	0.453	0.300
779	26667504	0.211	0.500	0.764	0.453	0.445
780	26667508	0.541	0.698	0.536	0.453	0.511
781	26667531	0.582	0.609	0.276	0.453	0.444



Table 290. Continued.

782	26667540	0.359	0.000	0.827	0.453	0.382
783	26667541	0.182	0.547	0.000	0.453	0.281
784	26667549	0.318	0.635	0.222	0.453	0.379
785	26667550	0.408	0.167	0.000	0.453	0.248
786	26667553	0.333	1.000	0.000	0.453	0.414
787	26667560	0.420	0.000	0.000	0.453	0.213
788	26667568	0.234	0.000	0.036	0.453	0.181
789	26667569	0.299	0.422	0.337	0.453	0.354
790	26667571	0.499	0.000	0.000	0.453	0.231
791	26667582	0.152	0.000	0.000	0.453	0.155
792	26667584	0.321	0.161	0.000	0.453	0.227
793	26667592	0.333	0.000	0.000	0.453	0.194
794	26667598	0.335	0.000	0.000	0.453	0.195
795	26667599	0.268	0.666	0.000	0.453	0.327
796	26667605	0.248	0.262	0.684	0.453	0.384
797	26667630	0.508	0.219	0.375	0.629	0.434
798	26667633	0.413	0.250	0.000	0.453	0.267
799	26667635	0.237	0.000	0.641	0.453	0.314
800	26667639	0.333	0.000	0.000	0.453	0.194
801	26667642	0.504	0.493	0.614	0.453	0.475
802	26667646	0.200	0.262	0.000	0.453	0.223
803	26667647	0.414	0.828	0.828	0.453	0.576
804	26667659	0.682	0.000	0.333	0.453	0.344
805	26667666	0.321	0.000	0.000	0.453	0.192
806	26667668	0.832	0.000	0.000	0.453	0.304
807	26667669	0.297	0.000	0.000	0.453	0.187
808	26667670	0.510	0.839	0.000	0.453	0.418
809	26667678	0.297	0.000	0.000	0.453	0.186
810	26667681	0.610	0.777	0.777	0.696	0.694
811	26667682	0.333	0.000	1.000	0.453	0.414
812	26667683	0.166	0.998	0.000	0.453	0.377
813	26667684	0.278	0.761	0.167	0.453	0.386
814	26667702	0.193	0.662	0.763	0.453	0.477
815	26667704	0.273	0.184	0.175	0.453	0.260
816	26667715	0.122	0.000	0.000	0.453	0.148
817	26667719	0.457	0.000	0.000	0.453	0.222
818	26667720	0.535	0.565	0.704	0.453	0.518
819	26667726	0.000	0.000	0.000	0.453	0.121
820	26667728	0.226	0.000	0.902	0.453	0.369
821	26667735	0.205	0.000	0.763	0.453	0.334
822	26667744	0.250	0.000	0.000	0.453	0.176
823	26667745	0.485	0.156	0.000	0.453	0.262
824	26667762	0.332	0.000	0.664	0.453	0.340
825	26667768	0.477	0.356	0.000	0.453	0.304
826	26667774	0.423	0.609	0.609	0.453	0.482
827	26667785	0.270	0.176	0.000	0.453	0.219
828	26667813	0.333	0.000	0.000	0.453	0.194
829	26667814	0.345	0.254	0.166	0.544	0.326
830	26667820	0.338	0.373	0.402	0.453	0.366

Table 290. Continued.

831	26667824	0.338	0.400	0.156	0.453	0.318
832	26667832	0.693	0.457	0.832	0.658	0.639
833	26667838	0.333	1.000	0.000	0.453	0.414
834	26667843	0.489	0.744	0.000	0.453	0.392
835	26667852	0.421	0.000	0.000	0.453	0.214
836	26667859	0.067	0.000	0.000	0.453	0.136
837	26667864	0.667	0.000	0.000	0.453	0.268
838	26667883	0.347	0.427	0.262	0.453	0.349
839	26667893	0.596	0.585	0.587	0.552	0.549
840	26667906	0.101	0.000	0.106	0.453	0.167
841	26667911	0.390	0.427	0.728	0.453	0.461
842	26667919	0.312	0.154	0.554	0.453	0.345
843	26667923	0.509	0.444	0.000	0.453	0.331
844	26667928	0.580	0.609	0.333	0.635	0.529
845	26667936	0.277	0.399	0.250	0.509	0.347
846	26667943	0.407	0.284	0.181	0.453	0.313
847	26667952	0.259	0.000	0.000	0.453	0.178
848	26667958	0.676	0.247	0.000	0.453	0.324
849	26667968	0.292	0.463	0.288	0.453	0.351
850	26667970	0.280	0.027	0.000	0.453	0.189
851	26667973	0.279	0.000	0.000	0.453	0.182
852	26667976	0.193	0.435	0.435	0.453	0.355
853	26667981	0.451	0.000	0.195	0.453	0.263
854	26668014	0.426	0.764	0.764	0.453	0.551
855	26668017	0.429	0.818	0.818	0.453	0.575
856	26668021	0.064	0.000	0.192	0.453	0.177
857	26668024	0.460	0.000	0.000	0.453	0.222
858	26668035	0.168	0.200	0.161	0.453	0.237
859	26668037	0.394	0.417	0.467	0.453	0.402
860	26668039	0.251	0.502	0.502	0.728	0.507
861	26668042	0.326	0.414	0.414	0.566	0.420
862	26668044	0.265	0.773	0.773	0.519	0.546
863	26668048	0.612	0.566	0.566	0.453	0.505
864	26668051	0.457	0.914	0.000	0.453	0.422
865	26668056	0.500	1.000	1.000	0.453	0.670
866	26668062	0.436	0.656	0.556	0.757	0.606
867	26668063	0.300	0.000	0.000	0.453	0.187
868	26668080	0.152	0.000	0.000	0.453	0.155
869	26668113	0.343	0.686	0.387	0.453	0.432
870	26668119	0.352	0.457	0.457	0.453	0.399
871	26668155	0.286	0.305	0.620	0.453	0.387
872	26668159	0.351	0.000	0.703	0.453	0.353
873	26668195	0.308	0.000	0.000	0.453	0.189
874	26668210	0.665	0.000	0.333	0.453	0.341
875	26668215	0.250	0.435	0.000	0.453	0.272
876	26668236	0.055	0.000	0.333	0.453	0.207
877	26668240	0.238	0.187	0.143	0.453	0.246
878	26668244	0.043	0.000	0.542	0.453	0.250
879	26668245	0.348	0.000	0.000	0.453	0.198

Table 290. Continued.

880	26668265	0.333	0.999	0.000	0.453	0.414
881	26668278	0.299	0.000	0.764	0.453	0.355
882	26668284	0.480	0.587	0.000	0.453	0.356
883	26668290	0.353	0.000	0.000	0.453	0.199
884	26668298	0.503	0.000	0.000	0.453	0.232
885	26668305	0.657	0.000	0.000	0.453	0.266
886	26668308	0.341	0.000	0.176	0.453	0.235
887	26668335	0.552	0.828	0.000	0.453	0.424
888	26668336	0.457	0.913	0.913	0.453	0.623
889	26668356	0.364	0.255	0.199	0.570	0.348
890	26668357	0.305	0.000	0.914	0.453	0.389
891	26668363	0.333	0.500	0.000	0.453	0.304
892	26668388	0.323	0.000	0.000	0.453	0.192
893	26668394	0.231	0.457	0.000	0.453	0.272
894	26668397	0.359	0.666	0.000	0.453	0.346
895	26668399	0.304	0.000	0.000	0.453	0.188
896	26668402	0.111	0.509	0.000	0.453	0.258
897	26668413	0.468	0.000	0.000	0.453	0.224
898	26668418	0.182	0.000	0.000	0.453	0.161
899	26668426	0.217	0.326	0.000	0.453	0.241
900	26668433	0.334	0.181	0.403	0.605	0.384
901	26668457	0.256	0.579	0.336	0.453	0.379
902	26668502	0.439	0.000	0.000	0.453	0.218
903	26668513	0.585	0.666	0.333	0.453	0.469
904	26668528	0.477	0.509	0.842	0.453	0.523
905	26668529	0.998	0.998	0.998	0.453	0.779
906	26668549	0.127	0.000	0.000	0.453	0.149
907	26668572	0.500	0.000	0.000	0.453	0.231
908	26668579	0.666	0.000	0.000	0.453	0.268
909	26668592	0.428	0.000	0.500	0.453	0.325
910	26668612	0.377	0.462	0.000	0.453	0.306
911	26668627	0.392	0.391	0.391	0.453	0.379
912	26668639	0.421	0.130	0.000	0.453	0.242
913	26668643	0.211	0.000	0.000	0.453	0.168
914	26668652	0.832	0.998	0.000	0.453	0.523
915	26668655	0.384	0.356	0.000	0.453	0.284
916	26668661	0.250	0.000	0.000	0.453	0.176
917	26668669	0.549	0.500	0.000	0.453	0.352
918	26668672	0.225	0.000	0.842	0.453	0.356
919	26668741	0.167	0.057	0.471	0.453	0.274
920	26668745	0.152	0.000	0.914	0.453	0.356
921	26668755	0.416	0.609	0.333	0.453	0.419
922	26668843	0.088	0.528	0.000	0.453	0.257
923	26668864	0.176	0.260	0.000	0.453	0.217
924	26668899	0.166	0.000	0.000	0.453	0.158
925	26668915	0.252	0.000	0.000	0.453	0.177
926	26668942	0.331	0.564	0.476	0.453	0.422
927	26668954	0.317	0.000	0.000	0.453	0.191
928	26668958	0.333	0.999	0.999	0.453	0.633

Table 290. Continued.

929	26668979	0.486	0.637	0.000	0.453	0.368
930	26668985	0.513	0.633	0.282	0.453	0.435
931	26668995	0.184	0.156	0.065	0.453	0.210
932	26669022	0.337	0.785	0.176	0.453	0.406
933	26669052	0.518	0.674	0.000	0.453	0.383
934	26669103	0.159	0.448	0.000	0.453	0.255
935	26669118	0.494	0.660	0.461	0.453	0.476
936	26669250	0.414	0.828	0.828	0.453	0.576
937	26669281	0.121	0.000	0.000	0.453	0.148
938	26669286	0.499	0.000	0.000	0.453	0.231
939	26669289	0.388	0.000	0.000	0.453	0.207
940	26669294	0.475	0.273	0.000	0.453	0.286
941	26669315	0.749	0.500	0.999	0.453	0.615
942	26669319	0.254	0.422	0.337	0.453	0.344
943	26669338	0.533	0.000	0.000	0.453	0.238
944	26669390	0.667	1.000	0.000	0.453	0.487
945	26669404	0.278	0.627	0.000	0.453	0.320
946	26669432	0.618	0.666	0.000	0.453	0.403
947	26669461	0.214	0.000	0.000	0.453	0.168
948	26669478	0.333	0.998	0.000	0.453	0.414
949	26669479	0.226	0.000	0.000	0.453	0.171
950	26669527	0.401	0.430	0.406	0.453	0.393
951	26669539	0.333	0.000	0.999	0.453	0.414
952	26669551	0.413	0.000	0.000	0.453	0.212
953	26669552	0.465	0.000	0.000	0.562	0.267
954	26669553	0.333	0.000	0.000	0.453	0.194
955	26669561	0.155	0.423	0.000	0.453	0.248
956	26669590	0.353	0.732	0.190	0.453	0.401
957	26669597	0.637	0.499	0.000	0.453	0.371
958	26669600	0.000	0.000	0.828	0.453	0.303
959	26669603	0.248	0.437	0.000	0.453	0.272
960	26669642	0.352	0.528	0.528	0.742	0.546
961	26669692	0.122	0.000	0.620	0.453	0.284
962	26669736	0.457	0.000	0.000	0.453	0.222
963	26669766	0.551	0.698	0.448	0.453	0.494
964	26669782	0.230	0.399	0.649	0.453	0.402
965	26669823	0.434	0.000	0.000	0.453	0.217
966	26669939	0.385	0.421	0.000	0.453	0.298
967	26670067	0.171	0.000	0.000	0.453	0.159
968	26670091	0.276	0.000	0.828	0.453	0.364
969	26670373	0.038	0.115	0.000	0.453	0.155
970	26670425	0.076	0.115	0.115	0.453	0.188
971	26670806	0.666	0.000	0.000	0.453	0.268
972	26670959	0.500	1.000	0.000	0.453	0.451
973	26672083	0.457	0.914	0.000	0.453	0.422
974	26672296	0.542	0.365	0.365	0.453	0.401
975	26672800	0.298	0.000	0.557	0.453	0.309
976	26673187	0.345	0.339	0.592	0.453	0.402
977	26673380	0.167	0.000	0.000	0.453	0.158

Table 290. Continued.

978	26673551	0.127	0.000	0.000	0.453	0.149
979	26673571	0.609	0.913	0.913	0.453	0.656
980	26673577	0.374	0.914	0.914	0.453	0.605
981	26673579	0.487	0.730	0.000	0.453	0.389
982	26673738	0.512	0.435	0.000	0.453	0.329
983	26673772	0.245	0.218	0.000	0.453	0.223
984	26673810	0.416	0.999	0.999	0.453	0.652
985	26673836	0.057	0.000	0.115	0.453	0.159
986	26673911	0.167	0.000	0.999	0.453	0.377
987	26674024	0.221	0.067	0.000	0.453	0.185
988	26674140	0.402	0.306	0.000	0.453	0.277
989	26674231	0.248	0.163	0.000	0.453	0.212
990	26674295	0.305	0.000	0.000	0.453	0.188
991	26674296	0.347	0.195	0.195	0.453	0.283
992	26674396	0.499	0.998	0.000	0.453	0.450
993	26674420	0.325	0.437	0.698	0.453	0.442
994	26674465	0.679	0.118	0.000	0.453	0.296
995	26674469	0.329	0.154	0.154	0.453	0.261
996	26674485	0.224	0.618	0.618	0.453	0.442
997	26674500	0.144	0.089	0.176	0.453	0.211
998	26674502	0.343	0.719	0.000	0.453	0.355
999	26674568	0.457	0.000	0.000	0.453	0.222
1,000	26674575	0.363	0.453	0.156	0.453	0.335
1,001	26674599	0.420	0.671	0.000	0.453	0.361
1,002	26674735	0.169	0.214	0.038	0.453	0.214
1,003	26674840	0.340	0.902	0.000	0.453	0.394
1,004	26674947	0.534	0.869	0.869	0.453	0.620
1,005	26675000	0.271	0.000	0.000	0.453	0.181
1,006	26675120	0.573	0.666	0.942	0.453	0.600
1,007	26675189	0.312	0.438	0.000	0.453	0.286
1,008	26675285	0.274	0.663	0.663	0.453	0.472
1,009	26675325	0.463	0.666	0.000	0.453	0.369
1,010	26675376	0.357	0.484	0.000	0.453	0.306
1,011	26675408	0.397	0.515	0.000	0.453	0.322
1,012	26675472	0.418	0.000	0.000	0.453	0.213
1,013	26675476	0.288	0.577	0.000	0.453	0.311
1,014	26675490	0.391	0.452	0.598	0.453	0.438
1,015	26675540	0.424	0.522	0.522	0.453	0.444
1,016	26675789	0.273	0.000	0.000	0.453	0.181
1,017	26675796	0.321	0.632	0.132	0.453	0.360
1,018	26675905	0.381	0.057	0.499	0.453	0.327
1,019	26675924	0.833	1.000	0.000	0.453	0.524
1,020	26675958	0.167	0.000	0.000	0.453	0.158
1,021	26676085	0.168	0.000	0.637	0.453	0.298
1,022	26676096	0.363	0.000	0.000	0.453	0.201
1,023	26676144	0.518	0.000	0.000	0.453	0.235
1,024	26676187	0.337	0.563	0.266	0.453	0.377
1,025	26676392	0.478	0.870	0.000	0.453	0.417
1,026	26676662	0.407	0.563	0.222	0.453	0.383

Table 290. Continued.

1,027	26676692	0.468	0.462	0.365	0.453	0.406
1,028	26676940	0.304	0.693	0.336	0.453	0.414
1,029	26677010	0.489	0.000	0.000	0.453	0.229
1,030	26677286	0.512	0.500	0.000	0.453	0.344
1,031	26677727	0.236	0.471	0.000	0.453	0.277
1,032	26677970	0.465	0.764	0.764	0.453	0.559
1,033	26678021	0.374	0.000	0.000	0.453	0.203
1,034	26678239	0.477	0.695	0.000	0.453	0.379
1,035	26678275	0.390	0.557	0.000	0.453	0.329
1,036	26678320	0.554	0.400	0.000	0.453	0.331
1,037	26678597	0.239	0.000	0.000	0.453	0.174
1,038	26678944	0.416	0.999	0.000	0.453	0.432
1,039	26679399	0.195	0.000	0.000	0.453	0.164
1,040	26679755	0.297	0.557	0.557	0.453	0.431
1,041	26679794	0.250	0.000	0.000	0.453	0.176
1,042	26680360	0.138	0.414	0.000	0.453	0.243
1,043	26680497	0.371	0.000	0.000	0.453	0.203
1,044	26682268	0.583	0.999	0.500	0.453	0.579
1,045	26683111	0.073	0.023	0.586	0.453	0.271
1,046	26683292	0.389	0.000	0.000	0.453	0.207
1,047	26683377	0.000	0.000	0.000	0.453	0.121
1,048	26683431	0.264	0.000	0.000	0.453	0.179
1,049	26683891	0.069	0.000	0.805	0.453	0.313
1,050	26683914	0.243	0.732	0.732	0.453	0.496
1,051	26684106	0.527	0.666	0.000	0.453	0.383
1,052	26684535	0.165	0.169	0.328	0.453	0.267
1,053	26684880	0.268	0.333	0.000	0.453	0.253
1,054	26685225	0.266	0.200	0.000	0.453	0.224
1,055	26685688	0.486	0.400	0.000	0.453	0.316
1,056	26685891	0.832	0.998	0.000	0.453	0.523
1,057	26687060	0.605	0.666	0.828	0.453	0.582
1,058	26687158	0.177	0.000	0.148	0.453	0.193
1,059	26687172	0.429	0.285	0.109	0.453	0.302
1,060	26687537	0.504	0.773	0.000	0.453	0.402
1,061	26688070	0.309	0.207	0.288	0.453	0.298
1,062	26688356	0.264	0.000	0.000	0.453	0.179
1,063	26688812	0.227	0.000	0.000	0.453	0.171
1,064	26689818	0.333	0.998	0.998	0.453	0.633
1,065	26691112	0.339	0.387	0.000	0.453	0.281
1,066	26691322	0.327	0.465	0.508	0.453	0.407
1,067	26693813	0.456	0.299	0.000	0.453	0.287
1,068	26695695	0.502	0.391	0.000	0.453	0.317
1,069	26700719	0.525	0.250	0.457	0.453	0.392
1,070	26700757	0.379	0.000	0.000	0.453	0.205
1,071	26701809	0.211	0.000	0.000	0.453	0.168
1,072	26703692	0.290	0.000	0.593	0.453	0.315
1,073	26703746	0.128	0.599	0.000	0.453	0.281
1,074	26704319	0.580	0.869	0.000	0.453	0.440
1,075	26733618	0.332	0.000	0.000	0.453	0.194

Table 290. Continued.

1,076	26734201	0.350	0.385	0.551	0.453	0.404
1,077	26734420	0.022	0.000	0.000	0.453	0.126
1,078	26735014	0.247	0.000	0.000	0.453	0.176
1,079	26735287	0.271	0.297	0.331	0.453	0.319
1,080	26735339	0.333	0.000	0.000	0.453	0.194
1,081	26735480	0.235	0.000	0.000	0.453	0.173
1,082	26735568	0.293	0.200	0.000	0.453	0.230
1,083	26735664	0.267	0.267	0.000	0.453	0.239
1,084	26737361	0.299	0.000	0.000	0.453	0.187
1,085	26739311	0.518	0.776	0.000	0.453	0.406
1,086	26740330	0.998	0.000	0.998	0.453	0.560
1,087	26740344	0.140	0.000	0.839	0.453	0.336
1,088	26741268	0.000	0.000	0.000	0.453	0.121
1,089	26742119	0.652	0.599	0.766	0.453	0.564
1,090	26751054	0.259	0.385	0.000	0.453	0.263
1,091	26751316	0.167	1.000	1.000	1.000	0.817
1,092	26760543	0.529	0.500	0.000	0.453	0.347
1,093	26760694	0.206	0.132	0.000	0.453	0.195
1,094	26762207	0.998	0.998	0.000	0.453	0.560
1,095	26762245	0.667	1.000	1.000	0.453	0.707

## VITA

Thomas Bock is employed by *Kern Technology Group* (KTG) where he conducts innovative research on systems dynamics. In this capacity, he assesses the effectiveness and suitability of viable systems and contributes to scientific/technical reports for the *Office of Naval Research* (ONR). When working for *American Systems*, Tom provided modeling and simulation expertise to joint and naval acquisition programs. His work for *BAE Systems* (supporting the *U.S. Army Training and Doctrine Command*) included the development of a comprehensive roadmap synchronized with the *Army Data Board*, *TRADOC* knowledge management strategic plan, and *TRADOC* campaign plan. On other *DoD* programs (with *Scientific Research Corporation* and *The Sigmon Group*), Tom led all data management and planning activities for several joint tests and provided information technology solutions in support of *NATO's* strategic realignment process.

Also, Tom has worked with several top consulting firms providing project management and systems integration expertise. As a member of *Accenture's* consulting team, he worked closely with executive staff managing client relationships, facilitating the problem-solving process, and designing customized IT solutions for Fortune 500 companies.

Thomas Bock received his B.S.B.A. in Information Systems and M.E. degree in Modeling and Simulation from *Old Dominion University*. While Tom's general research interests include continuous process improvement as well as verification and validation of data models, his Ph.D. research focuses on business transformation/change management.